



Whole House Tankless Residential Electric Water Heater

5-, 7-, 9-, 11-, 14-, 18-, 22-, 28-, 32-KW Models

10-Year Limited Warranty* Chamber and Parts

Features & Benefits

High Efficiency Compact Design Provides Endless Hot Water-Residential models provide endless hot water while operating within their designed gallons per minute range, immediately heating water when a hot water outlet is opened. Seisco models install inside closets, or on almost any wall. Water is only heated on demand, virtually eliminating standby heat loss and providing over 99% efficiency.

Microprocessor Control-On-board computer logic controls temperature through a modified proportional, integral, derivative (PID) control scheme. The control also provides self-diagnostics, alerts the homeowner in case of a water leak inside the heater, incorporates optional off-peak metering capabilities for local utilities, and intelligently controls power distribution to the heating elements while continuously monitoring critical functions in order to shut down the water heater if a failure occurs.

PowerShare™ Technology-Patented power distribution control technology utilizes computer algorithms and electronic triacs with patented cooling technology to pulse power on and off to all heating elements resulting in uniform temperature modulation between 1-100% of the element's range. PowerShare along with constantly flowing water across heating elements ensure that heating elements operate at the lowest possible temperature. When the elements are turned off, low sheath temperature prevents boiling minerals out of the water causing buildup on the heating elements, prolonging element life. PowerShare also eliminates electrical disturbances in the home from the water heater, such as flickering lights.

Thermistor Temperature Sensing-Five thermistors continuously monitor inlet/outlet water temperature and the water temperature in each heating element chamber. Outlet water temperature is factory set to 120°F and is field adjustable between 90-130°F. In addition, water flow is sensed using the same thermistors, eliminating the need for troublesome flow switches.



Two & Four Chamber Models Shown

Heating Elements-Industry standard 1 1/2" hex head, direct immersion, heating elements utilize PowerShare technology to help eliminate scale build-up and prolong element life far beyond that of tank type water heaters. If an element fails, a replacement can be purchased from virtually any plumbing distributor.

Redundant Safety Features-Two water level sensors are located at the top of the water heater's chambers to prevent powering on the heating elements if sufficient water is not detected inside the water heater. In addition, two safety cutoff switches, one manual and one automatic reset, shut down power to the heating elements should an unsafe condition occur.

Built-in Leak Detector and Alarm-A switch located inside the water heater's cover along the bottom of the mounting plate activates an alarm when contacted by water.

Code Approvals-UL/CUL 499/64, HUD Mobile Home, ISRAEL, NOM, and NEC. Hydrostatically tested to 300 psi.



*Limited Warranty-See written warranty for details.

For Additional Features See Inside Page

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Endless Hot Water

Do You Know?

