

SUBMITTAL DATA SHEET

JOB NAME: _____ DATE: _____

LOCATION: _____

ENGINEER: _____

WHOLESALE: _____

CONTRACTOR: _____

SUBMITTED TO: _____

MODEL DESIGNATION: _____ FUEL: _____



CHECK ONE: _____ REFERENCE (NOT FOR PRODUCTION)

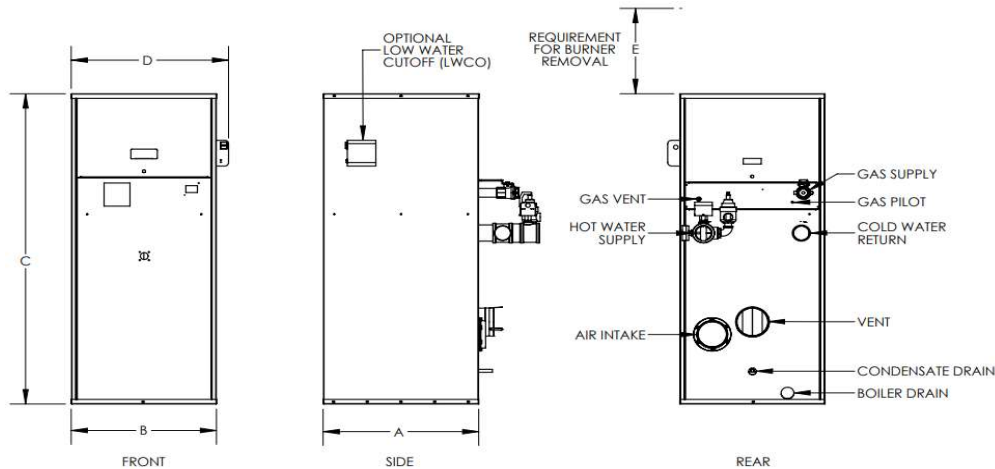
_____ APPROVED (IMMEDIATE PRODUCTION)

_____ APPROVED WITH CHANGES NOTED (IMMEDIATE PRODUCTION)

RATINGS AND TECHNICAL DATA							
EVOLUTION EVSW Models	INPUT	GROSS	THERMAL	HEATING	WATER	*FUEL	SHIPPING
		OUTPUT	EFFICIENCY	SURFACE	CONTENT	NAT. GAS / LP Gas	WEIGHT
	(MBH)	(MBH)	(%)	(SQ/FT)	(GAL.)	MIN / MAX	(LBS)
EVSW-750	750	615	82.0%	131	15.9	7"-14" WC	1772
EVSW-1000	1000	820	82.0%	175	16.4	7"-14" WC	1260
EVSW-1500	1500	1230	82.0%	264	17.4	7"-14" WC	1402
EVSW-2000	2000	1640	82.0%	352	18.5	7"-14" WC	1536

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

DIMENSIONS



Evolution EVSW Models	"A"	"B"	"C"	"D"	"E"	VENT / AIR INTAKE		GAS	SUPPLY	RETURN
	LENGTH	WIDTH	HEIGHT	WIDTH	BURNER REMOVAL	VENT	AIR INTAKE		OUTLET	INLET
	(Inches)	(Inches)	(Inches)	(w/ LWCO)		(Inches)	(Inches)	(Inches)	NPT Male	NPT
EVSW-500	30 3/8	28 3/8	71 1/4	31	16	4	4	1	2	2
EVSW-750	30 3/8	28 3/8	60 15/16	31	16	4	6	1	3	3
EVSW-1000	30 3/8	28 3/8	67 3/8	31	16	6	6	1 1/2	3	3
EVSW-1500	30 3/8	28 3/8	79 7/16	31	19	6	8	1 1/2	3	3
EVSW-2000	30 3/8	28 3/8	91 7/8	31	31	6	8	1 1/2	3	3
EVSW-2000S*	40 1/8	38 1/8	70 1/2	40 3/4	13	6	8	1 1/2	4	4
EVSW-2500*	40 1/8	38 1/8	77 1/2	40 3/4	20	8	8	2	4	4
EVSW-3000*	40 1/8	38 1/8	84 1/2	40 3/4	16.5	8	8	2	4	4

* Features Double Row of Copper Fin Tubes!

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STANDARD EQUIPMENT

PRESSURE VESSEL DESIGN

Copper Fin-tube construction
Carbon steel or cast iron header design
Gasketless heat exchanger
ASME Section IV certified "H" stamp
MAWP 160 PSI & max design temp 250°F
5-year heat exchanger warranty
20-year thermal shock warranty

COMBUSTION DESIGN

Maintenance-free ceramic burner
Ultr-low NOx emissions (<10ppm)
Whisper quiet operation (<50 dBA)
Industrial-grade combustion air filter, 99% efficient
Industrial cast aluminum blower assembly
Variable frequency drive
Electric spark-to-pilot ignition system
10-year burner warranty
Robust UV-Scanner

VENTING

Sealed or room air combustion
Direct vent (sidewall or vertical) (Cat IV)
Conventional venting (Cat II)
NOTE: This is NOT a Cat 1 Vent appliance.

