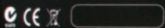




RATINGS INFORMATION

Supply Voltage	230-240V 50/60Hz
Output Voltage	230-240V 50/60Hz
Phase	Single / Two / Three
Max. Total Current	60A max
Max. Peak Phase Current	23A per phase
Heater Power Rating	6000W max
Heater Number	001-001
IP Rating	IP68
Safety Instructions	PROCESSES 1 / PROCESSES 2.60 HEATER/HEATERS 1 / HEATER/HEATERS 2.60



WARNING! DANGEROUS VOLTAGE INSIDE
This product must be installed and maintained by qualified service personnel

WARNING

- THIS APPLIANCE SHOULD BE SUPPLIED THROUGH A RESIDUAL CURRENT DEVICE (RCD) BREAKER & MUST BE INSTALLED IN A LOCATION NOT EXCEEDING 300MM
- SUITABLE FOR INDOOR USE ONLY OR WHEN INSTALLED UNDER A WEATHERPROOF CANOPY
- HEATER POWER MUST BE ISOLATED AND TURNED OFF BEFORE SERVICING APPLIANCE OR PERFORMING ANY CABLE CONNECTIONS
- TO PREVENT ELECTRIC SHOCK HAZARD AND/OR WATER DAMAGE TO THIS APPLIANCE, ALL WATERSHED RECEPTACLES MUST HAVE A WATER PROOF GASKET IN PLACE
- ANY DAMAGED CABLES ATTACHED TO THIS APPLIANCE MUST BE IMMEDIATELY REPLACED
- THIS APPLIANCE MUST NOT BE INSTALLED IN PROXIMITY TO HIGHLY FLAMMABLE MATERIALS



1. SET NUMBER OF PHASES FOR OPERATION

The default PHASE SET UP is 1-Phase. To set the number of phases, refer to the back of the heater (PHASE CONNECTIONS).

1. PRECAUTIONS TO TAKE BEFORE STARTING

1. Verify the heater is properly grounded.
2. Verify the heater is properly connected to the power source.
3. Verify the heater is properly connected to the water supply.
4. Verify the heater is properly connected to the control system.

TRUBLE SHOOTING GUIDE

Water Priming Mode

Purge air from plumbing system



TIPS ON FILLING SPA

- Before filling remove spa skirt and be sure that all valves in the plumbing system are fully open to maximise the amount of air that can escape the pipe work during filling
- Remove filter cartridge(s) before filling and be sure to fill the spa through the filter itself to flood the pipe work with water and minimise the chance of air pockets forming in the plumbing during the filling process.
- DO NOT fill spa by placing hose in the foot well. Filling a spa this way will create a large number of air pockets in the pipe work and may cause difficulty when priming. Always fill spa through the filter area.
- Once the spa is filled to the correct level attempt to power up the spa with the filter cartridges still removed. Verify that the spa controller completes its priming sequence and begins normal operation. Once normal operation has been verified turn mains power off, re-install filter cartridge(s) and restart spa.

WARNING


RESTRICTION OF WATER FLOW DUE TO DIRTY FILTER CARTRIDGES IS THE MOST COMMON CAUSE OF ER-3 FAULTS. IF THE SPA POOL HAS BEEN OPERATING NORMALLY THEN INTERMITTENT ER-3 FAULTS START TO OCCUR THE FILTER CARTRIDGE(S) WILL REQUIRE SERVICING.

DEPENDING ON TYPE OF FILTER CARTRIDGE(S) INSTALLED THE FILTERS WILL EITHER REQUIRE CLEANING, SOAKING IN A FILTER CARTRIDGE DEGREASER SOLUTION OR REPLACING. REFER TO SPA RESELLER / MANUFACTURER FOR DETAILS ON TYPE OF CARTRIDGE INSTALLED AND RECOMMENDED CLEANING FREQUENCY & METHODS.

Every time the power is turned on the SV controller will initiate a water priming sequence on start up. During a priming sequence the filtration pump will run for up to 20 seconds at a time in an attempt to purge air from the plumbing. The keypad display will scroll PRIMING during this sequence.

If the spa controller is successful in clearing all of the air from the heater tube the system will begin normal operation. However if air is still detected the spa controller will shut down and latch on fault code (ER3-Water Prime).

