SUBMITTAL DATA SHEET

JOB NAME: ___________________________   DATE: ___________________________
LOCATION: ___________________________
ENGINEER: ___________________________
WHOLESALER: _________________________
CONTRACTOR: _________________________
SUBMITTED TO: _________________________
MODEL DESIGNATION: ____________________ FUEL: _________________________

CHECK ONE: ___________________________
______REFERENCE (NOT FOR PRODUCTION)
______APPROVED (IMMEDIATE PRODUCTION)
______APPROVED WITH CHANGES NOTED (IMMEDIATE PRODUCTION)

RATINGS & TECHNICAL DATA

<table>
<thead>
<tr>
<th>MODELS</th>
<th>INPUT</th>
<th>GROSS OUTPUT</th>
<th>THERMAL EFFICIENCY</th>
<th>HEATING SURFACE</th>
<th>WATER CONTENT</th>
<th>FUEL</th>
<th>SHIPPING WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN (MBH)</td>
<td>MAX (MBH)</td>
<td>(%)</td>
<td>(SQ/FT)</td>
<td>(GAL.)</td>
<td>NAT. GAS MIN / MAX</td>
<td>PROPAINE MIN / MAX</td>
</tr>
<tr>
<td>APX425C</td>
<td>80</td>
<td>399</td>
<td>375</td>
<td>94.1%</td>
<td>41.8</td>
<td>3.4</td>
<td>4'/14&quot;wc</td>
</tr>
<tr>
<td>APX525C</td>
<td>100</td>
<td>500</td>
<td>485</td>
<td>97.0%</td>
<td>58.1</td>
<td>4.3</td>
<td>4'/14&quot;wc</td>
</tr>
<tr>
<td>APX625C</td>
<td>125</td>
<td>625</td>
<td>594</td>
<td>95.0%</td>
<td>76.2</td>
<td>5.4</td>
<td>4'/14&quot;wc</td>
</tr>
<tr>
<td>APX725C</td>
<td>145</td>
<td>725</td>
<td>689</td>
<td>95.0%</td>
<td>76.2</td>
<td>5.4</td>
<td>4'/14&quot;wc</td>
</tr>
<tr>
<td>APX825C</td>
<td>160</td>
<td>800</td>
<td>760</td>
<td>95.0%</td>
<td>87</td>
<td>6.2</td>
<td>4'/14&quot;wc</td>
</tr>
</tbody>
</table>

DIMENSIONS

<table>
<thead>
<tr>
<th>MODELS</th>
<th>&quot;A&quot; LENGTH (Inches)</th>
<th>&quot;B&quot; HEIGHT (Inches)</th>
<th>&quot;C&quot; VENT SIZE (Inches)</th>
<th>&quot;D&quot; AIR INTAKE SIZE (Inches)</th>
<th>&quot;F&quot; GAS SUPPLY / RETURN LENGTH (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APX425C</td>
<td>31-3/16</td>
<td>43-1/2</td>
<td>4</td>
<td>Up to 100</td>
<td>3/4 FPT</td>
</tr>
<tr>
<td>APX525C</td>
<td>46-1/2</td>
<td>35-1/16</td>
<td>4</td>
<td>Up to 100</td>
<td>3/4 FPT</td>
</tr>
<tr>
<td>APX625C</td>
<td>49-1/2</td>
<td>35-1/16</td>
<td>6</td>
<td>Up to 200</td>
<td>1 FPT</td>
</tr>
<tr>
<td>APX725C</td>
<td>49-1/2</td>
<td>35-1/16</td>
<td>6</td>
<td>Up to 200</td>
<td>1 FPT</td>
</tr>
<tr>
<td>APX825C</td>
<td>53-5/16</td>
<td>35-1/16</td>
<td>6</td>
<td>Up to 200</td>
<td>1 FPT</td>
</tr>
</tbody>
</table>
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## STANDARD EQUIPMENT

### PRESSURE VESSEL DESIGN

*ASME Stainless Steel Heat Exchanger
ASME Section IV Certified, "H" Stamp
MAWP 160 PSIG & Max Temp 210°F
Ten Year Limited Heat Exchanger Warranty

