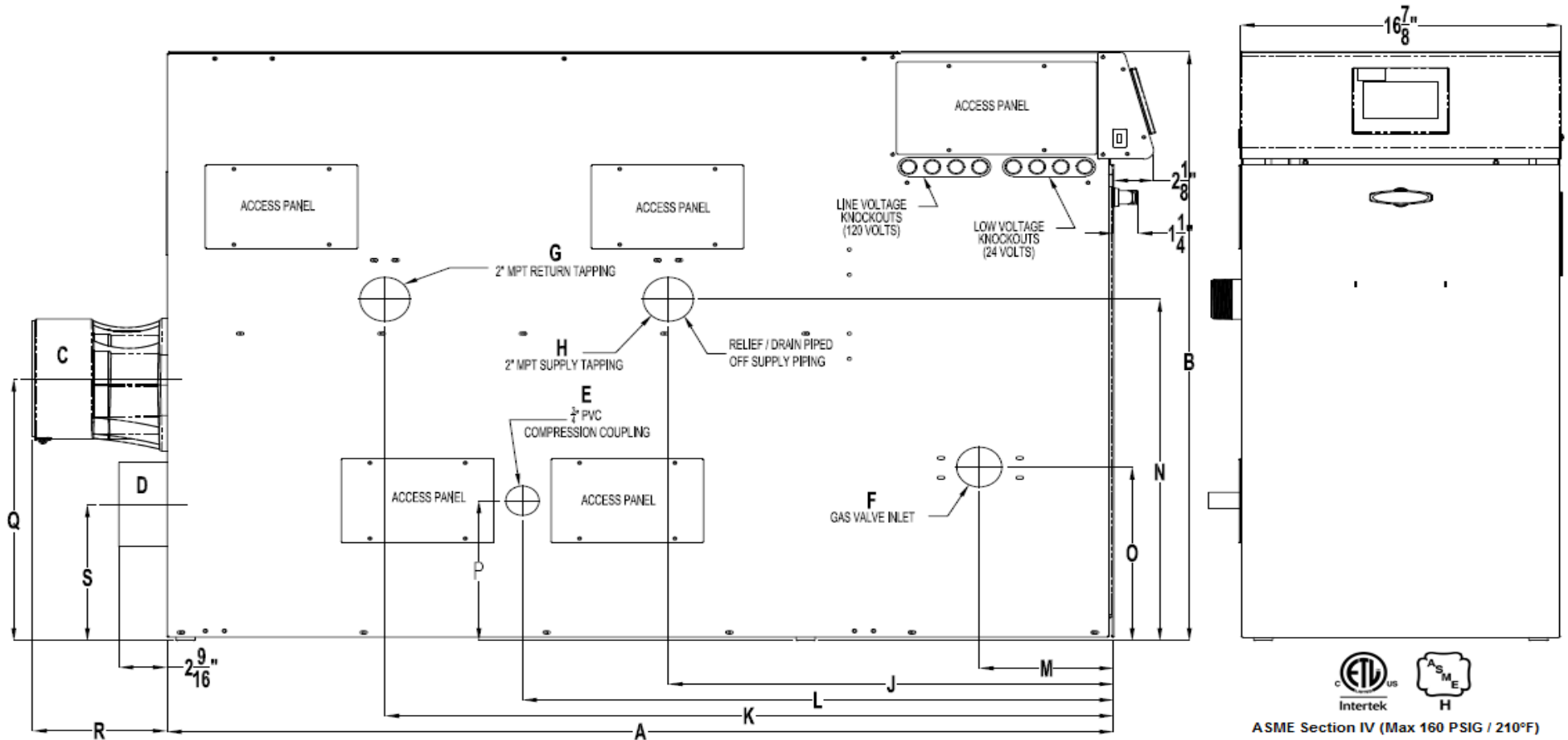


APEX COMMERCIAL CONDENSING BOILERS - SUBMITTAL DATA SHEET



RATINGS AND CAPACITIES

APEX MODEL	INPUT		GROSS OUTPUT (BTU/HR)	BOILER HORSEPOWER (BHP)	THERMAL EFFICIENCY (%)	HEATING SURFACE (SQ.FT.)	WATER CONTENT (GALLONS)	BURNER MODULATION TURNDOWN	FUEL [1]				FLOW AND PRESSURE DROPS								SHIPPING WEIGHT (LBS)
	MIN (BTU/HR)	MAX (BTU/HR)							NATURAL GAS		PROPANE		20°F Δ T (Max)		25°F Δ T		30°F Δ T		35°F Δ T (Min)		
									MIN	MAX	MIN	MAX	FLOW (GPM)	Δ P (FT.HD.)	FLOW (GPM)	Δ P (FT.HD.)	FLOW (GPM)	Δ P (FT.HD.)	FLOW (GPM)	Δ P (FT.HD.)	
APX825C	160,000	800,000	760,000	22.7	95.0%	87	6.2	5:1	4" WC	14" WC	8" WC	14" WC	76	16.1	60.8	10.8	50.7	7.8	43.4	5.9	500

[1] Fuel is not field convertible; must be ordered as Natural Gas or Propane from factory.

DIMENSIONS

Length (A)	53-5/16"	Return Connection (G)	2" MPT	Floor to Supply/Return *Connections (N)	20-5/16"
Height (B)	35-1/16"	Supply Connection (H)	2" MPT	Floor to Gas Valve *Connections (O)	10-5/16"
Width	16-7/8"	Front to Relief Valve/Drain *Connection (I)	23-7/16"	Floor to Condensate Drain *Connection (P)	8-5/16"
Vent Connection (C)	6" CPVC/PP/SS	Front to Supply *Connection (J)	23-7/16"	Floor to Vent *Connection (Q)	15-9/16"
Air Intake Connection (D)	4" PVC	Front to Return *Connection (K)	41-3/16"	Floor to Air Intake *Connection (S)	8-1/8"
Condensate Drain Connection (E)	3/4"	Front to Condensate Drain *Connection (L)	32-9/16"	Rear to Vent Connection (R)	7-1/16"
Gas Valve Inlet Connection (F)	1" FPT	Front to Gas Valve Inlet *Connection (M)	6-7/8"	Rear to Air Intake Connection	2-9/16"
Relief Valve/Boiler Drain **Connection	3/4" FPT	* Dimension is to the Centerline of the Connection		** Piped off Supply Piping	