How do I solve ER-3 WATER PRIME:

- ▶ Press Pump A  button to retry water priming sequence
- ▶ Check spa is filled to correct operating level as advised by spa manufacturer (refill if necessary)
- ▶ Remove filter cartridge(s) and retry water prime
- ▶ With mains power turned OFF, bleed airlock from pipe work by slightly loosening couplings on front of filtration pump and allowing air to escape
- ▶ With filter cartridge(s) removed use hose to flush water down pipe work in an attempt to clear the air pockets from the plumbing

IMPORTANT NOTE

Do not allow the filtration pump to continue to run after five (5) x failed priming attempts. Operating a pump without water for extended periods may cause damage to the pump. Turn power off, wait ten (10) minutes and then try again later.

The in-heater water sensor constantly monitors the presence of water in the heater tube. If at any time air bubbles are detected the spa controller will automatically cancel all current operations and force a water priming sequence to begin. This will occur whether the spa is in automatic mode or manual use. If the priming sequence is successful in clearing the air pockets from the plumbing normal spa operation will resume in automatic mode. If unsuccessful the spa controller will shut down and latch on fault code ER-3 Water Prime.

Error Codes & Troubleshooting Problems

How to troubleshoot spa problems

SV spa controllers feature self diagnostics and scrolling error messages to quickly troubleshoot possible problems. Should the spa control encounter a problem the error code / message will scroll across the topside panel screen until the problem is resolved. If an error condition is experienced all spa functions are shut down and the spa should not be used until the error condition has been resolved. A list of error codes with descriptions of problems and possible solutions is detailed below for your reference.



IMPORTANT NOTE

For most error codes mains power to the spa control must be turned OFF and then back ON before the error condition will be cleared.

Heartbeat LED

All SV model spa packs feature a red flashing heartbeat LED light. The heartbeat LED is located on the front right hand side of the spa pack itself (installed underneath spa skirt).

The heartbeat LED flashes to indicate the current health/status of the spa pack. When the spa pack is functioning correctly with no errors to report the heartbeat LED emits a single flash in a constant pulse much like a heartbeat (ON, OFF, ON, OFF). If the spa pack encounters a fault the heartbeat LED will begin flashing in sequence with the error code number being experienced (ie. ER2 = ON,ON; OFF ON,ON; OFF).

If the keypad display is ever blank a spa user can still determine the health / status of the SV controller by removing a panel from the spa skirt and checking the heartbeat LED on the front of the spa pack itself.

ER-2 HEATER PLUG

Problem: No heater sensor communication

Cause: Internal heater sensor communication problem

Solutions:

- Turn mains power OFF, wait 5 minutes then restart spa
- Contact spa reseller if problem is not resolved with power reset

ER-3 WATER PRIME

Problem: Water prime failed – air detected in heater tube

Cause: Airlock in pipe work, low water level, dirty filter cartridges

Solutions:

- Press Pump A button to retry water prime
- Check spa water level (refill if necessary)
- Remove filter cartridges and press Pump A button to retry prime
- Bleed airlock from pipe work by slightly loosening couplings on front of filtration pump
- Remove filter cartridges and flush water down pipe work with a hose

ER-4 THERMAL TRIP

Problem: Heater thermal trip activated. Heater has been active and has had insufficient water flow over the element. Low or no water flow has caused the heater temperature to exceed its maximum limits and the spa control has shut down operation to prevent any damage to the heater unit

Cause: Low water level, airlock in pipe work, closed shut-off valves, dirty filter cartridges, filtration pump failed or operation intermittent

Solutions:

- Turn mains power OFF and wait 10-15 minutes for element to cool and thermal cut-out device to reset. Then turn power back ON
- Check spa water level (refill if necessary)
- Remove filters and clean as per manufacturer's recommendations or replace cartridges if required
- Check under spa cabinet to ensure all shut-off valves are in the OPEN position
- Bleed airlock from pipe work by slightly loosening couplings on front of filtration pump or by removing filters and flushing water down pipe work with a hose.

Error Codes & Troubleshooting Problems

How to troubleshoot spa problems

ER-5 POOL TOO HOT

- Problem:** Pool over temperature. Temperature sensor reading $\geq 45^{\circ}\text{C}$
- Cause:** High ambient temperatures (especially in summer months) have caused water temperature to rise above set temp point, Excessive filtration time, Jet pumps have been operating for extended periods with the spa cover still on
- Solutions:**
- Turn mains power OFF, remove spa cover, allow spa to cool then turn power back ON
 - Check daily filtration time (refer filtration section) and reduce daily filtration time if required
 - Check spa cover is not resting on topside panel buttons causing jet pumps to start when cover is on. Use keylock function to lock keypad buttons when spa not in use.

