



KEY	DESCRIPTION	
A	Flue Outlet	4" [101.6] Diameter (AL29-4C SS)
B	Factory Installed Pilot Gas Li	1/4" [6/4] O.D. Tube
C	Water Supply to System	3" NPT
D	Inlet Air	6" [152.4] Diameter
E	Drain, Startup Condensate	5/8" [15.9] O.D. Tube SS
F	Appliance Drain	1" NPT
G	Gas Supply	1" NPT
H	Water Return from System	3" NPT
I	Optional Gas Train Vent	3/4" NPT (D.B.&B & D.B.&B w/ POC Only)



# Submittal Data Sheet

## RATINGS AND CAPACITIES

Input (MBH):	<b>750,000</b>	BTU/HR
Output (MBH):	<b>638,000</b>	BTU/HR
Boiler Horsepower:	<b>19.1</b>	BTU/HR
Thermal Efficiency:	<b>85.1%</b>	BHP
Heating Surface:	<b>131</b>	Sq.Ft.
Water Content:	<b>15.9</b>	Gallons
Fuel:	<b>Natural Gas or LP Gas</b>	
Firing Rate:	<b>Reliable Modulation</b>	
Burner Turndown:	<b>3:1</b>	
Low NOx Emissions:	<b>&lt;10 ppm</b>	
Inlet Gas Pressure (NG):	<b>See Chart at right</b>	
Inlet Gas Pressure (LP):	<b>See Chart at right</b>	

\* This data supercedes data found on Table 3 of I&O Manual, per PRODUCT UPDATE issued June 6, 2024.

Shipping Weight, Approximate: **1,097** lbs

ASME Section IV (Max 160 PSIG / 250°F)

Setpoint range is 145-230°F

Adjustable, manual reset high limit setting of ≤ 240°F.

ASME H stamp MAWT is 250°F for the vessel. (For max setpoint, see Setpoint range.)

UL Certified to ANSI Z21.13 / CSA 4.9

UL Certified to UL 795 / CSA 3.1



## DIMENSIONS / CONNECTIONS

Height:	<b>60 15/16"</b>	(Note 1)
Width:	<b>28 3/8"</b>	(Note 2)
Length:	<b>30 3/8"</b>	(Note 3)
Supply Connection:	<b>3"</b>	
Return Connection:	<b>3"</b>	
Vent / Air Intake Connections:	<b>4" Vent</b>	<b>6" Intake</b>
Condensate / Appliance Drain Connection:	<b>5/8" Condensate Tube</b>	<b>1" NPT Drain</b>
Gas Connection:	<b>1"</b>	

### NOTES:

1. Height dimension is from floor to top of jacket.

2. Length is from jacket front to jacket rear.

3. Dimensions shown are for reference only

## FLOWS AND PRESSURE DROPS

Delta T	Flow (GPM)	ΔP (Ft. Hd)
20°FΔT	<b>62 (Max)</b>	<b>1.81</b>
40°FΔT	<b>31 (Min)</b>	<b>0.46</b>

## Electrical Supply Options

<input type="checkbox"/>	120v/60hz/1 ph (Standard)	7.5 amps
<input type="checkbox"/>	208v/60hz/1 ph	6.6 amps
<input type="checkbox"/>	230v/60hz/1 ph	6.4 amps
<input type="checkbox"/>	208v/60hz/3ph	6.0 amps
<input type="checkbox"/>	230v/60hz/3ph	6.0 amps
<input type="checkbox"/>	460v/60hz/3ph	3.0 amps

## Blower Motor (hp)

1-1/2

## Relief Valve Options

<input type="checkbox"/>	30 psi	<input type="checkbox"/>	50 psi	<input type="checkbox"/>	60 psi
<input type="checkbox"/>	75 psi	<input type="checkbox"/>	100 psi	<input type="checkbox"/>	125 psi
<input type="checkbox"/>	150 psi				

## Inlet Gas Pressure

SIZE	Nat. Gas Min. ("w.c.)	LP Min. ("w.c.)	Max
<b>500</b>	5.0" w.c.	8.0" w.c.	14.0" w.c.
<b>750</b>	7.0" w.c.*		
<b>1000</b>	7.0" w.c.*		
<b>1500</b>	7.0" w.c.*		
<b>2000</b>	9.0" w.c.*	9.0" w.c.	
<b>2000s</b>	7.0" w.c.	8.0	
<b>2500</b>	6.0" w.c.		
<b>3000</b>	6.0" w.c.		

\* NOTE: Optional natural gas train with 4" w.c. minimum inlet gas pressure ONLY AVAILABLE on sizes 750, 1000, 1500 & 2000.



