ENERPRO
Built by 3I Innovative Industrial Inc.

EPA / EPAW Series

CONDENSING HIGH EFFICIENCY BOILERS

EPA-EPAW 1050-1600-2080 MBH

- Stainless Steel 316 TI Water tube heat exchanger
- Heavy duty patented design
- 10 to 1 turndown ratio
- Honeywell Sola boiler control system
- Touchscreen 7” color LCD control
- Domestic Hot Water heater model EPAW
- Three sizes ranging from 1000 to 2080 MBH
- Low NOx design

ENGINEERED
FOR RELIABILITY
DESIGNED
FOR PERFORMANCE

Brochure cover -2 x EPA 2080 - Bendale Acres Long Term Care Facility Toronto

TECHNOLOGY AND PERFORMANCE

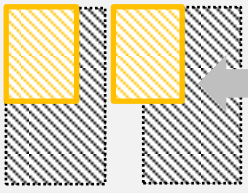
Durability and reliability

Today's standards for high-efficiency boilers and water heaters in commercial buildings are performance and durability. The ENERPRO "EPA and EPAW SERIES" is the product of many years of experience in condensing technology. Because of its **coiled water tube design**; less stress is created on the welds; therefore durability and reliability are greatly increased. The ENERPRO heat exchanger carries a **10-year non-prorated warranty.**

No Thermal shock

In heating applications with extreme conditions and large ΔT's for example in ground source heat pump systems or severe cold return temperatures in domestic hot water heating, you can rest assure that the durability of the ENERPRO EPA and EPAW heat exchanger will not let you down. Thermal shock is never a concern, we absolutely guarantee it. With this assurance, you are able to design your complete heating and hot water systems with smaller piping, pumps and without the need for expensive and maintenance prone 3-way valves.

The increased heat transfer of the patented coiled water tube heat exchanger results in a more compact heating appliance and this smaller footprint allows greater flexibility when designing a new or reconfiguring an existing boiler room. The ENERPRO EPA and EPAW boiler is on average 30% smaller than a non-condensing boiler. With the EPAW water heaters series, your energy cost for heating potable water will dramatically drop along with saving precious floor space in the mechanical room. No need for large energy and space wasting storage tanks.



Save 30% to 50% Floor space inside the boiler room

Old Boilers

New Enerpro EPA Boilers

RELIABILITY THROUGH INNOVATION

ENERPRO “EPA and EPAW SERIES” **fully water-cooled** combustion chamber hosts a high quality knitted metal stainless steel fibre burner and premix configuration. The use of a high quality gas valve and fan assembly allows a 10:1 turn-down ratio for maximum combustion control and reduced short cycling of the boiler. With precise combustion control the ENERPRO “EPA” is able to meet a low CO2 level which maximizes natural gas condensation. Ultra-Low NOx and Ultra-Low CO emissions are standard with the ENERPRO “EPA”.

EPA-EPAW SERIES 1050-1600-2080 Features

The high quality fan assembly and gas valve block result in superior boiler control and turndown ratio and reduced short cycling.

7’’ Touch Screen high definition colour LCD.

Easy access to boiler controls.

A robust frame and casing allows for easy handling and stability when the boiler is put in place.

Easy access for Maintenance

Built-in lifting slots for forklift or Trans-pallet.

Heavy gauge primary water tube heat exchanger design

Heavy gauge 316TI condensing portion of the water tube heat exchanger

Counter-flow direction between flue gas and return water inside the EPA Patented heat exchanger design create the condensation process.

Heavy gauge stainless steel drain pan built to resist low PH corrosive condensate coming from the combustion and the vent.