APX825C

PROPERTY OF
THERMAL SOLUTIONS
 PO BOX 3244 | LANCASTER, PA 17601
 INNOVATIVE EQUIPMENT FOR
 HOT WATER SYSTEMS
 WWW.THERMALSOLUTIONS.COM

STANDARD EQUIPMENT - MODEL APX825C



APEX CONDENSING BOILER

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

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, 60 Psig

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 200 Equivalent Feet
Air Intake - Sealed or Room Air (Cat. IV)
- Up to 100 Equivalent Feet

ELECTRICAL DESIGN

120VAC/60HZ/1PH - High Voltage PCB
- Amp Draw (< 8)
- Three sets of Pump Contacts (Boiler, DHW, System)
- PCB (Printed Circuit Board) Fused Connections
24VAC/5VDC - Low Voltage 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 (Printed Circuit Board) Fused Connections

* Unique to Thermal Solutions

CONCERT BOILER CONTROL

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)

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

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
- 4-20mA Input/Output (0-10Vdc 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

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

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
- Built-in Brown-Out Protection

OPTIONAL EQUIPMENT

_____ Hydronic Kit (Boiler Circulation Pump - Constant Speed or Eco Propel™, Pump Flange Kit, ASME CSD-1 Compliant Kit, Low Water Cutoff with Manual Reset and Condensate Neutralizer)

_____ ASME CSD-1 Kit (includes High & Low Gas Pressure Switches, 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

_____ Universal Communications Gateway (BACnet, Metasys, Modbus or Lonworks)

_____ 0-10Vdc Input Converter

_____ IPEX Low Profile Sidewall Termination Kit