SmartPlate EV

Water Heaters

AERCO®
A WATTS Brand

Domestic Water Heating has Evolved

AERCO revolutionized the concept of brazed plate potable water heating with the original SmartPlate line of water heaters. The newly evolved line of SmartPlate EV water heaters are specifically engineered to complement today's condensing boilers in low temperature applications to promote system-wide energy efficiency.

And unlike competitive products, SmartPlate EV heaters incorporate special features and ancillary components that set a new standard for fully packaged, turn-key solutions. Easily installed in any combination space/DHW heating system, you can count on SmartPlate EV heaters to maintain accurate temperature control under diversified loads without the need for storage tanks.

Key Features

- Ultra Sleek design with a tiny footprint (32 x 24 in; <6 ft^2)
- Top mounted connections minimize installed footprint
- 1100 - 4500 MBH (five sizes)
- Tight temperature control ±4°F
- Full communication and integration with Benchmark boilers
- Boiler Bypass maximizes energy efficiency when installed with Benchmark boilers
- Advanced electronic controls
- Integrated safety shut-off system
- Easy to install and maintain
- Long-lasting durability
- Fully packaged solution ships fully assembled
- Supports 2-way and 3-way applications
- Double-wall configuration
- Up to 300 PSIG DHW operation and 190°F boiler water

An Advanced Approach to Water-to-Water Heating

Designed to Maximize System Efficiency

SmartPlate EV heaters incorporate a stainless steel, brazed plate double wall sytle heat exchanger, widely known as an extremely efficient heat exchanger, in a counter flow design. As a result, SmartPlate EV heaters can utilize boiler water as little as 5°F above the desired DHW temperature. They are ideal for use in low temperature systems.

- Eliminate waste associated with overheating DHW and then “mixing down” to safe temperatures
- Low supply water temperatures maximize boiler plant efficiency
- Pair with condensing boilers to further increase fuel savings
- Minimize radiant losses throughout the system
- A lower system set point produces far less scale for increased thermal efficiency, reduced maintenance and a longer heater life
- Minimize over temperature conditions and potential for scalding

Double-Wall, Brazed Plate Heat Exchanger

Precise Temperature Control

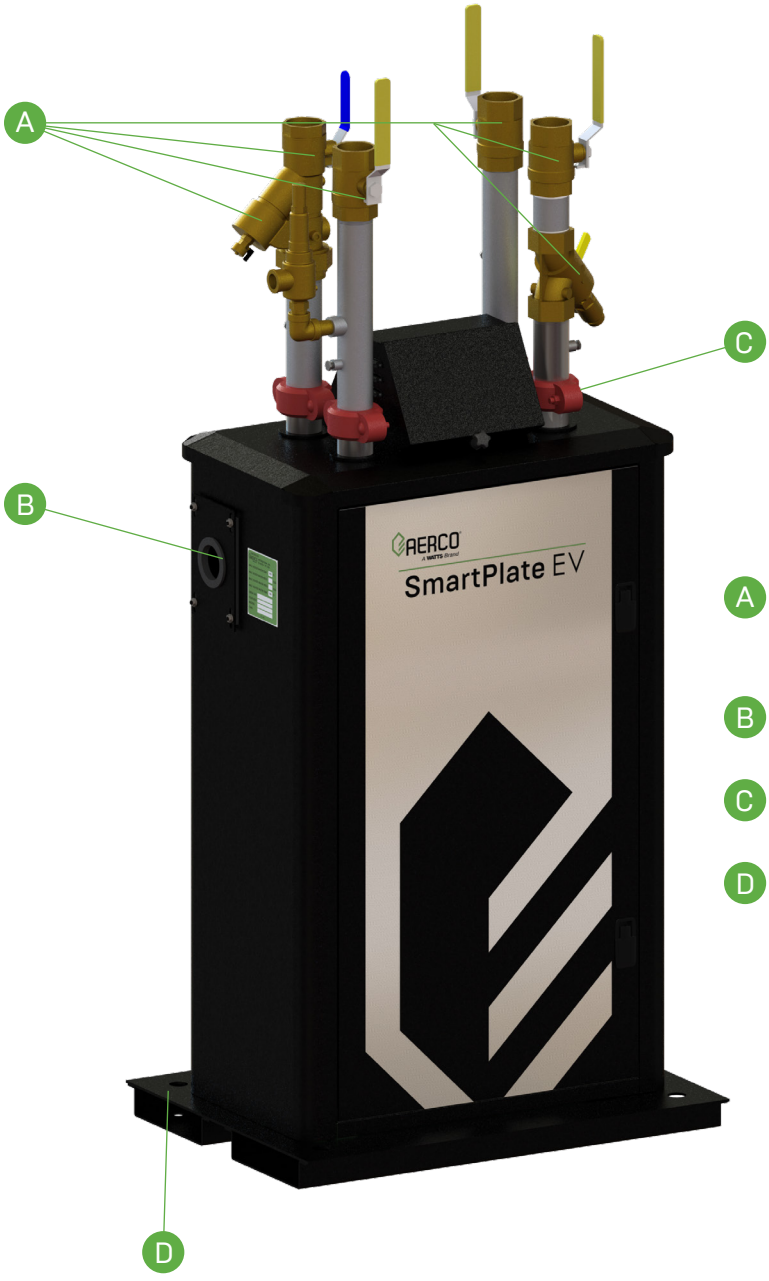
Sensors located at the potable water inlet and outlet provide feed forward and feedback temperature signals to SmartPlate EV’s PID controller and fast acting electronic control valve to deliver accurate temperature control under diversified loads without storage tanks or blending valves.

