

PHANTOM XL SUBMITTAL DATA SHEET

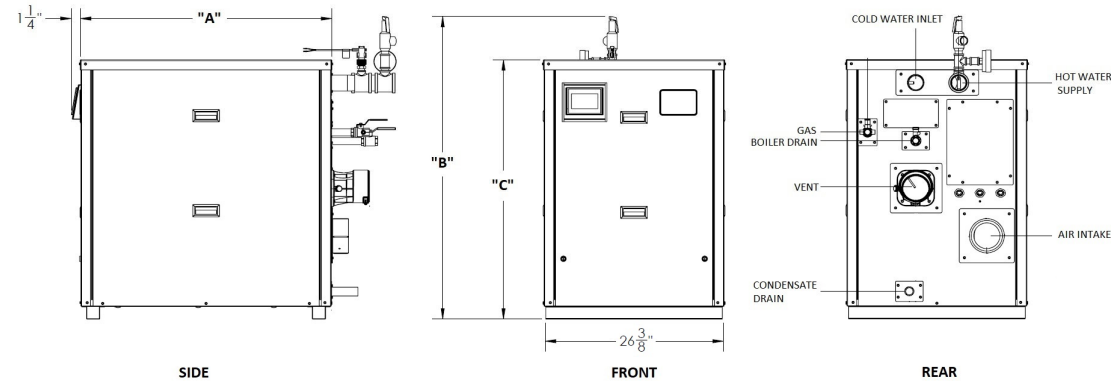
JOB NAME: _____ DATE: _____
 LOCATION: _____
 ENGINEER: _____
 WHOLESALER: _____
 CONTRACTOR: _____
 SUBMITTED TO: _____
 MODEL DESIGNATION: _____ FUEL: _____



CHECK ONE: _____ REFERENCE (NOT FOR PRODUCTION)
 _____ APPROVED (IMMEDIATE PRODUCTION)
 _____ APPROVED WITH CHANGES NOTED (IMMEDIATE PRODUCTION)

RATINGS AND TECHNICAL DATA									
PHANTOM XL MODELS	INPUT		GROSS OUPUT (MBH)	THERMAL EFFICIENCY (%)	HEATING SURFACE (SQ/FT)	WATER CONTENT (GAL.)	*FUEL		SHIPPING WEIGHT (LBS)
	MIN (MBH)	MAX (MBH)					NAT. GAS MIN / MAX	PROPANE MIN / MAX	
PHX 400	40	399	387	97.0%	35	3.8	4"/14"wc	8"/14"wc	460
PHX 500	50	500	485	97.0%	39	4.3	4"/14"wc	8"/14"wc	470
PHX 650	65	650	631	97.0%	52	5.6	4"/14"wc	8"/14"wc	530
PHX 800	80	800	776	97.0%	61	6.6	4"/14"wc	8"/14"wc	560
PHX 1000L	100	999	970	97.0%	75	8.1	4"/14"wc	8"/14"wc	600

DIMENSIONS



PHANTOM XL MODELS	"A"	WIDTH	"B" O/A HGT.	"C" HEIGHT	VENT / AIR INTAKE		SUPPLY GAS (Inches)	RETURN OUTLET (NPT Female)	RETURN INLET (NPT Male)
	LENGTH				SIZE	EQUIV.			
	(Inches)	(Inches)	(Inches)	(Inches)	(Inches)	LENGTH (Ft.)	(Inches)		
PHX 400	36 1/2	26 3/8	46 7/8	38 1/2	4	Up to 200	3/4 NPT	2	2
PHX 500	36 1/2	26 3/8	46 7/8	38 1/2	4	Up to 200	3/4 NPT	2	2
PHX 650	52 3/8	26 3/8	66 3/8	38 1/2	6	Up to 200	1 NPT	2	2
PHX 800	52 3/8	26 3/8	66 3/8	38 1/2	6	Up to 200	1 NPT	2	2
PHX 1000L	52 3/8	26 3/8	66 3/8	38 1/2	6	Up to 200	1 NPT	2	2

Percent Derate per 1000 ft. for Altitudes Above 2000 ft.*

Model	Altitude (ft)	2001-6000	6001-8000	8001-10,100
400	NG	2.5%	No Application	
	LP	2.5%		
500	NG	2.6%		
	LP	2.6%		
650	NG	0.0%	2.0%	2.1%
	LP	0.0%	2.0%	2.7%
800	NG	2.7%	3.4%	3.4%
	LP	3.1%	3.8%	3.5%
1000L	NG	3.8%	3.4%	3.4%
	LP	3.4%	4.1%	4.1%

- *Notes:
- Percentages are per 1000 ft. above sea level.
 - Venting Derate should be applied after the altitude derate.
 - Installations of 400 and 500 models above 6000 ft. is not recommended.

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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

BOILER EQUIPMENT

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

ELECTRICAL DESIGN

Models 400-500:

- 120 VAC Only
Amp Draw: 7.0 Amps

Models 650-1000L:

- 120 VAC Only
Amp Draw: 8.0 Amps
- PCB (Printed Circuit Board) Fused Connections
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

* 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

_____ Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer)

_____ External High Limit Temperature Control, Manual Reset

_____ Condensate Neutralizer

_____ Supply Header Temperature Sensor: Direct Immersion Well Immersion (with Well)

_____ Outdoor Air Temperature Sensor: Wired Wireless

_____ EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA)

_____ Motorized Isolation Valves

_____ Alarm Buzzer with Silencing Switch

_____ Vent Adapter - CPVC, Polypropylene, or Stainless Steel

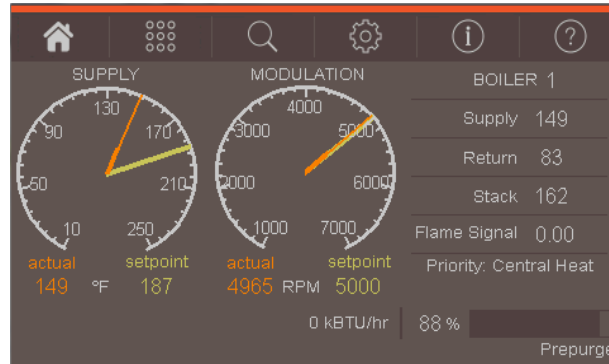
_____ Universal Communications Gateway (BACnet, Metasys, Modbus or Lonworks)

_____ 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.

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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
- 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

* Unique to Concert

Energy Efficiency Enhancer

- Anti-Cycling Technology
- Multiple 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