ER-6 12V OVERLOAD

- Problem:** 12V (port) current draw over 1A limit
- Cause:** Total 12V current drawn by keypad(s), light(s), expansion ports and in pool temp sensor is excessive, 12V power supply is overloaded, too many LED light bulbs installed, faulty LED light
- Solutions:**
- Turn mains power OFF and restart spa to see if problem reoccurs
 - Reduce number of LED lights being installed
 - Systematically unplug lights, in pool temp sensor, keypads and expansion port loads from spa pack (one by one) to identify faulty part
 - Contact your spa reseller if problem persists

ER-8 CTRL FAULT HVS

- Problem:** Heater relay is on when it should be off
- Cause:** Power surge, periods of low or high voltage, water on spa pack terminal block, relay problem
- Solutions:**
- Turn mains power OFF and back ON again to see if spa control recovers from ER8 fault
 - Inspect under spa cabinet for evidence of water leaking onto spa control. If water present, turn mains power OFF and isolate, then resolve leak, dry up excess water, and allow spa control to dry out before restoring power.
 - Contact your spa reseller if problem persists

ER-10 OVER CURRENT

- Problem:** Mains (230V) current draw above current limit (C.LMT) detected
- Cause:** Accessory devices current draw is too large for the C.LMT setting, faulty jet pump or air blower drawing excessive current, current limit (C.LMT) settings are not configured to match circuit breaker rating, load shed (L.SHD) and/or load limit (L.LMT) settings incorrect
- Solutions:**
- Turn mains power OFF and back ON again
 - Check operation of each pump => attempt to identify problematic pump or blower causing ER10 to occur
 - Contact your reseller to check controller settings are configured to match available power and circuit breaker rating

Heat Pump Error Codes

Understanding heat pump error codes

HEAT PUMP ERROR CODES

If an optional heat pump is fitted and a heat pump fault condition is detected a warning message is scrolled across the touch pad LCD every 60 seconds and the heat pump is disabled.

Spa operation will continue however the spa will now heat with the inbuilt SV electric element and there will be no ability to cool the water. The heat pump warning message will continue to scroll every 60 seconds, and the heat pump will remain disabled until the mains power is turned OFF and back ON again.

If after resetting mains power the fault condition persists please contact your spa reseller and report the warning message that is shown. A list of the fault conditions and warning messages are detailed below for reference.

WARNING MESSAGE	DESCRIPTION
"HEAT PUMP AMB"	Ambient thermistor temperature sensor error
"HEAT PUMP COND"	Condenser thermistor temperature sensor error
"HEAT PUMP FLOW"	Water flow not detected
"HEAT PUMP LOW P"	Compressor low pressure switch open
"HEAT PUMP HIGH P"	Compressor high pressure switch open
"HEAT PUMP COMP"	Compressor thermal cut out open
"HEAT PUMP EXCH"	Heat exchanger thermal cut out open



IMPORTANT NOTE

If a heat pump encounters an error the heat pump will remain disabled until the mains power to the SV spa controller is turned OFF and back ON again. The heat pump warning message will continue to scroll every 60 seconds until the power is reset.

Maintenance Timers

SERVICE REMINDER MESSAGES

Certain spa manufacturers will choose to take advantage of the inbuilt service timer reminders available within the SV controller software. Maintenance reminders such as "SERVICE FILTERS" can be programmed to scroll across the screen every 60 seconds after a certain time period has elapsed.

If your keypad display begins scrolling a service reminder every 60 seconds this message can be cancelled/reset by pressing the OK button whilst the service message is scrolling.

SERVICE FILTERS

A default service reminder scheduled to occur every 2 or 4 weeks. This reminder is to prompt the spa owner to thoroughly clean and service their spa filters. Depending on type of filter cartridge(s) installed the filters will either require cleaning, soaking in a filter cartridge degreaser solution or replacing. Refer to spa reseller/manufacturer for details on type of filter cartridge(s) installed and recommended cleaning methods.

How to cancel "Service Filters" scrolling message

Press OK button whilst "Service Filters" message is scrolling across display

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