- ±4°F under normal load changes
- Integrated “fail safe” safety shut-off system
- No blending/mixing valves or storage tanks required

AERCO’s state-of-the-art electronic controller can be remotely monitored and/or fully integrated with BAS software via Modbus communications protocol to control and/or poll important operating parameters of the heater including operating set point, outlet temperature, peak temperature, average temperature, low temperature and more. Operating parameters for the heater are entered directly to the digital controller – just “set and go.” Importantly, SmartPlate EV heaters incorporate a safety shut-off system that operates independently of the unit controller in the event of an over-temperature condition or power loss at the facility. Additionally, the controller offers direct 2-way communication with AERCO Benchmark boilers for optimal control and communication, an AERCO exclusive feature.

Fully Packaged to Simplify Installation and Maintenance

Designed to be a truly turn-key solution, AERCO has packaged each SmartPlate EV heater with a host of ancillary components and special features you just won't find in other water heaters on the market. Despite a modest <6 ft^2 footprint, each heater includes a control panel and sensors, three-way electronic control valve, potable water side clean out connections, as well as shut-off valves and inlet strainers on both the boiler water and DHW sides to simplify maintenance for the life of the equipment. And to ensure longevity, all water wetted parts are stainless steel, copper or copper alloy materials. Simple to install, each unit ships fully assembled on a uniquely designed, easy-to-move base with single point header connections for domestic hot water, cold water, boiler water inlet, boiler water outlet and electrical power supply. Units can be applied in 2-way or 3-way operation.



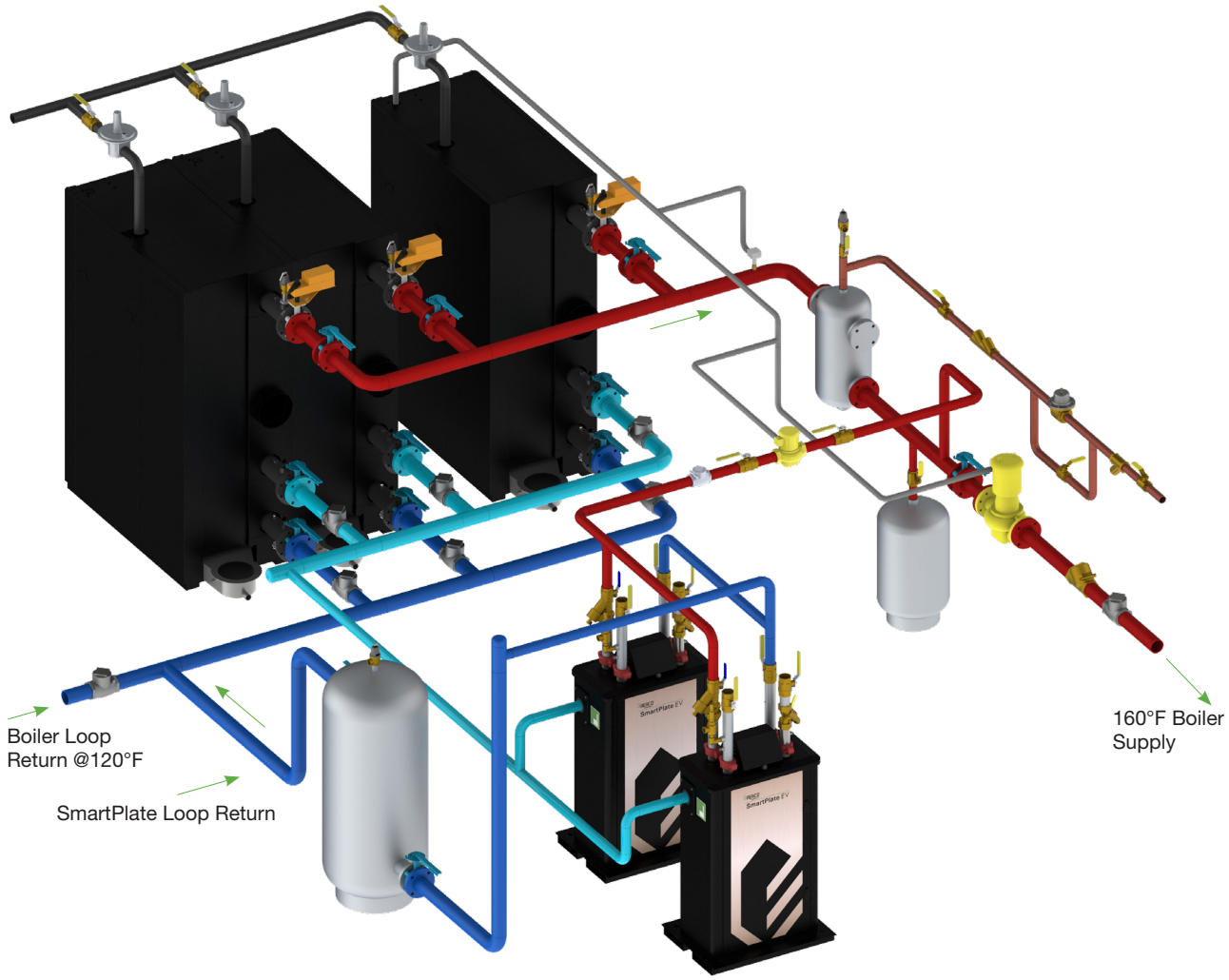
- **A** Shut-off Valves and Inlet Strainers with Integral blow-down Valve for easy maintenance of both the boiler water and DHW sides of the unit
- **B** Switch to 2-Way Operation by keeping the Boiler Bypass port on the 3-way control valve capped
- **C** Hx Disconnect Fittings make removal of the heat exchanger fast and easy
- **D** Easy-Lift Base can be moved with pallet jack or forklift

