

Heat Miser

Instantaneous Steam to Water Heaters

for Domestic and Process Water Heating Applications



Steam to
Water Heater



The Heat Miser is an Instantaneous Steam to Water Heater which produces hot water from steam. The Watson McDaniel fully-assembled Heat Miser eliminates the need for large hot water storage tanks and saves significant energy which is required for large standing tanks of hot water.

Common Applications: Hospitals, Schools & Universities, Hotels, Process Washdown Stations, Residential Apartment Buildings or any other facility with an existing steam boiler.

Old Hot Water System Negatives

- Takes up excessive floor space
- Stagnating hot water
- Danger of Legionella Growth
- Corrosion of tanks
- Significant radiant heat loss

New Heat Miser System

- Small footprint (typical floor space of 14ft²)
- Efficient plate & frame heat exchanger maximizes turbulent flow for instantaneous hot water on demand
- Stainless Steel waterside components
- Simple maintenance and reduced overall costs

System Benefits

- Meets the rigorous demands of domestic water heating
- Accommodates extreme load fluctuations without the need or storage tanks
- Accurate control of outlet water temperature for many systems to +/- 2°F, and +/- 8°F for wide and sudden load fluctuations
- High-efficiency Plate & Frame Heat Exchanger optimized for use with low pressure steam and offers typical flow rates up to 300 GPM, with higher flow rate designs available
- Integral Control Panel included for ease of operation and system feedback
- Electric and Pneumatic Control Valves available for precise steam control
- Excellent for washdown stations

The Watson McDaniel Difference

- ASME qualified welders and certifications
- ASME U and UM Stamp availability on appropriate components
- Complete assembly and pressure testing prior to shipment
- Better control of design, cost and quality by avoiding 3rd party fabricators
- Unparalleled turn-around and deliveries with many units available for shipment within days

Standard Auxiliary Items

- Steam and Condensate Inlet Y-Strainers
- Stainless Steel Recirculation Pump
- Over-temperature Protection – Solenoid-actuated Cold Water Injection
- Steam Inlet Pressure Gauge
- Stainless Steel RTD Electronic Temperature Sensor
- Stainless Steel Waterside Piping with Safety Valve