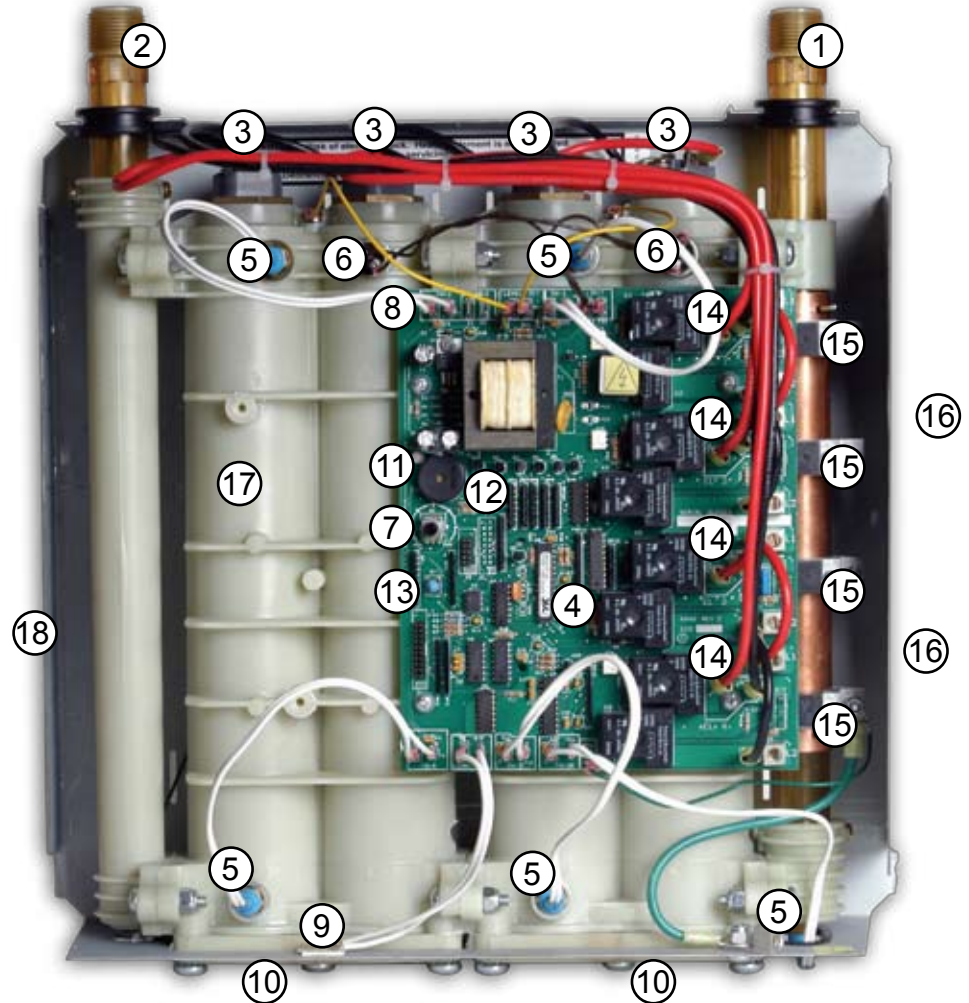
...a standard 40-gallon tank type electric water heater has a first hour rating of approximately 50-54 gallons at a 90°F rise...Seisco model RA-28 is rated at 127 gallons at a 90°F rise!

... independent data from an electric utility company shows that in a 127 unit senior living center with Seisco models in every unit, peak electrical KW usage per unit was less than 1KW!

... one RA-28 can provide more than enough unlimited hot water for a 2.5 gpm shower (103°F) with 40°F inlet temperature... or two showers with an inlet water temperature is 65°F... or three showers with an inlet water temperature of 85°F!

... Seisco models virtually eliminate standby heat loss and are over 99% efficient compared to industry standard 40-gallon electric water heaters rated at about 92%. A standard 40-gallon tank type electric water heater loses about 2% of its stored energy to the surrounding environment every hour!

... the average home wastes approximately 6,000 - 10,000 gallons of water every year waiting for hot water to reach the faucet! Seisco can help eliminate wasted water by being located closer to hot water outlets and through special control logic.



Four Chamber Design-Inside View

- | | | | |
|---|--------------------------------|----|----------------------------------|
| 1 | Cold Water Inlet | 10 | Cleanout Plates |
| 2 | Hot Water Outlet | 11 | LED Indicator Light |
| 3 | Heating Elements | 12 | Speaker |
| 4 | Microprocessor | 13 | Service Button |
| 5 | Thermistor Temperature Sensors | 14 | Power Lugs |
| 6 | Safety Cutoff Switches | 15 | Triacs |
| 7 | Temperature Control Knob | 16 | 3/4" Conduit Connections |
| 8 | Off Peak Control Connection | 17 | Non-Ferrous Water Passages |
| 9 | Water Leak Detector | 18 | Heavy Gauge Steel Mounting Panel |



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Additional Features & Benefits

Service Button/LED Light/Speaker-While on the phone with a Microtherm technician, the service agent pushes a blue service button in order to activate an audible diagnostic sequence. The service agent can also diagnose service issues by observing a LED that identifies service issues through a series of flashes.