Water Heater EQUIPMENT

Thermal Solutions Water Heater Control (TSBC) [24 Vac]
High limit w/ manual reset safety temperature control
Water flow switch
Low water cut-off with manual reset safety controller
Inlet & Outlet temperature sensor
Combustion air switch
Pressure and temperature gauge
Safety relief valve (optional pressures 30-150 PSI)
Single point electrical supply (Available in 1 or 3 phase; See below for details).

BURNER EQUIPMENT

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

TSBC Control Key Features

Advanced Water Heater Modulation
Building Management System Interface
Outdoor air temperature reset
Remote system temperature monitoring

OPTIONAL EQUIPMENT

Low gas pressure venturi, allows operation down to 4" wc (Available on Models 750-2000 Only)

Double block & bleed (DB&B) Gas Train - (1) motorized & (1) solenoid valve & N.O. vent valve

IRI with Proof of Closure Gas Train - (2) motorized valves w/ POC & N.O. vent valve

Honeywell 7800 Series display with ModBus Module

Line Reactor Adds voltage / spike protection for the blower's VFD. (*Highly recommended*.)

Electrical Power Supply:

☐ 120/60/1 (*Sizes 500-2000 ONLY*)

☐ 208/60/1

☐ 230/60/1

☐ 208/60/3

☐ 230/60/3

☐ 460/60/3

Safety Relief Valve Options:

☐ 30 PSI

☐ 50 PSI

☐ 60 PSI

☐ 75 PSI

☐ 100 PSI

☐ 125 PSI

☐ 150 PSI

Outdoor Air Sensor

Condensate neutralizer:

☐ 850 MBH

☐ 1,200 MBH

☐ 2,000 MBH

☐ 5,000 MBH

Hydronic Kit (Water Heater Circulation Pump, Pump Flange Kit and Condensate Neutralizer) Sized based on a 20°F rT

Annual Maintenance Kit

Supply system temperature sensor

ModBus communication (Water Heater to BMS System)

Universal communications gateway (BacNet MS/TP, BacNet/IP, LonWorks)

Local / remote switch

Alarm bell with silencing switch

Relays:

☐ General Alarm

☐ Water Heater Status

Conductor Sequencing Panel: (Required for multiple EVA Water Heater applications without BMS); Contact Regional Manager with Questions.)

The Conductor manages multiple condensing & non-condensing, small & large heat output, new and/or existing Water Heaters (full modulation or on-off), and steam or hot water applications. It helps improve system efficiency by selecting and modulating the right Water Heater to match operating conditions. The Conductor offers a single point Water Heater 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.

Extended Warranty:

☐ 3 Year Parts

☐ 5 Year Parts

☐ 10-Year Parts

☐ 5-Yr. Prts/Lbr

☐ 10 Yr. Prts/Lbr

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TCBC CONTROL FEATURES



Flexible, Field Selectable Control

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

Temperature Demand Inputs

- Time of Day Setback Capability
(Envirocom Thermostat must be installed)

Water Heater Monitoring and Diagnostic Displays

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

Modulation Rate

- Various Water Heater modulation control options
- Choice of six different control modes
- Adjustable PID for local or remote control

Advanced Availability

- If an optional header sensor fails, TSBC automatically changes to a control mode to allow continued Water Heater 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
- Alternative Control to Combustion Air Damper or Standby Loss Damper
- Pump Overrun for Heat Dissipation
- Pump Exercise
- Pump Rotor Seizing Protection

Peer-to-Peer Network

- Lead-lag sequencing for up to eight (8) Water Heaters.
- Selectable Lead Water Heater rotation, 8-720 hours
- RJ45 plug in connections between units (Requires splitter)
- Rotation off feature for complex installations

Warm Weather Shutdown (WWSD)

- Water Heaters used primarily for building heat automatically shutdown when outdoor air temperature is warm.
- Saves energy by preventing Water Heater, pump and / or system pump from starting
- Requires the optional outdoor air sensor

Other Features

- Domestic Hot Water Priority (DHWP)
- Combustion Air damper Outputs
- Factory configured RS485 Modbus interface for EMS or SCADA available
- Rotation enable and disable
- Low fire only w/external contact closure
- Setpoint adjustable up to 230F for Water Heaters and 200F for water heaters
- Defineable min setpoint to reduce chance of condensing
- 3 pump control capable, Water Heater, DHW, System