Heat Exchanger

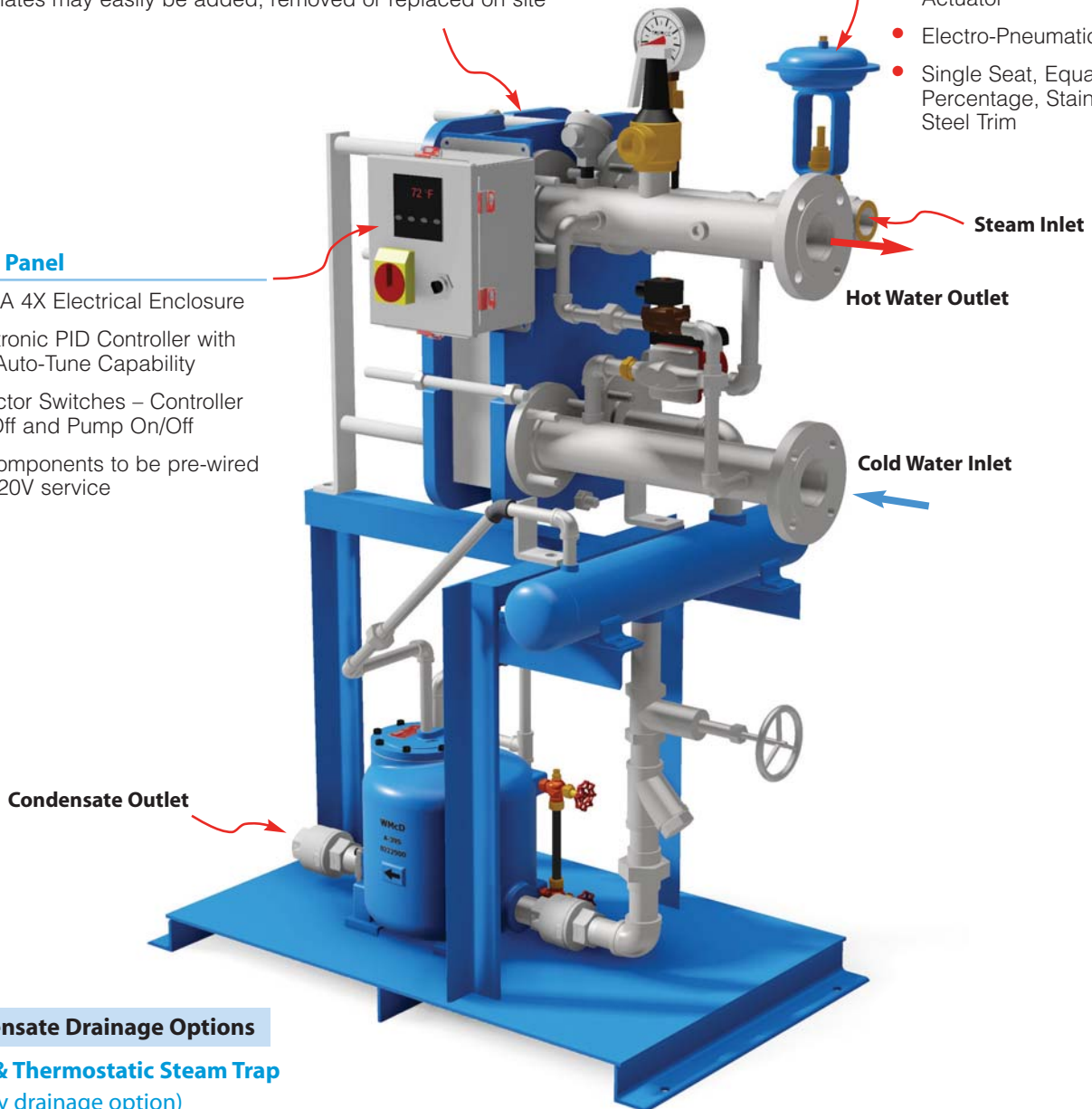
- High-efficiency Plate & Frame Counterflow Type
- Single or Double Wall 316 Stainless Steel Plates
- Steam-rated EPDM gaskets
- Plates may easily be added, removed or replaced on site

Control Valve

- Cast Iron, Bronze or Steel Globe Body
- Fail Closed Pneumatic Actuator
- Electro-Pneumatic Positioner
- Single Seat, Equal Percentage, Stainless Steel Trim

Control Panel

- NEMA 4X Electrical Enclosure
- Electronic PID Controller with Full Auto-Tune Capability
- Selector Switches – Controller On/Off and Pump On/Off
- All components to be pre-wired for 120V service



Condensate Drainage Options

Float & Thermostatic Steam Trap (gravity drainage option)

- All Stainless Steel Internals
- Body Material options include Ductile Iron, Carbon Steel and Stainless Steel

Pump-Trap Combination (pumped drainage option)