Rust and Corrosion Resistant Engineering Composite

Material- All water passages are constructed of a high temperature resistant DuPont® resin. Grades of the same resin family, but with lower properties, are so strong that they are used as the "header" for automobile radiators. Ability to resist extreme temperature changes, far above those found inside Seisco models, and superior chemical resistance make DuPont's engineering composite material the ideal material for Seisco tankless electric water heaters.

Continuous Venting Design-As water is heated, dissolved gases are released. Tiny bypass air passages at the top of each water chamber allow air and dissolved gases to exit unnoticed through the hot water outlet as hot water is being used.

Optional Demand Side Management Utility Connection- Allows local utility connection for remotely controlling the water heater (specify this feature when ordering).

Cleanout Plates-Should sediment such as sand or silt from the water supply accumulate inside the heating element chambers, removable plates, sealed with reusable gaskets, allow access for cleaning without disconnecting wires, plumbing connections, the outside cover, or removing the heating module and control board.

3/4" Non-Ferrous Inlet/Outlet Connections-Factory installed 3/4" MNPT thermoplastic nipples allow easy plumbing connections and eliminate the need for dielectric fittings

Heavy Gauge Steel Mounting Panel-Modular water passages, the control board, and other components are assembled and then mounted to a heavy gauge steel back panel that includes four tabs with rubber feet for mounting the unit to the wall. A decorative plastic cover encloses all components.

3/4" Electrical Conduit Connection-Standard 3/4" electrical conduit connections allow fast wiring of the water heater.

Do You Know?

...with 55°F inlet water and 135°F stored water, a 50-gallon electric water heater can fill a 50-gallon jetted tub in 10 minutes, 2 hours later it can refill the tub...a Seisco RA-28 can fill the same tub in 13 minutes, and another one in the next 13 minutes, and another one in the next 13 minutes, etc, forever!

... residential peak demand for heating water occurs in the morning before commercial and industrial electricity usage pushes the electric utility's capacity limits!

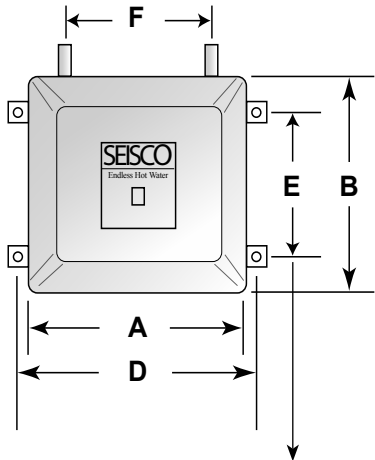
... standard tank type gas water heaters lose up to 5% of their energy every hour due to standby heat loss.

... the most common failure mode for tank type electric water heaters is heating element failure... Seisco's design prolongs the life of heating elements through the use of PowerShare™ technology, greatly reducing scale formation, the cause of virtually every failure in heating elements.

...the cost of professionally replacing a heating element in a tank type water heater can easily exceed \$150... Seisco reduces the cost of repairs by prolonging element life and eliminating a large tank to drain as part of the service call.

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Note: (E=13" on all models)

Model	RA-5	RA-7	RA-9	RA-11	RA-14	RA-18	RA-22	RA-28	RA-32
KW Input	5	7	9	11	14	18	22	28	32
BTU Input	17,065	23,891	30,717	37,543	47,782	61,434	75,086	95,564	109,216
A	10 1/4"	10 1/4"	10 1/4"	10 1/4"	10 1/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"
B	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"	15 3/4"
C*	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"	6 1/4"
D	10 7/8"	10 7/8"	10 7/8"	10 7/8"	10 7/8"	16 1/8"	16 1/8"	16 1/8"	16 1/8"
F	7"	7"	7"	7"	7"	12 1/2"	12 1/2"	12 1/2"	12 1/2"
Weight (lbs)	15	15	15	15	15	23	23	23	23
240 V. Amp.	20.8	29.2	37.5	45.8	58.3	75.0	91.7	116.7	133.3
# Elements	2	2	2	2	2	4	4	4	4
Element KW	2.5	3.5	4.5	5.5	7	4.5	5.5	7	8
# Breakers (240V)	1	1	1	1	2**	2	2	4***	4****
Breaker (amps)	25	30	40	50	30	40	50	30	40

*Depth: Not Shown On Drawing **Optional: 1-60 amp. breaker, ***Optional: 2-60 amp. breakers. ****Optional: 2-75 amp. breakers. All models are 99+% efficient.

