



SEISCO SERVICE QUICK GUIDE

The Seisco control depends on the temperature information it receives from each of the temperature sensors to detect water flow and maintain proper temperature. If any sensor or its connection to the control board is bad, the unit may not turn on at all or if it does, the temperature may fluctuate. Whenever servicing a unit, the proper operation of the sensors and the control board should **always** be verified regardless of the trouble code as these two items are critical to the continued reliable operation of the unit and often can lead to misleading trouble codes including false high temperature and element codes. Seisco recommends you follow the pre-service checklist every time you service the unit to verify proper operation and avoid callbacks.

PRE-SERVICE CHECKLIST:

Verify Installation:

- Verify proper plumbing, cold to the inlet, hot to the outlet (Cold is on the right on Signature Models).
- Verify flow rate matches the specifications of the unit (especially at times when incoming water is colder than normal).
- Verify the heater is mounted correctly on the wall with the fittings of the heater on the top. (Fittings must point up on Signature models).
- Make a note of serial number in case you need to contact SEISCO Customer Service.

Tests with Power OFF:

- Verify water flow through the heater. Check that shut off valves are in the open position and that all air has been purged from the heating chamber(s).
- Check the plumbing and the heating chamber for any signs of leaks.
- Check for any loose wires to the control board and verify the power connections are tight. If stranded wire is used, check that all strands are inside the lug. Check high limit switch and reset as necessary (4CH Signature Models only).

Tests with Power ON:

- Verify circuit breaker(s) are turned on and labeled correctly (Signature models can have 2 to 4 breakers).
- Verify power to all circuits connected to the heater. Check the voltage across the lugs labeled L1 & L2 for each circuit.
- Finally, check the control board LED for any diagnostic codes. (Note: the control board will blink red and beep when breakers are turned on, then remain blinking green during normal operation)

HEATER TESTING – TEST WITH POWER OFF AND METER SET TO MEASURE RESISTANCE

COMPONENT	EXPECTED RESULTS
Temperature sensors	Readings should be taken after the heater has been cooled down so that the temperature in the chamber is uniform. Run hot water with power off for 5-10 minutes. All sensors should read approximately the same value and not vary more than 10% from each other.
High Limit Switch(es)	Should read zero ohms. If switch with manual reset shows open, press the red reset button and retest. If button feels loose its already set. (SIGNATURE MODELS ONLY)
Heating Elements	Read across screws at the Red & Black wires. Readings vary depending on wattage
Level Detect(s)	Each contact should read zero ohms to ground.
Moisture Detect Switch	Should normally read open. If closed, check for water leaks or water on the switch pad (mounted on the bottom of the base pan). Correct the leak, dry the switch and retest.

POWER ON TESTS

COMPONENT	TEST	EXPECTED RESULTS
Incoming Power Lugs	Voltage	L1 to L2: 208-277VAC (depending on model); L1 to Ground (Neutral for 120V models) 110-120VAC; L2 to Ground 110-120VAC.
Heating Element	AMPS	Measure AMPS on wires leading to each element. Typical readings vary depending on element size. (Max reading calculated as element WATTS/Voltage)
Heating Element	AMPS	With power on and faucet open at 50% rated flow, check amps at each element. Power should modulate and amp readings may fluctuate, but readings should be approximately the same across all elements. (Signature Models)



SEISCO SERVICE QUICK GUIDE

READING DIAGNOSTIC CODES: The LED status lamp located on the control board will flash a three-part sequence (two part for Flagship Models 1CH) of red flashes, each representing the individual digits of the code. After each sequence, the LED will flash green and then repeat the diagnostic code. THERE MAY BE MULTIPLE CODES SO VERIFY ALL SEQUENCES. Press the small blue mode button on the control board for two seconds, and the speaker will audibly beep the code as it flashes.

DIAGNOSTIC CODES

Signature Code	Flagship Code	Description	Action
111	12/14	TH-IN Sensor	Turn off all the power to the heater. Cool down the heater by running the water for about 5 minutes. Check the resistance measurement for all temperature sensors.
112	22	TH 1	
113		TH 2	
114		TH 3	
115		TH 4	
	13/16	THOUT (Flagship)	
117	14/16	Shorted Temp Sensor	Indicates sensor is shorted closed. Check wiring, replace as necessary
118	12/13	Open Temp sensor	Indicates sensor is open. Check wiring, replace as necessary
121	11	Disable Switch Open	Install jumper on SH/POU/SC boards (also some RA/CA service replacement boards)
122		High Limit Switches (Signature Only)	Turn off all power to the heater. Reset the switch by pushing in the button on the switch itself. Check the switch and brown wires for continuity. (Check Temperature sensors and run matching procedure before replacing Limit Switch)
123	21	Level Detect(s)	Check that the heater is filled with water and that there is no air trapped inside. Check operation of back flow preventer (or check-valve). If the heater is filled and there are no leaks, connect level detect spades on the board to ground (Signature only). If code is accompanied with a clicking sound that is present when water is running check the heating elements.
124	17	High Temperature Shutdown	The 124 code is triggered when the temperature of the water is more than 10 degrees higher than the set-point at the last sensor or THIN.
126	18	Moisture Detect	Immediately shut off all power to the heater. Check for water leaks. Completely dry control board before restoring power.
132		High Voltage	Voltages higher than 10% above the nominal rating should be corrected. Code will clear when voltage returns to nominal range.
133		Low Voltage	Low voltage may reduce heating capacity of the heater. Sustained voltages below 20% of the nominal rating may cause the heater to shut down. Code will clear when voltage returns to nominal range.
134	23	Element #1	Check elements. Check Temperature Sensors. Check Wiring and Breakers. Verify proper heater sizing, if necessary reduce unit temperature from maximum setting, and reduce flow rate with shut-off valve.
135		Element #2	
136		Element #3	
137		Element #4	
142	22,24, 25,31, 32,34, 35	Data Reading Error	The heater needs to be reset. Turn off all breakers to the heater for approx. 30 seconds. Turn on breakers, the LED should flash all green and heater should produce hot water. If the code remains, reset the breakers again. If code persists, test sensors and perform Matching Procedure (Signature Only). If the code does not clear, replace control board and/or sensors.

SENSOR MATCHING PROCEDURE (Signature Series Only)

- Turn off power and run hot water for 5 minutes or until cold. With water running:
- Unplug the brown wire at the limit switch above the left hand corner of the control board.
- Restore power to the unit it will beep four times, and then pause. You will then get one audible beep, a pause, two beeps, a pause, and two beeps.
- Press and hold the blue reset button for approximately 8-10 seconds, then release. You should hear a short, low tone buzz.
- Turn off power; Turn off the water; Reconnect the brown wire to the limit switch.
- Restore power to the unit. You will hear 4 beeps then listen for the unit to “click” (takes up to 45 seconds) then turn on the hot water at a sink and test for temperature and normal operation.