### COMBUSTION DESIGN

Stainless Steel Mesh Pre-Mix Burner
Low NOx Emissions (<20 ppm)
Full Modulation, 5:1 Turndown
Natural or LP Gas
4" wc to 14" wc inlet gas pressure
Direct Spark Ignition System
Zero governor gas valve
Variable Speed Combustion Blower
Air Proving Switch

### VENTING

* 3-in-1 Vent Connector
- CPVC, Polypropylene or Stainless Steel
- Combustion Analyzer Test Port
PVC Vent Kit:
  - 30" CPVC Pipe, Schedule 40
  - 90° elbow, Schedule 80
  - (2 qty) vent terminals w/ rodent screens
Vent - Horizontal or Vertical (Cat. IV)
- Up to 100 Equiv/Ft (APX425C & 525C) or 200 Equiv/Ft (APX625C - 825C)
Air Intake - Sealed or Room Air (Cat. IV)
- Up to 100 Equiv/Ft

* Unique to Thermal Solutions

### BOILER EQUIPMENT

* Concert Boiler Control (24 Vac)
High Limit w/Auto Reset Temperature Control
High Limit w/Manual Reset Safety Temperature Control
Water Flow Switch
Supply & Return Water Temperature Sensors
Flue Gas Temperature Sensor
Outdoor Air Temperature Sensor
Air Vent Valve
Boiler Drain Valve
Condensate trap
Stacking boiler brackets
Pressure & Temperature Gauge
ASME Safety Relief Valve
- 50 psig, APX425C & 525C
- 60 psig, APX625C - 825C

### ELECTRICAL DESIGN

120VAC/60HZ/1PH - High Voltage Printed Circuit Board (PCB)
- Amp Draw (APX425C < 7 / APX525 < 6 / APX625C - 825C < 8)
- Three sets of Pump Contacts (Boiler, DHW, System)
- PCB Fused Connections
24VAC/5VDC - Low Voltage Printed Circuit Board (PCB)
- 24VAC Contacts for Enable/Disable Sensor, DHW Demand, Low Water Cutoff, Proving Switch or Auto or Manual Reset External Limit, Lockout Alarm, EnviraCom Thermostat & Flow Switch
- 5VDC Contacts for Remote Header Sensor, DHW Tank Sensor, Outdoor Air Sensor, Peer-To-Peer Communication, EMS Interface & Remote 4-20mA
- RJ45 Jacks (Qty 2) Peer-To-Peer or ModBus Optional Connections
- PCB Fused Connections

### OPTIONAL EQUIPMENT

- Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit, ASME CSD-1 Kit (Except Model APX425C), Low Water Cutoff with Manual Reset and Condensate Neutralizer)
- ASME CSD-1 Kit (includes High & Low Gas Pressure Switches, Manual Reset)
- External High Limit Temperature Control, Manual Reset
- Low Water Cut-Off, Manual Reset
- Condensate Neutralizer
- 80 psig Relief Valve
- 100 psig Relief Valve
- Header Sensor, Direct Immersion
- Header Sensor, Well Immersion (with Well)
- Wireless Outdoor Air Temperature Kit
- EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA)
- Universal Communications Gateway (BACnet, Metasys, Modbus or Lonworks)
- IPEX Low Profile Sidewall Termination Kit (3" vent/air intake on 425C & 525C | 4" vent/air intake on 625C to 825C)
- Eco Propel Variable Speed Pump Kit
- Eco Propel Variable Speed Pump Kit with EMS Signal Converter
CONCERT BOILER CONTROL FEATURES

Dashboard - Color Touchscreen Display, 4.3"
- 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
  (Enviracom Thermostat must be installed)

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

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 Isolation Valve, Combustion
  Air Damper or Standby Loss Damper
- Pump Overrun for Heat Dissipation
- Pump Exercise
- Pump Rotor Seizing Protection

Unmatched Archives
- Pump Overrun for Heat Dissipation
- 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)

Peer-to-Peer Boiler Communications
- Multiple Size Boiler Sequencing Up to 8 Units
- *Two (2) Boiler Start/Stop Trigger
- Lead Boiler Automatic Rotation

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

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

* Unique to Thermal Solutions