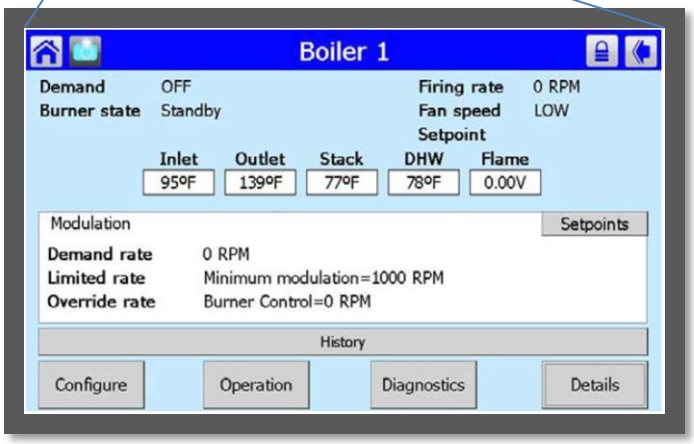
STATE OF THE ART
BOILER CONTROL

All **ENERPRO "EPA and EPAW SERIES"** boiler and water heater models are equipped with the Honeywell Sola boiler control system. The Sola allows for **quick and easy set-up and boiler start-up**. The user-friendly touchscreen control ensures simplified monitoring and diagnostics along with: multiple boiler configuration (up to eight boilers in **LEAD/LAG sequencing**), remote monitoring, fault history, trend analysis, boiler status, communicates via 3-wire RS-485 ModBus™ protocol, DHW priority, BACnet IP, **BACnet** MS/TP via PROTONODE option for communication with a Building Management System (BMS).

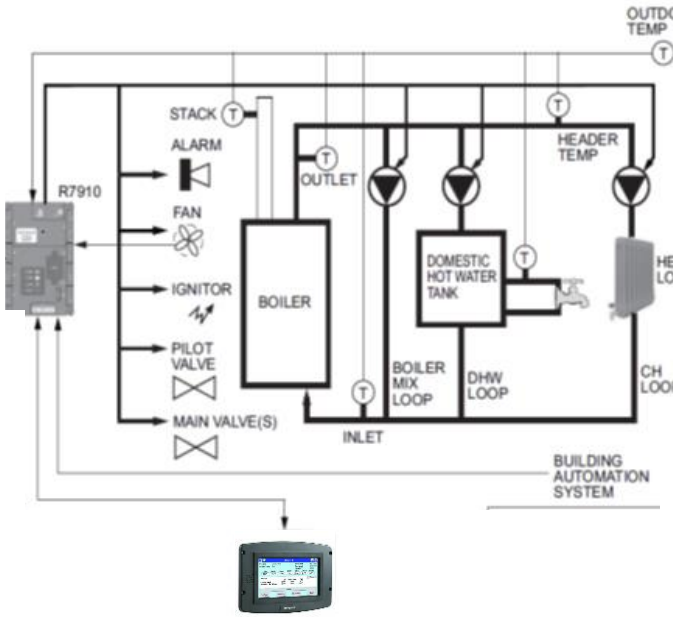
SOLA Control Features

- **Primary Flame Safe Guard**
- **P.I.D Logic control for both heating and DHW (2 loop controls)**
- **Pump control: 3 outputs, 5 different programmable features**
- **15 Item Fault and Alert Code History including equipment status at time of lockout**
- **Lead/Lag up to 8 boilers**
- **Digital inputs**
- **Digital outputs**
- **High limit control**
- **Central Heating, DHW and stack temperature monitoring.**
- **Simultaneous hard wire control connections and/or MODBUS®, LonWorks®, BACnet IP, BACnet MS/TP communication.**

Honeywell Touch Screen S7999D 1006 Large 7" High Definition color LCD.



ENERPRO "EPA AND EPAW SERIES" boiler info screen allows quick analysis and diagnostic of boiler and DHW information and status.