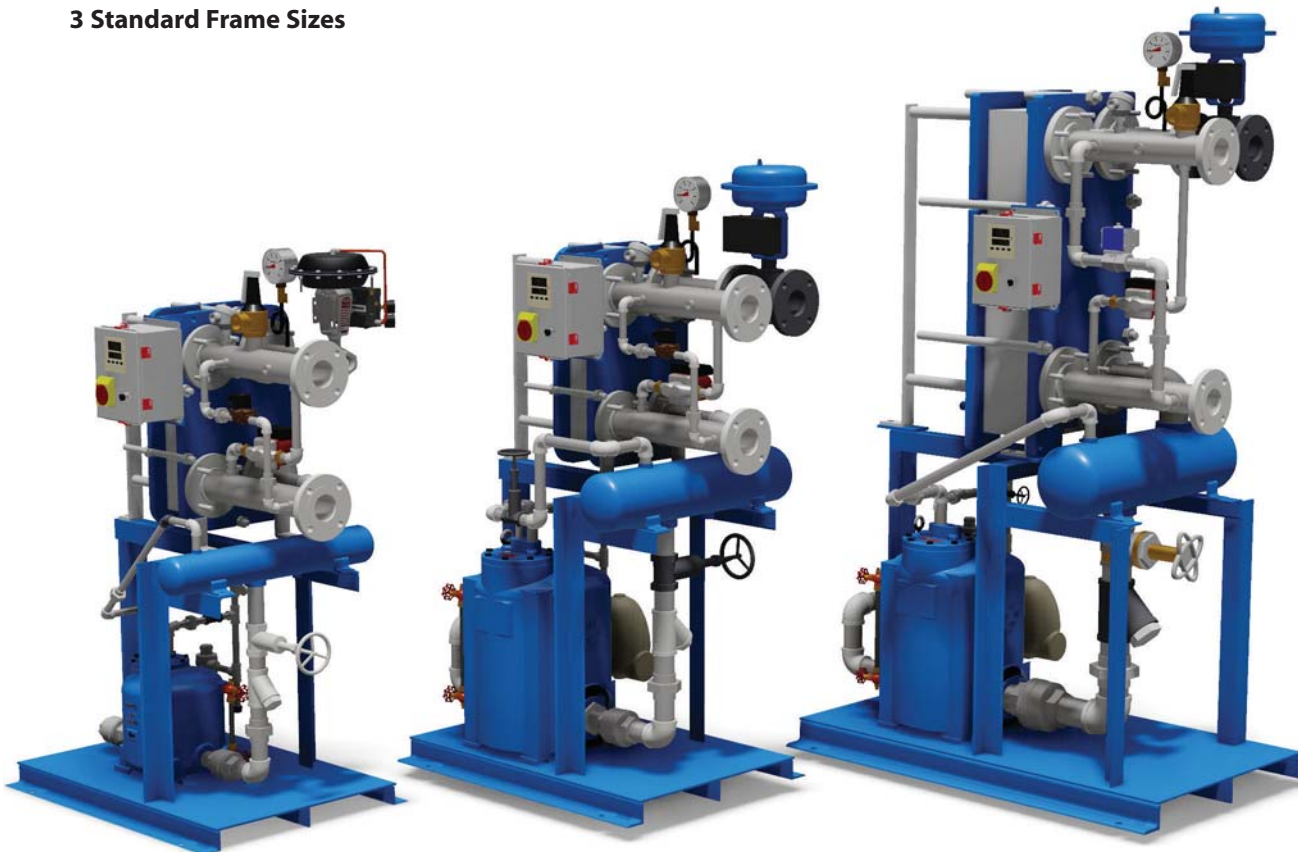
- Patented Snap-Assure mechanism with stainless steel wear parts
- Ductile Iron Tank
- Gauge Glass
- Motive PRV, Drip Trap, and Motive and Vent Piping

Common Optional Items

- High-limit Steam Isolation Package including dedicated sensor and actuated ball valve
- HDP Pressure Reducing Valve for reducing inlet steam supply pressure to the control valve

Watson McDaniel offers five standard packages, or you can customize your own Heat Miser.

3 Standard Frame Sizes



1P

2P

3P

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Model	WATER		STEAM			Footprint Dimensions (in)		
	Inlet & Outlet	GPM	Steam Inlet	Condensate Outlet	Steam Load (lbs/hr) @ 100°F Temp Rise	Length	Width	Height
1P10	3"	20	1 1/2"	1 1/2"	1,030	46	30	67
1P20	3"	40	2"	1 1/2"	2,061	46	30	67
2P28	3"	60	2 1/2"	2"	3,091	46	30	73
3P20	3"	80	3"	2"	4,122	54	34	92
3P28	3"	100	3"	2"	5,152	54	34	92