### RATINGS AND TECHNICAL DATA

<table>
<thead>
<tr>
<th>AMP-L MODELS</th>
<th>INPUT MIN (MBH)</th>
<th>INPUT MAX (MBH)</th>
<th>OUTPUT MIN (MBH)</th>
<th>OUTPUT MAX (MBH)</th>
<th>EFFICIENCY</th>
<th>HEATING SURFACE (SQ/FT)</th>
<th>HEATING CONTENT (GAL.)</th>
<th>NATURAL GAS MIN / MAX</th>
<th>PROPANE MIN / MAX</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMP-400</td>
<td>40</td>
<td>399</td>
<td>387</td>
<td>97.0%</td>
<td>35</td>
<td>3.8</td>
<td>4&quot;/14&quot;wc</td>
<td>8&quot;/14&quot;wc</td>
<td>460</td>
<td></td>
</tr>
<tr>
<td>AMP-500</td>
<td>50</td>
<td>500</td>
<td>485</td>
<td>97.0%</td>
<td>39</td>
<td>4.3</td>
<td>4&quot;/14&quot;wc</td>
<td>8&quot;/14&quot;wc</td>
<td>470</td>
<td></td>
</tr>
<tr>
<td>AMP-650</td>
<td>65</td>
<td>650</td>
<td>631</td>
<td>97.0%</td>
<td>52</td>
<td>5.6</td>
<td>4&quot;/14&quot;wc</td>
<td>8&quot;/14&quot;wc</td>
<td>530</td>
<td></td>
</tr>
<tr>
<td>AMP-800</td>
<td>80</td>
<td>800</td>
<td>776</td>
<td>97.0%</td>
<td>61</td>
<td>6.6</td>
<td>4&quot;/14&quot;wc</td>
<td>8&quot;/14&quot;wc</td>
<td>560</td>
<td></td>
</tr>
<tr>
<td>AMP-1000L</td>
<td>100</td>
<td>1000</td>
<td>970</td>
<td>97.0%</td>
<td>75</td>
<td>8.1</td>
<td>4&quot;/14&quot;wc</td>
<td>8&quot;/14&quot;wc</td>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

### DIMENSIONS

<table>
<thead>
<tr>
<th>AMP-L MODELS</th>
<th>&quot;A&quot; LENGTH (Inches)</th>
<th>&quot;B&quot; WIDTH (Inches)</th>
<th>&quot;C&quot; VENT / AIR INTAKE (Inches)</th>
<th>VENT SIZE (Inches)</th>
<th>VENT EQUIV.</th>
<th>GAS OUTLET</th>
<th>GAS INLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMP-400</td>
<td>37 3/4</td>
<td>26 3/8</td>
<td>46 7/8</td>
<td>38 1/2</td>
<td>4</td>
<td>Up to 200</td>
<td>3/4 NPT</td>
</tr>
<tr>
<td>AMP-500</td>
<td>37 3/4</td>
<td>26 3/8</td>
<td>46 7/8</td>
<td>38 1/2</td>
<td>4</td>
<td>Up to 200</td>
<td>3/4 NPT</td>
</tr>
<tr>
<td>AMP-650</td>
<td>53 7/8</td>
<td>26 3/8</td>
<td>66 3/8</td>
<td>38 1/2</td>
<td>6</td>
<td>Up to 200</td>
<td>1 NPT</td>
</tr>
<tr>
<td>AMP-800</td>
<td>53 7/8</td>
<td>26 3/8</td>
<td>66 3/8</td>
<td>38 1/2</td>
<td>6</td>
<td>Up to 200</td>
<td>1 NPT</td>
</tr>
<tr>
<td>AMP-1000L</td>
<td>53 7/8</td>
<td>26 3/8</td>
<td>66 3/8</td>
<td>38 1/2</td>
<td>6</td>
<td>Up to 200</td>
<td>1 NPT</td>
</tr>
</tbody>
</table>

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**Thermal Solutions Products LLC | P.O. Box 3244 | Lancaster, PA 17604-3244 | www.thermalsolutions.com**
## STANDARD EQUIPMENT

### PRESSURE VESSEL DESIGN
- Stainless Steel Heat Exchanger
- ASME Section IV Certified, "H" Stamp
- MAWP 160 PSIG & Max Temp 210°F
- 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
- CPVC, PP or SS Venting *Materials Acceptable
- Combustion Air Intake - Sealed or Room

### ELECTRICAL DESIGN
- Variable Speed Combustion Blower
- 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

### STANDARD EQUIPMENT

| 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. |

### OPTIONAL EQUIPMENT

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hydronic Kit</strong></td>
<td>(Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer)</td>
</tr>
<tr>
<td><strong>External High Limit Temperature Control, Manual Reset</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Condensate Neutralizer</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Supply Header Temperature Sensor:</strong></td>
<td>- Direct Immersion - Well Immersion (with Well)</td>
</tr>
<tr>
<td><strong>Outdoor Air Temperature Sensor:</strong></td>
<td>- Wired - Wireless</td>
</tr>
<tr>
<td><strong>EMS Signal Converter Kit</strong></td>
<td>(Converts Energy or Building Management System 0-10v signal to 4-20mA)</td>
</tr>
<tr>
<td><strong>Motorized Isolation Valves</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Alarm Buzzer with Silencing Switch</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Vent Adapter</strong></td>
<td>- CPVC, Polypropylene, or Stainless Steel</td>
</tr>
<tr>
<td><strong>Universal Communications Gateway</strong></td>
<td>(BACnet, Metasys, Modbus or Lonworks)</td>
</tr>
<tr>
<td><strong>Conductor Sequencing Panel</strong></td>
<td></td>
</tr>
</tbody>
</table>

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.
CONCERT CONTROL FEATURES

Dashboard - Color Touchscreen Display, 4”
- Intuitive Icon Navigation
- “Quick” Setup Menus
- *Real Time BTU/H Display

Energy Efficiency Enhancer
- Anti-Cycling Technology
- Multiplier boiler base load common rate
- Outdoor Air Temperature Reset Curve
- Warm Weather Shutdown
- Boost Temperature & Time
- Ramp Delay
- Over-Temperature Safeguarding

Two (2) Temperature Demand Inputs
- Outdoor Air Reset Curve for Each Input
- Time of Day Setback Capability
  (Enviracom Thermostat must be installed)

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

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

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

Energy Management System (EMS) Interface
- *Firing Rate and Water Temperature Based
  Algorithms for Multiple Boilers; loss of EMS
  signal defaults to local boiler settings
- 4-20mAdc Input/Output (0-10Vdc Optional Converter)
- ModBus Input/Output (BACnet or LonWorks
  Optional Gateway)
- Simultaneous Interface with Peer-to-Peer

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
- Built-in Brown-Out Protection

* Unique to Concert

---

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