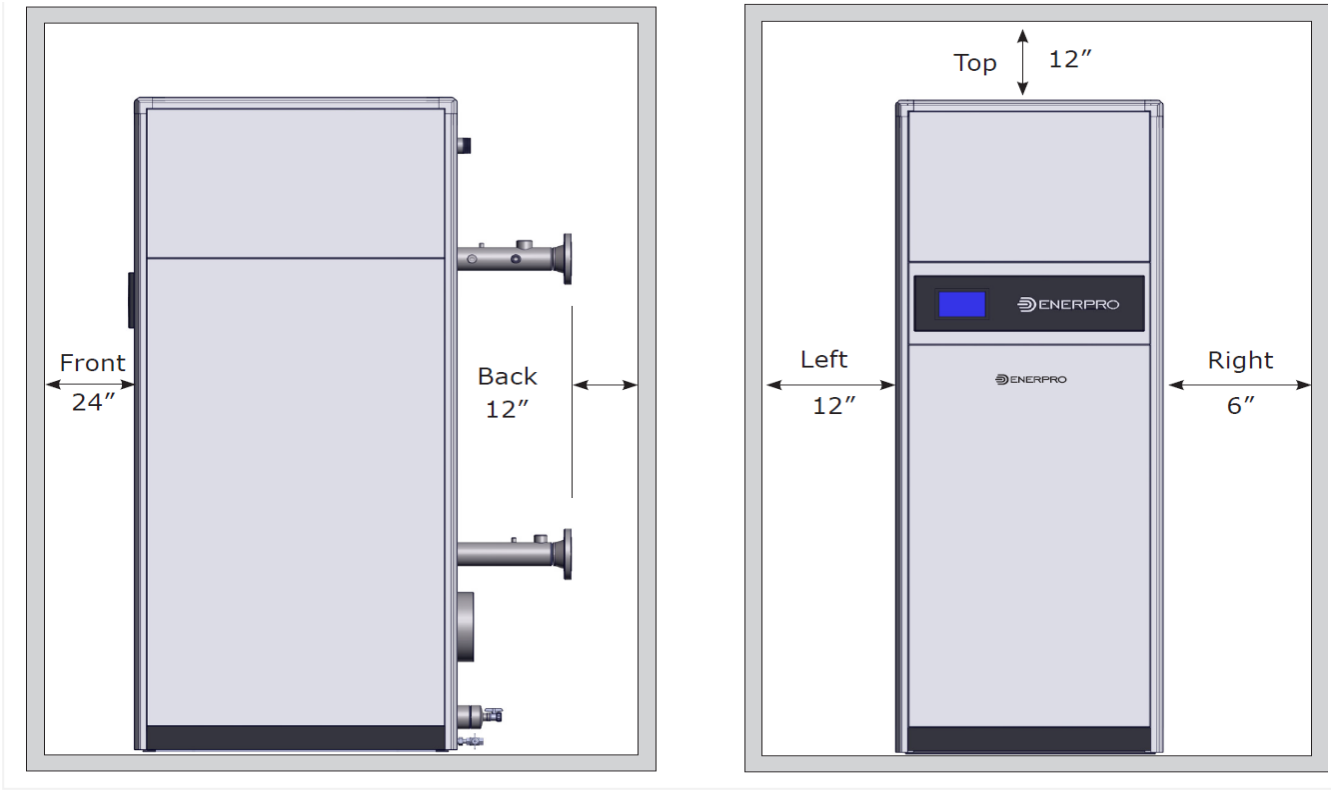


Heating and Indirect DHW loop and pump control.

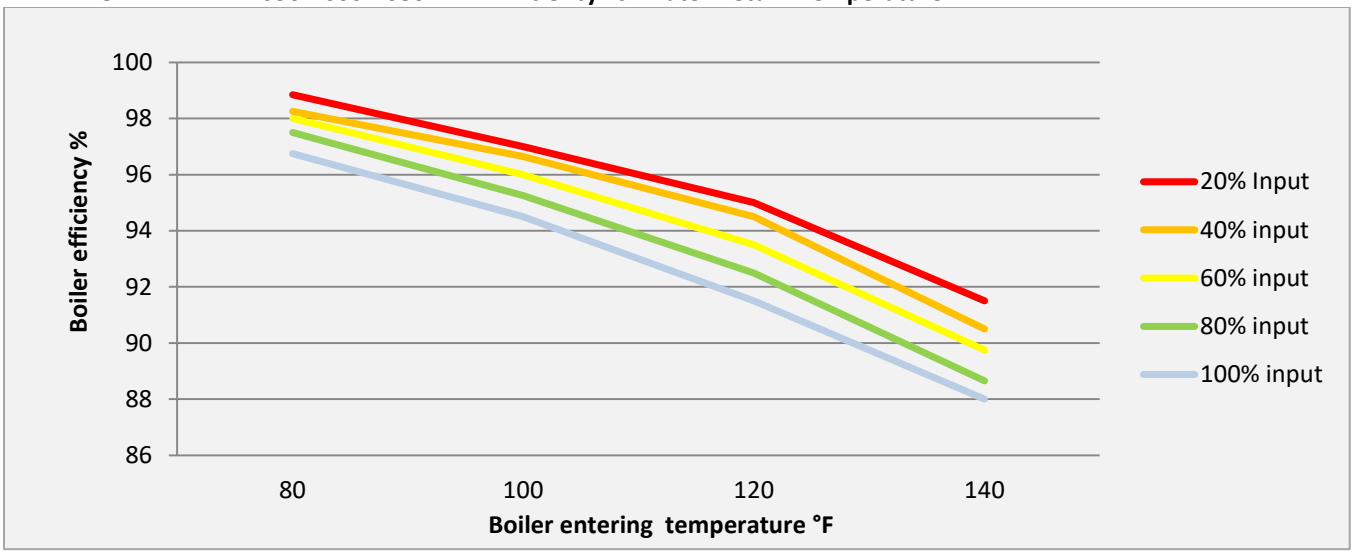
MODBUS® is a registered trademark of Schneider Automation Inc. LonWorks® is a registered trademark of Echelon Corporation.