Recovery (gpm & gph) @ Temperature Rise (F)

Model	Recovery	65	60	55	50	45	40	35	30	25	20	15
RA-5	gpm	0.53	0.56	0.62	0.68	0.76	0.85	.98	1.1	1.4	1.7	2.3
	gph	31.5	34.1	37.2	41.0	45.5	51.2	58.5	68.3	81.9	102.4	136.6
RA-7	gpm	0.74	0.81	0.88	1.0	1.1	1.2	1.4	1.6	1.9	2.4	3.2
	gph	44.1	47.8	52.1	57.4	63.7	71.7	81.9	95.6	114.7	143.4	191.2
RA-9	gpm	0.95	1.0	1.1	1.2	1.4	1.5	1.8	2.0	2.5	3.1	4.1
	gph	56.7	61.5	67.0	73.8	81.9	92.2	105.4	122.9	147.5	184.4	245.8
RA-11	gpm	1.2	1.3	1.4	1.5	1.7	1.9	2.1	2.5	3.0	3.8	5.0
	gph	69.3	75.1	81.9	90.1	100.2	112.7	128.8	150.2	180.3	225.3	300.5
RA-14	gpm	1.5	1.6	1.7	1.9	2.1	2.4	2.7	3.2	3.8	4.8	6.4
	gph	88.2	95.6	104.3	114.7	127.5	143.4	163.9	191.2	229.4	286.8	382.4
RA-18	gpm	1.9	2.0	2.2	2.5	2.7	3.1	3.5	4.1	4.9	6.1	8.2
	gph	113.5	122.9	134.1	147.5	163.9	184.4	210.7	245.8	295.0	368.8	491.7
RA-22	gpm	2.3	2.5	2.7	3.0	3.3	3.8	4.3	5.0	6.0	7.5	10.0
	gph	138.7	150.2	163.9	180.3	200.3	225.3	257.5	300.5	360.6	450.7	600.9
RA-28	gpm	2.9	3.2	3.5	3.8	4.2	4.8	5.5	6.4	7.6	9.6	12.7
	gph	176.5	191.2	208.6	229.4	254.9	286.8	327.8	382.4	458.9	573.6	764.8
RA-32	gpm	3.4	3.6	3.9	4.4	4.8	5.5	6.2	7.3	8.7	10.9	14.6
	gph	201.7	218.5	238.4	262.2	291.4	327.8	374.6	437.0	524.4	655.6	874.1

Suggested Written Specification

Residential electric water heater(s) shall be Seisco tankless water heater model _____ as manufactured by Microtherm, or an approved equal and shall have a 10-year limited warranty* when installed in a residential application. Heater(s) shall have a rated input of _____ KW at 240 Volts. Electrical control of the heater must be accomplished using an integrated microprocessor that employs a proportional/integral/derivative (PID) control scheme using thermistors for sensing temperature and flow. Heating elements must use PowerShare technology to simultaneously vary KW input across all heating elements from 1% to maximum input. Stepping individual elements on and off at full power is not acceptable. Flow switches that restrict the flow of water in any way are not acceptable. (Optional-Heater(s) shall include an electrical connection for off-peak control by local utility companies.) Heater(s) shall include dual water level sensors, high limit control via the microprocessor, and dual high limit cutoff switches, one manual and one automatic. Heater(s) shall have built-in self-diagnostics with an LED and speaker and must visually and audibly signal the status of all monitored functions. Heater(s) shall have a built-in water leak detector. All water passages must be constructed of a high temperature resistant DuPont® resin. Clean-cut access for removing sediment must be provided without removing plumbing connections or exposing electrical components of the water heater. Heater(s) must be UL/CUL 499/64, CSA, HUD Mobile Home, ISRAEL, NOM, and NEC approved.

*Limited Warranty-See written warranty for details.

Written specifications subject to change without notice.