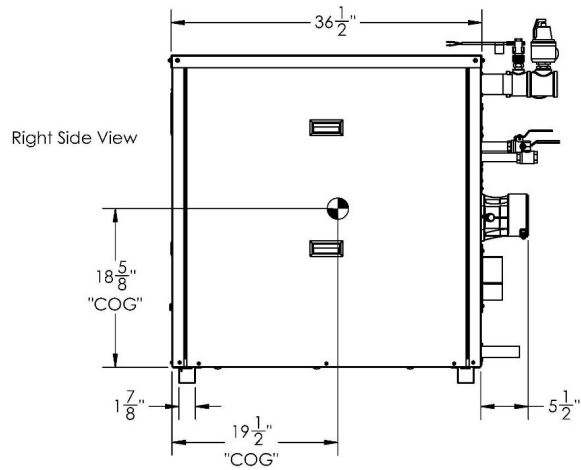
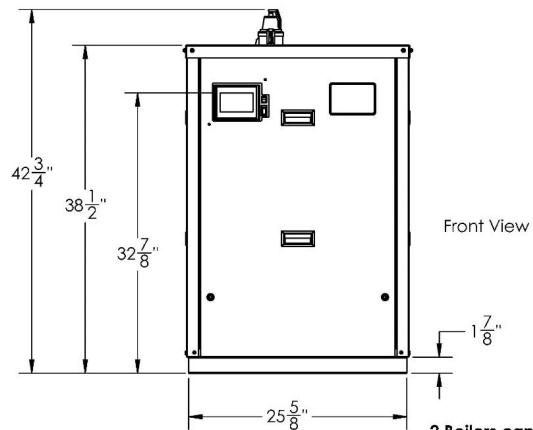
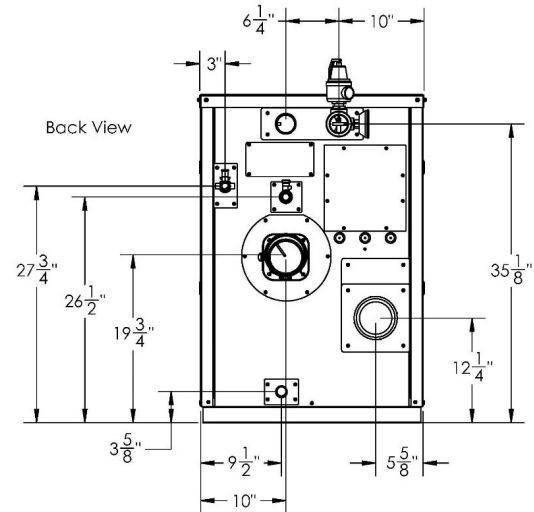
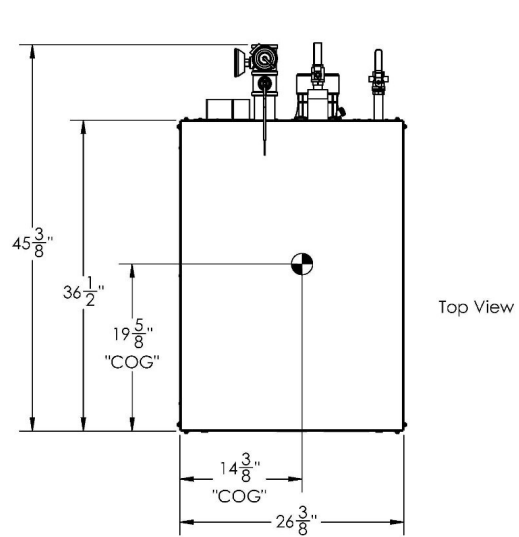




# Boiler SUBMITTAL DATA SHEET



2 Boilers can be stacked vertically with included bracket kit.



PO BOX 3244 | LANCASTER, PA 17601

AMP-500 C

INNOVATIVE EQUIPMENT FOR  
HOT WATER SYSTEMS

WWW.THERMALSOLUTIONS.COM

Updated 9/16/2025

ABCP-20250901



# Boiler SUBMITTAL DATA SHEET

## RATINGS AND CAPACITIES

Input - Low fire:	50,000	BTU/HR
Input - High Fire:	500,000	BTU/HR
Output - High Fire:	485,000	BTU/HR
Boiler Horsepower:	14.5	BHP
Thermal Efficiency:	97%	
Heating Surface:	39.1	Sq.Ft.
Water Content:	4.3	Gallons
Fuel:	Natural Gas or LP Gas	
Firing Rate:	Full Modulation	
Burner Turndown:	10:1	
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: 470 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



## DIMENSIONS / CONNECTIONS

Height:	38-1/2"	(Note 1)
Width:	26-3/8"	(Note 2)
Length:	36-1/2"	(Note 3)
Supply Connection:	2" NPT	
Return Connection:	2" NPT	
Vent / Air Intake Connections:	4"	
Condensate / Boiler Drain Connection:	1"	
Gas Connection:	3/4" NPT	