Engineering Info and Service Clearance
ENERPRO EPA / EPAW Series 1050-1600-2080

Service Clearance



ENERPRO EPA-EPAW 1050-1600-2080 MBH Efficiency vs. Water Return Temperature

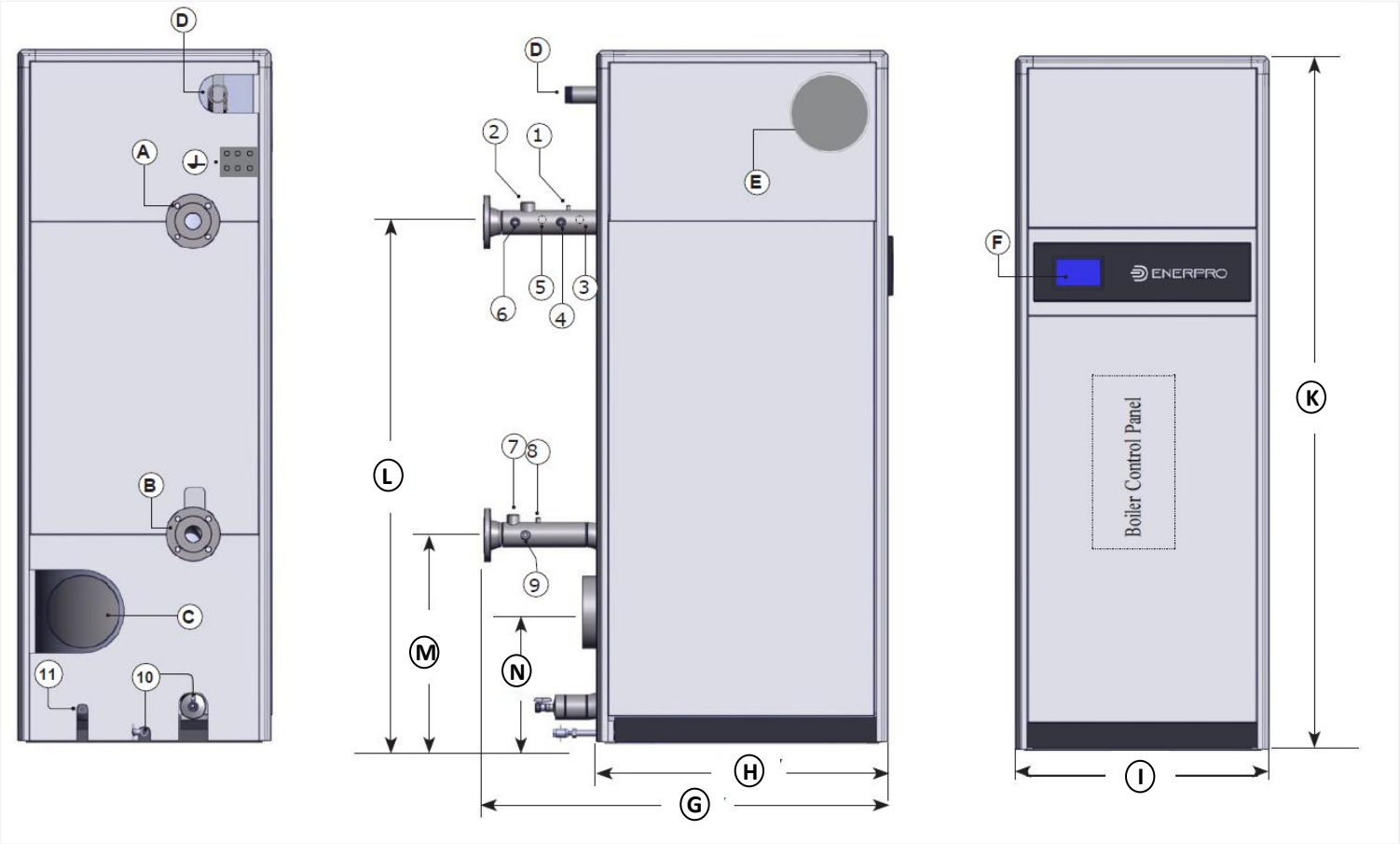


EPAW Domestic Hot Water Heater Recovery rate

Rate in gallons per hour (GPH) at which hot water at the indicated ΔT (°F) temperature is produced.

