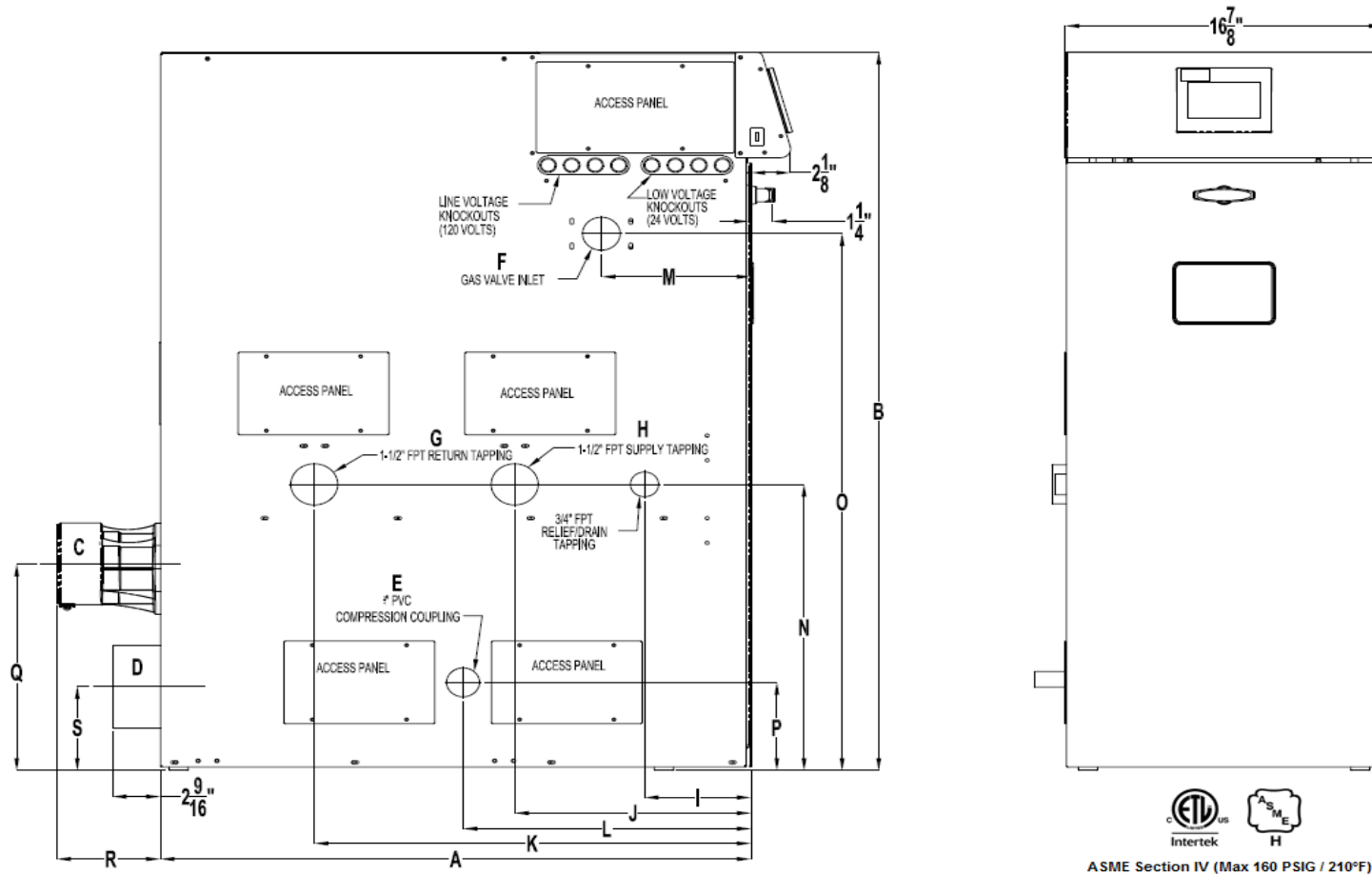


APEX COMMERCIAL CONDENSING BOILERS - SUBMITTAL DATA SHEET






 ASME Section IV (Max 160 PSIG / 210°F)

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.)	
APX425C	80,000	399,000	375,000	11.2	94.1%	42	3.4	5:1	4" WC	14" WC	8" WC	14" WC	37.7	15.9	30.2	10.8	25.1	7.9	21.5	6.1	304

[1] Product is built for Natural Gas firing, but can be converted over to Propane firing with field adjustments.

DIMENSIONS

Length (A)	31-3/16"	Return Connection (G)	1-1/2" FPT	Floor to Supply/Return *Connections (N)	17-5/16"
Height (B)	43-1/2"	Supply Connection (H)	1-1/2" FPT	Floor to Gas Valve *Connections (O)	32-1/2"
Width	16-7/8"	Front to Relief Valve/Drain *Connection (I)	5-1/2"	Floor to Condensate Drain *Connection (P)	5-5/16"
Vent Connection (C)	4" CPVC/PP/SS	Front to Supply *Connection (J)	12-3/8"	Floor to Vent *Connection (Q)	12-1/2"
Air Intake Connection (D)	4" PVC	Front to Return *Connection (K)	23"	Floor to Air Intake *Connection (S)	5-1/8"
Condensate Drain Connection (E)	3/4"	Front to Condensate Drain *Connection (L)	15-1/8"	Rear to Vent Connection (R)	5-1/2"
Gas Valve Inlet Connection (F)	3/4" FPT	Front to Gas Valve Inlet *Connection (M)	7-3/16"	Rear to Air Intake Connection	2-9/16"
Relief Valve/Boiler Drain Connection	3/4" FPT	* Dimension is to the Centerline of the Connection			

APX425C

PROPERTY OF



PO BOX 3244 | LANCASTER, PA 17601

INNOVATIVE EQUIPMENT FOR

HOT WATER SYSTEMS

WWW.THERMALSOLUTIONS.COM

STANDARD EQUIPMENT - MODEL APX425C



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, 50 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 100 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 (< 7)
 - 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, Low Water Cutoff with Manual Reset and Condensate Neutralizer)

_____ 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