Specifications

	SmartPlate EV Brazed Plate Double Wall
Domestic Water Pressure Drop	7 PSIG @ max. rated flow
Ambient Operating Temperature	23°F to 122°F
Electrical Requirements	120/1/60 Hz 2 Amp, 220/1/50 Hz 2 Amp
Standby Amperage Draw	2 Amp
High Limit “Tripped” Amperage Draw	2 Amp
Max. Continuous Water Flow Rate	90 GPM
Max. Boiler Water Pressure & Temperature	150 PSIG @ 190°F or 300 PSIG @ 190°F
Max. Domestic Water Operating Pressure	150 or 300 PSIG
Adjustable Temperature Control	up to 180°F
Adjustable High Limit Control	up to 200°F
Water Connection Inlets/Outlets	2" FNPT
Weight (lbs.)	SPDW-EV30 430 (dry), 435 (installed), SPDW-EV40 440 (dry), 445 (installed), SPDW-EV60 455 (dry), 470 (installed), SPDW-EV90 485 (dry), 500 (installed), SPDW-EV140 525 (dry), 550 (installed)

Optimize Your Combination Plant with Benchmark

The indirect SmartPlate EV water heater is a great solution for architects and installing contractors because there are no storage tanks, vent lines or gas lines to install, and it has an incredibly compact footprint (<6 ft^2), necessary for a cramped mechanical room. Each unit can provide up to 90 gpm of domestic hot water while increasing the overall efficiency of the boiler plant. A typical condensing, 20°F rise boiler plant with 180°F supply temperature operating at full fire will see an efficiency gain by using the Benchmark's dual returns to separate the high temperature and low temperature applications.

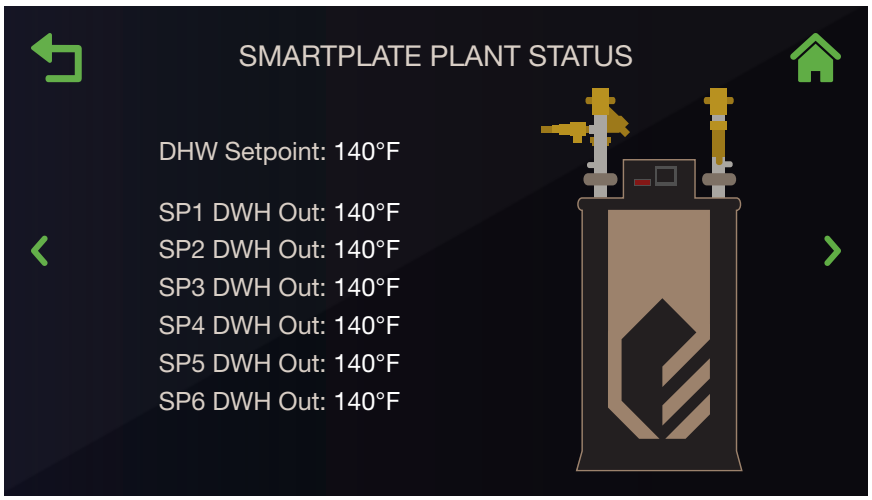


SmartPlate EV Status on Edge Controller

When paired with Benchmark boilers, the SmartPlate EV provides a world-class combination plant solution. The SmartPlate EV's bypass line can be piped to the upper inlet of a Benchmark boiler, ensuring only water cooled in the SmartPlate's heat exchanger goes to the lower inlet. This allows the combustion gases to be cooled even further and can increase boiler efficiency by as much as 6%!

Benchmark boilers include easily configurable controls for combination plants with or without swing boilers and valves. Swing valves act as a physical barrier between space heating and domestic water boiler loops, allowing a unique boiler water temperatures for each application. Piped in between a pair of swing valves, a swing boiler can switch between space heating and domestic hot water applications, providing redundancy to both plants.

The Benchmark Edge Controller can display SmartPlate EV's status and send the information to a BACnet or MODBUS BAS system without the use of a gateway.



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Heating and Hot Water Solutions

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