## FLOWS AND PRESSURE DROPS

Delta T	Flow (GPM)	Head Loss (ft)
20°F Δ T	49	13.7
30°F Δ T	32	6.7
40°F Δ T	24	4.1

## Electrical Requirements: (Appliance Only)

Model	Voltage	Phase	Hz	Max. Amp Draw
400	120	1	60	7
500				7
650				8
800				8
100				8

## BOILER ALTERNATIVE RELIEF VALVE KITS (75 PSI STD.)

<input type="checkbox"/>	30 PSI	<input type="checkbox"/>	100 PSI
<input type="checkbox"/>	50 PSI	<input type="checkbox"/>	125 PSI
<input type="checkbox"/>	60 PSI	<input type="checkbox"/>	150 PSI

## Water Heater T&P Relief Valve Kits

<input type="checkbox"/>	125 PSI	
<input type="checkbox"/>	150 PSI	

## 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



# Boiler SUBMITTAL DATA SHEET

## 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

Low NOx Emissions ( < 10 ppm)

Full Modulation, 10:1 Turndown

Natural Gas or Propane

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

Direct Spark Ignition System

High/Low gas pressure switches, manual reset

Variable Speed Combustion Blower

Blocked Vent Switch

### VENTING

Category II or IV Venting

Individual or Common (Engineered) Vent System

Vertical or Horizontal

3-in-1 Vent Connector: Accepts CPVC, PP or Stainless Steel

*NOTE: PVC venting requires CPVC Vent kit; Consult I&O Manual.*

Includes built-in vent gas sensor test port

Direct Vent & Sealed or Room Air or Outdoor Ready

Outdoor installations require the optional outdoor exhaust vent kit

\* 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.

### APPLIANCE EQUIPMENT

Indoor / Outdoor Construction (Field Convertible)

Stainless steel water piping suitable for boiler or domestic (potable) water applications

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 75 PSI Relief Valve Standard (Available 30, 50, 60, 100, 125 or 150 psig)

NOTE: Stacking Brace Kit (PN# 111405-00 included with all 400-1000 models. Kit includes 2 braces & 8 self-drilling screws.

NOTE: For stacking outdoor boilers, consult factory

### ELECTRICAL DESIGN

#### Models 400-500:

- 120 VAC Only                      Amp Draw: 7.0 Amps

#### Models 650-1000:

- 120 VAC Only                      Amp Draw: 8.0 Amps

#### 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



# Boiler SUBMITTAL DATA SHEET

## OPTIONAL EQUIPMENT

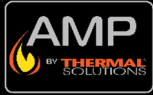
- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer)              |   |  |
| <input type="checkbox"/> Water Heater Pump (Circulation Pump & Pump Flange Kit)  | <input type="checkbox"/> 4-12 GPG Water Hardness      | <input type="checkbox"/> 12-15 GPG Water Hardness      |
| <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 (Wired)  |   |  |
| <input type="checkbox"/> Domestic Hot Water Sensor with Well Kit   |   |  |
| <input type="checkbox"/> EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA) |   |  |
| <input type="checkbox"/> Alarm Buzzer with Silencing Switch  |   |  |
| <input type="checkbox"/> PVC /CPVC Vent Kit  | <input type="checkbox"/> PN# 111569-01, Sizes 400-500 | <input type="checkbox"/> PN# 111569-02, Sizes 650-1000 |
| <input type="checkbox"/> Outdoor Vent Kit  | <input type="checkbox"/> PN# 110644-01, Sizes 400-500 | <input type="checkbox"/> PN# 110645-01, Sizes 650-1000 |
| <input type="checkbox"/> Universal Communications Gateway  | <input type="checkbox"/> BACnet, Metasys N2, Modbus   | <input type="checkbox"/> LonWorks                      |
| <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.

- |  |              |             |
|--|--------------|-------------|
| <input type="checkbox"/> Water Heater Storage Tank | Model: _____ | Size: _____ |
|--|--------------|-------------|

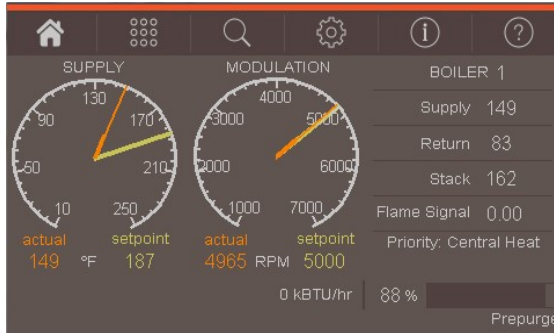
## EXTENDED WARRANTY

- |                                       |                                       |  |   |  |
|---------------------------------------|---------------------------------------|--|---|--|
| <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 |
|---------------------------------------|---------------------------------------|--|---|--|



# Boiler SUBMITTAL DATA SHEET

## 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
- Multiple 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, DHW, Sequencer and Fan