



MODEL SW1A+

TECHNICAL DATA SHEET

A-PLUS STEAM FIRED COMMERCIAL WATER HEATER

The AERCO SW1A+ water heater is designed to satisfy potable water heating needs in commercial and institutional environments. The packaged system incorporates real-time, load tracking and responsive controls to maintain accurate hot water temperatures under diversified loads. And AERCO's unique heat exchanger design increases operating efficiency, simplifies maintenance and promotes long life.

Packaged with either electronic or pneumatic controls, the heater maintains outstanding temperature control when operated under constant load conditions with variances held to $\pm 4^{\circ}\text{F}$ under normal load changes. An integrated load monitoring system and high-turndown steam control valve deliver accurate temperature control without the need for storage tanks, blending valves or other temperature averaging components. When packaged with the electronic control system, the heater can be remotely monitored and/or fully integrated with BAS software.

A parallel stack of helically wound coils form a cross counter-flow heat exchanger – one of the most efficient designs available for domestic water heating. This sub-cooling design eliminates wasteful flash losses because all Latent Heat, and much of the Heat of the Liquid, is transferred from the steam. Condensate outlet temperatures of $\leq 190^{\circ}\text{F}$ can be expected. A simple union orifice eliminates the need for a trap.

The baffle-free, flexible coils of the heat exchanger continuously expand and contract with changing water and steam temperatures. The self-descaling nature of this automatic action eliminates the need for periodic, acid cleaning or tube scraping. The free floating design eliminates stress so effectively that, where water quality is especially harsh, the SW1A+ can be quickly and easily "thermal shocked" as part of a routine maintenance plan. All water wetted parts are copper or copper alloy materials – the best choice of materials to further ensure longevity.

The unit's semi-instantaneous design (steam in tubes and water in shell) is compatible with low or high steam pressures. Installation is easy because the small footprint (2 ft²) fits through a standard doorway. Tight temperature control, high thermal efficiency, low maintenance, longevity and overall reliability make the AERCO A-Plus the most logical choice for any commercial or institutional water heating installation.



SW1A+ FEATURES

- Accurate Temperature Control $\pm 4^{\circ}\text{F}$
- Choice of Electronic or Pneumatic Controls
- Compact Foot Print $\leq 2\text{ ft}^2$
- Automatic Self-Descaling
- Automatic Condensate Subcooling
- Fully Modulating Variable Steam Input
- No Trap or Storage Tanks Required
- Low Surface Temperature
- ASME- B&PV Code Sec. VIII, Div. 1 Stamped
- All Copper or Copper Alloy Wetted Surfaces
- 10-Year Warranty on Complete Hx*
- 20-Year Warranty on Pressure Vessel and Integral Demand Anticipator*
- Supports a Variety of Applications
 - 5 to 150 PSIG Steam Supply
 - Intermittent Water Flow Rates Up to 115 GPM
 - Set Point Range 50°F to 205°F
 - 160 PSIG ASME Working Pressure Certified
 - Single or Multiple Installation
 - Ideal for New or Retrofit

*Consult AERCO website or Engineering Manual for complete warranty details.

DIMENSIONS

MODEL SW1A+ [] / [] / EC
 (# COILS) (VALVE SIZE)

HEATER MODEL	NO OF COILS	HEATING SURFACE SQ. FT. (SQ. M.)	DIM. IN. (CM)		WT. LBS. (KG.)	
			"A"	"B"	DRY	WET
SW1A+01	1	5 (0.6)	45.75 (116.21)	32.00 (81.28)	370 (167)	441 (200)
SW1A+02	2	10 (0.93)	45.75 (116.21)	32.00 (81.28)	380 (172)	447 (202)
SW1A+03	3	15 (1.39)	54.75 (139.07)	36.36 (92.41)	400 (181)	483 (219)
SW1A+04	4	20 (1.85)	63.75 (161.93)	40.50 (102.87)	430 (195)	530 (240)
SW1A+05	5	25 (2.32)	73.75 (187.33)	44.50 (113.03)	460 (208)	577 (261)

CONTROL VALVE SIZE		DIM. "C" IN. (CM)
LINE PRESSURE	PSIG (kPa)	
1" (2.54) SCREWED END		25 (63.50)
1-1/4" (3.18) SCREWED END		25 (63.50)
1-1/2" (3.81) SCREWED END		25 (63.50)
2" (5.08) SCREWED END		25 (63.50)
2-1/2" (6.35) 150# ANSI FLC'D END		28.5 (72.39)

	HEAT EXCHANGER DESIGN STANDARDS		
	MAX. WORKING PRESS. PSIG (kPa)	MAX. TEMP. °F (°C)	TEST PRESS. PSIG (kPa)
SHELL SIDE	160 (1103)	250 (121)	240 (1655)
TUBE SIDE	250 (1723)	400 (204)	375 (2584)

ASME B&PV CODE SEC. VIII, DIV. 1 STAMP U

RELIEF VALVES SET AT °F, PSI

	MATERIALS OF CONSTRUCTION	
	SHELL	COILS
SHELL	3/16" (0.48) CARBON STEEL, SA285	COPPER, 0.049" (0.12) WALL, SB-111
LINER	COPPER, ASTM B-152, 0243 THK	ALLOY 122, LIGHT DRAWN
HEADS	BRONZE, SB-62	RED BRASS, SB-43

	OPERATING CONDITIONS	
	CAPACITY, GPM (L/S)	IN/OUT TEMP. °F (°C)
SHELL		
TUBES		

RELIEF VALVES SET AT °F, PSI

DIMENSIONS ARE SHOWN IN INCHES (CENTIMETERS)

SW1A+ SPECIFICATIONS

w/ Electronic Controls

w/ Pneumatic Controls

Shell Side Pressure Drop	4PSIG @ max. rated flow	4PSIG @ max. rated flow
Ambient Operating Temperature	0°F to 131°F	0°F to 131°F
Electrical Requirements	120/1/60 1 Amp	120/1/60 1 Amp
	220/1/50 1 Amp	
Standby Amperage Draw	1 Amp	0.1 Amp
High Limit "Tripped" Amperage Draw	1.5 Amp	0.5 Amp
Max. Continuous Water Flow Rate	55 GPM	55 GPM
Max. Intermittent Flow Rate	115 GPM	115 GPM
Max. Steam Supply Pressure	150 PSIG	150 PSIG
Max. Shell Side Operating Pressure	150 PSIG*	150 PSIG*
Adjustable Temperature Control	up to 205°F	up to 230°F
Adjustable High Limit Control	up to 250°F	up to 250°F
Water Connection Outlet	2" FNPT	3" FNPT
Water Connection Inlet	2" FNPT	2" FNPT
Air Consumption	N/A	0.10 scfm@25PSIG
Air Supply Min. Requirements	N/A	25 PSIG
Air Supply Max. Requirements	N/A	30 PSIG

* Standard 150 PSIG, 210°F P&T relief valve supplied; consult AERCO representative for higher settings.

AVAILABLE OPTIONS

- 0.065" thick copper or copper-nickel tubing for increased corrosion resistance
- Dry contacts for remote "High Limit Tipped Status" indication
- Pressure gradient monitoring system can be provided in lieu of double wall construction where codes allow

Specifications are subject to change. Consult website or contact AERCO



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