Model	40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
EPAW 1050	3000	2625	2250	2175	1500	1350	1200	1050	900
EPAW 1600	4800	4200	3600	3000	2400	2160	1920	1680	1440
EPAW 2080	5940	5197	6455	3940	2970	2670	2370	2070	1770

Physical Dimensions
ENERPRO EPA / EPAW Series 1050-1600-2080



REF	Description	EPA1050	EPA1600	EPA2080
A	Water Outlet (#150 ANSI Flange)	2 ½”	2 ½”	3”
B	Water Inlet (#150 ANSI Flange)	2 ½”	2 ½”	3”
C	Vent Exhaust Connection	6”	8”	10”
D	Gas connection (NPT Male)	1”	1 ½”	2”
E	Combustion Air Inlet	6”	8”	10”
F	Sola Touch Screen	7”	7”	7”
G	Boiler overall Depth	51 ½”	55”	55”

REF	Description	EPA1050	EPA1600	EPA2080
H	Boiler Depth	36 ½”	40”	40”
I	Boiler Width	32”	35”	35”
J	Electrical Inlet Knockouts(6)	1”	1”	1”
K	Boiler Height	79”	88”	95”
L	Water Outlet Height	66”	69”	73”
M	Water Return Height	23”	28”	30”
N	Vent Connection Height	15”	16”	17”

REF	Description	EPA1050	EPA1600	EPA2080
1	Air Vent connection	1/8”	1/8”	1/8”
2	Safety Valve connection	1”	1”	1 ¼”
3	NTC Temperature sensor (supply)	1/2”	1/2”	1/2”
4	Low water cut-off	3/4”	3/4”	3/4”
5	Aquastat Limit (Manual reset)	1/2”	1/2”	1/2”

REF	Description	EPA1050	EPA1600	EPA2080
6	Temperature/pressure gauge	1/2”	1/2”	1/2”
7	Flow Switch connection	1”	1”	1”
8	Air Vent Connection	1/8”	1/8”	1/8”
9	NTC Temperature sensor (return)	1/2”	1/2”	1/2”
10	Boiler drains hose bib connection	3/4”	3/4”	3/4”
11	Condensate Drain Connection	1 ¼”	1 ¼”	1 ¼”