# Submittal Data Sheet

STANDARD EQUIPMENT		OPTIONAL EQUIPMENT												
<div style="background-color: #ccc; padding: 2px; text-align: center; font-weight: bold;">PRESSURE VESSEL DESIGN</div> <p>Copper Fin-tube construction Carbon steel or cast iron header design Gasketless heat exchanger ASME Section IV certified "H" stamp MAWP 160 PSI &amp; max design temp 250°F 5-year heat exchanger warranty 20-year thermal shock warranty</p>	<div style="background-color: #ccc; padding: 2px; text-align: center; font-weight: bold;">BOILER EQUIPMENT</div> <p>High limit w/ manual reset safety temperature control Water flow switch Low water cut-off with manual reset safety controller Outlet temperature sensor Combustion air switch Pressure and temperature gauge Safety relief valve (Optional pressures 30 - 150 PSI; See details above.)  Single point electrical supply: (Available in: 1 and 3 phase options. See details above.)</p>	<input type="checkbox"/> Low gas pressure venturi, 4" wc (AVAILABLE ONLY on Models 750-2000) [FACTORY INSTALLED OPTION ONLY] <input type="checkbox"/> Honeywell 7800 Series display with ModBus Module <input type="checkbox"/> Line Reactor Adds voltage / spike protection for the blower's VFD. (For areas with dirty voltage) <input type="checkbox"/> Outdoor Air Sensor <input type="checkbox"/> Condensate neutralizer: <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> 850 MBH           <input type="checkbox"/> 1,200 MBH         </div> <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> 2,000 MBH           <input type="checkbox"/> 5,000 MBH         </div> <input type="checkbox"/> Pump Kit (Boiler Circulation Pump, Pump Flange Kit Sized based on a 20°F Delta T) <input type="checkbox"/> Annual Maintenance Kit <input type="checkbox"/> System Temperature Sensor <input type="checkbox"/> Universal com. gateway (BacNet MS/TP, BacNet/IP, LonWorks) <input type="checkbox"/> Local / Remote Switch for Enable / Disable <input type="checkbox"/> Alarm bell with silencing switch <input type="checkbox"/> Relays: <input type="checkbox"/> General Alarm <input type="checkbox"/> Boiler Status <input type="checkbox"/> Conductor Sequencing Panel: (Contact Regional Manager with Questions.)												
<div style="background-color: #ccc; padding: 2px; text-align: center; font-weight: bold;">COMBUSTION DESIGN</div> <p>Maintenance-free ceramic burner Ultr-low NOx emissions (&lt;10ppm) Whisper quiet operation (&lt;50 dBA) Easy to service, 99% efficient industrial air filter Industrial cast aluminum blower assembly VFD Driven Blower Reliable electric spark-to-pilot ignition 10-year burner warranty Honeywell UV-Scanner</p>	<div style="background-color: #ccc; padding: 2px; text-align: center; font-weight: bold;">BURNER EQUIPMENT</div> <p>UL/FM/CSD-1 gas train Reliable Turndown Natural or LP gas Pilot gas valve / Pilot gas regulator Siemens SKP-75 gas valve Low and high gas pressure switches with manual reset</p>	<p>The Conductor Sequencing Panel manages multiple condensing &amp; non-condensing, small &amp; large heat output, new and/or existing boilers (full modulation ), 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.</p>												
<div style="background-color: #ccc; padding: 2px; text-align: center; font-weight: bold;">VENTING</div> <p>Sealed or room air combustion Direct vent (sidewall or vertical) (Cat IV) Conventional venting (Cat II) <i>NOTE: This is NOT a Cat I Vent appliance.</i></p>	<div style="background-color: #ccc; padding: 2px; text-align: center; font-weight: bold;">TSBC Control Features</div> <p>Advanced Boiler Modulation or Setpoint Intelligent Multipler Boiler Staging (8 Boilers) Building Management (BMS) Interface Outdoor Air Temperature Reset Warm Weather Shutdown Domester Hot Weather Priority Auxiliary Device Control - Boiler Pump - System Pump  Adjustable setpoint or burner modulation with 1-9vDC input from BMS</p>													
		<b>Extended Warranty Options Available:</b>												
		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 5px;"><u>Parts Only</u></th> <th style="text-align: center; padding: 5px;"><u>3-Year</u></th> <th style="text-align: center; padding: 5px;"><u>5-Year</u></th> <th style="text-align: center; padding: 5px;"><u>10 Year</u></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"><u>Parts and Labor</u></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 5px;"></td> <td style="text-align: center; padding: 5px;">N/A</td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </tbody> </table>	<u>Parts Only</u>	<u>3-Year</u>	<u>5-Year</u>	<u>10 Year</u>	<u>Parts and Labor</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		N/A	<input type="checkbox"/>	<input type="checkbox"/>
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	N/A	<input type="checkbox"/>	<input type="checkbox"/>											

## TSBC CONTROL FEATURES



### Flexible, Field Selectable Control

- Remote Setpoint Control or Firing Rate Control
- Factory defaults simplify field programming
- Eleven settings to help control oversizing

### Boiler Monitoring and Diagnostic Displays

- Boiler inlet and outlet sensors
- (OPTIONAL) System header sensor
- (OPTIONAL) Outdoor air sensor
- Modulation rate setpoint & modulating percent
- Boiler sequencing messages, alarms, hold & lockout messages
- Event history - Up to 10 alarm messages & data

### Modulation Rate

- Modbus or 1-9VDC input boiler modulation control options
- Choice of six different control modes
- Adjustable PID for local or remote control

### Advanced Availability

- If optional header sensor fails, TSBC automatically reverts back to the outlet sensor to allow continued operation.

### Outdoor Air Reset

- Fine tune the water temp based on outdoor air temp for maximized comfort and fuel savings.  
*Requires optional outdoor air temp sensor.*
- Frost protection enabled with optional outdoor air sensor

### Pump Control

- Domestic Hot Water (DHW) Pump
- System Pump
- Pump Overrun for Heat Dissipation
- Boiler Pump

### Peer-to-Peer Network

- Lead-lag sequencing for up to eight (8) boilers.
- Selectable Lead boiler rotation, 8-720 hours
- RJ11 plug in connections between units (Requires splitter)
- Rotation off feature for complex installations

### Warm Weather Shutdown (WWSD)

- Boilers used primarily for building heat will automatically shut down when outdoor temp reaches programmable WWSD setpoint.
- Saves energy by preventing boiler, pump and / or system pump from starting
- Requires the optional outdoor air sensor

### Other Features

- Domestic Hot Water Priority (DHWP)
- Rotation enable and disable
- Setpoint adjustable up to 230F for boilers and 200F for water heaters
- Defineable min. setpoint to reduce chance of condensing
- 3 pump control capable, Boiler, DHW, System