Technical Specifications

ENERPRO EPA / EPAW Series 1050-1600-2080MBH

EPA/EPAW Model		1050	1600	2080
Performance Data	**unit**			
Maximum gas input	MBH (kw)	1050(308)	1600(469)	2080(610)
Minimum gas input	MBH (kw)	105(31)	160(47)	208(61)
Rated heat output AHRI at 100°F return	MBH (kw)	992(291)	1512(443)	1966(576)
Minimum Heat Output	MBH (kw)	99(29)	151(44)	196(57)
Gross output at 104°F supply / 86 °return (40°C /30°C)	MBH (kw)	1014(297)	1544(452)	2007(588)
Gross output at 176°F supply / 140 °return (80°C /60°C)	MBH (kw)	924(270.8)	1408(412)	1830(536)
Boiler horsepower	H.P.	30.4	46.3	60.2
Natural gas rated combustion efficiency 100°F return	%	94.5	94.5	94.5
Natural gas rated thermal efficiency(net) 100°F return	%	94.2	94.2	94.2
Firing sequence - turndown ratio	Full modulation - 10:1			
General Data				
Boiler category	Condensing			
Heat exchanger construction	Stainless Steel/Titanium 316 Ti / Stainless steel 316L			
Heating surface area water side	$ft^2(m^2)$	134.55(12.53)	222.55(20.74)	258.4(24.10)
Maximum allowable working pressure MAWP	PSIG (Bar)	160(11)		
Water content	Us. Gallons(Liters)	51(194)	66(248)	77(290)
Boiler operating control	Honeywell Sola R910A			
Touch screen	Honeywell 7" S7999D1006			
Weight dry	Lbs.(kg)	1240(564)	1750(795)	1980(900)
Shipping weight	Lbs.(kg)	1340(609)	1850(840)	2080(945)
Operating weight	Lbs.(kg)	1663(756)	2298(1045)	2619(1190)
Operational Data				
Water Pressure drop at 20°F ΔT	FT. H_20 (mbar)	8.7(260)	13.4(400)	15.5(463)
Water Pressure drop at 30°F ΔT	FT. H_20 (mbar)	4.0(119.5)	9.1(271.9)	7.25(216.6)
Water Pressure drop at 40°F ΔT	FT. H_20 (mbar)	3.25(97)	5.75(171.8)	4.35(129.98)
Nominal flow rate 20°F ΔT	GPM (l/s)	105(6.6)	160(10.1)	208(13.15)
Nominal flow rate 30°F ΔT	GPM (l/s)	78.75(5.0)	120(7.58	156(9.86)
Nominal flow rate 40°F ΔT	GPM (l/s)	52.5(3.33)	80(5.05)	104(6.58)
Maximum flow rate	GPM (l/s)	121(7.65)	185(11.6)	240(15.16)
Minimum flow rate at ignition	GPM (l/s)	24(1.52)	40(2.53)	55(3.48)
Maximum supply temperature at 22 PSI minimum	°F (°C)	200(95)		
Normal operating temperature range	°F (°C)	40(4.5)-194(90)		
Maximum pressure loss in vent (sealed combustion)	Inch W.C.(mbar)	+0.20(0.5)		
Maximum pressure loss (combustion air duct)	Inch W.C.(mbar)	-0.22(0.55)		
Vent / Gas Connections sizes				
Flue gas vent diameter	Inches(mm)	6"	8"	10"
Combustion air inlet diameter	Inches(mm)	6"	8"	10"
Required combustion air CSA B-149- Forced draft	CFM(l/s)	167(78.8)	254(119.8)	331(156)
Gas inlet diameter	Inches(mm)	1"(25)	1 ¼'' (31.75)	2"(50.8)
Gas inlet pressure range	Inch W.C.(mbar)	3.5-14"(8.8-34.9)		
Gas inlet pressure range	psi	0.13-0.51		
Venting category	II, IV			
Venting material	Approved UL 1978/ULC 636 - AL-294C, Polypropylene, CPVC			
Electrical data				
Electrical main supply	V/P/H	120/1/60- 15A Maximum		
Power consumption	Watts	1200	956	956
IP-IEC NEMA protection	Rating	IP20 – NEMA Type I		

Accessories and Optional equipment

☐ **Combustion air filter**	Installed on Absolute model air inlet to protect from dust and other particles.	
☐ **BACnet Gateway**	Modbus RTU to BACnet Gateway. Supports BACnet/IP, BACnet MS/TP, LonWorks, and Johnson Controls Metasys N2 systems.	
☐ **Outdoor Sensor**	Senses outdoor temperature for reset curve adjustment.	
☐ **DWH Sensor with well**	Sensor for Domestic Hot Water supply from the boiler to a buffer tank or indirect water heater.	

☐ **Local/Remote switch**	Easy selection from locally controlled boiler to the BMS remotely controlled system.	
☐ **Condensate Neutralizing Kit**	Controls condensate PH from the boiler and the vent before it is directed to the floor drain.	
☐ **Automatic reset LWCO**	Automatically completes the circuit when water level is normal	
☐ **Stack Sensor with well included with boiler**	Sensor monitors stack temperature and allows quick diagnosis for maintenance or service	

About Enerpro

Enerpro boilers are built by 3I Innovative Industrial Inc.

Located in the proximity of Toronto, Ontario, 3I Innovative Industrial Inc. is the manufacturer of Enerpro and Absolute boilers and water heaters. 3I is a market leader and major producer of heat transfer equipment. Our boilers and water heaters are installed in commercial, institutional and industrial building applications such as offices, schools, apartment complexes, hotels, hospitals as well as dairy and food and beverage applications. Our experienced and creative team of specialists cumulate many years of experience in boiler and water heater design.

Our vast network of authorized representatives across North America will provide you with professional advice, engineered solutions, sales, product support and customer service.

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Please consult your local sales representative for details.

www.enerproboilers.com