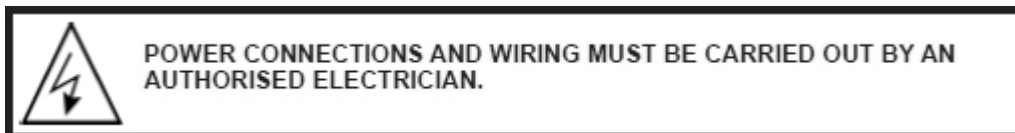**DEPEND ON**

DAVEY

WATER PRODUCTS

Error Codes Explained

Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 controllers and Xcelsior Spa Pool System

> ⚠ POWER CONNECTIONS AND WIRING MUST BE CARRIED OUT BY AN AUTHORISED ELECTRICIAN.

Make sure that the power to the spa is switched off before removing any covers from any of the devices.

The SP400, SP500A MKI/MKII, SP600/601, SP750, SP800, SP1000, SP1200 controllers & Xcelsior Spa Pool System have extensive self-diagnostic capabilities. In the event of a problem it will sound an alarm (beep) and indicate an error number according to the nature of the problem. Pushing the Air/Aux button (SP400, SP500A MKI/MKII, SP600/601, SP750, SP1000 and Xcelsior Spa Pool System) or Scroll button (SP800 and SP1200) will mute the alarm but if left alone it will stop after four minutes. The error numbers, their meanings and possible solutions are listed below.

Err1 or H2O/CHE = PRIME FAILED (except SP1000)

This is not a latching error. It is not necessarily a problem with the SP400, SP54500, SP500A MKI/MKII, SP600/601, SP750, SP800, SP1200 or Xcelsior Spa Pool System itself but indicates that no water is being detected in the heater. The SP400, SP54500, SP500A MKI/MKII, SP600/601 & SP750 will display H2O, and the Xcelsior Spa Pool System will flash H2O/CHE on the touch pad, so pressing the Pump button will try to prime the line. The SP800 & SP1200 LCD display will show three options on the bottom line of text: Retry:Mute:Demo. Pressing the Down button (Retry) will run the pump associated with the heater (Pump1 or Circ Pump) for 10 or 60 seconds respectively, to try to flood the heater tube. Normal operation will resume if successful. If unsuccessful, Error 1 or H20/CHE will be indicated again.

- Check valves and jets are open correctly, filter is not blocked, that the filter pump is working and that there is enough water flow through the heater tube.
- Check that air is not trapped in the heater tube. Check that all of the air has been bled from the system.
- Check for leaks (water or air) in pipe work, O-rings, seals and loose fittings. If there is air around the water sensor the controller will think the heater is empty. This may occur if there is a small leak so that the water drains out of the heater over time.
- If there is water flow then the water sensor may be dirty or faulty. Remove and inspect, replace if necessary. Check the water sensor to circuit board connection for water, corrosion or fouling.
- Make sure that you have the minimum chemical levels in the water for the Xcelsior Spa Pool System.
- When all other options have been exhausted change the circuit board.

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Error Codes Explained

Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 controllers and Xcelsior Spa Pool System

CE:01 = STUCK BUTTON (SP1000 Only)

This error indicates that one of the buttons in the control panel/touch pad is stuck or has been held down for more than one minute. This may be caused by water getting into the control panel/touch pad, damage to the control panel/touch pad or its cable, or by the spa pool cover pressing on the touchpad.

- Inspect the control panel/touch pad for damage; test the operation of each button by checking that they all feel the same.
- Check the control panel/touch pad to main circuit board connection and the cable itself for any damage or corrosion.
- Use a known good working control panel/touch pad and run the controller, if this gets rid of the error reoccurring, a new control panel/touch pad is needed. If it still cuts out on CE:01, then the problem is in the controller.
- When all other options have been exhausted change the main circuit board.

Err2 is not used (except SP1000).

- **If this comes up please contact the Davey Service Centre in your state.**

CE:02 (SP1000 Only)

This error indicates a problem with the communications between the control box and the touch pad.

- Try another touch pad to see if this corrects the issue, and if so, replace faulty touch pad.
- If not, then change the main circuit board in the controller.

Errors 3-8 are latching errors.

Operation will stop and will not continue until the controller is reset (see the Resets for Controllers document).

Er3/Err3 = STUCK BUTTON (except SP1000)

This error indicates that one of the buttons in the control panel/touch pad is stuck or has been held down for more than one minute. This may be caused by water getting into the control panel/touch pad, damage to the control panel/touch pad or its cable, or by the spa pool cover pressing on the touchpad.

- Inspect the control panel/touch pad for damage; test the operation of each button by checking that they all feel the same.
- Check the control panel/touch pad to main circuit board connection and the cable itself for any damage or corrosion.
- Use a known good working control panel/touch pad and run the controller, if this gets rid of the error reoccurring, a new control panel/touch pad is needed. If it still cuts out on Er3/Err3, then the problem is in the controller.
- When all other options have been exhausted change the main circuit board.

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Error Codes Explained

Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 controllers and Xcelsior Spa Pool System

CE:03 = NO TEMPERATURE DATA (SP1000 Only)

This error indicates a problem with the digital temperature sensor in the pool. It might be caused by the sensor being disconnected or by damage to the sensor or cable.
- Check temp sensor lead for damage.
- Check the temperature sensor to circuit board connection for water, corrosion or fouling.
- Connect another sensor and check that the controller is operating correctly. If it is, then change the temperature sensor, if not change the main circuit board.

Er4/Err4/CE:04 = NO WATER SENSOR (All Models)

This error indicates a problem with the optical water sensor in the heater. It may be caused by the sensor being disconnected or by damage to the sensor.
- Check the water sensor to circuit board connection for water, corrosion or fouling.
- Remove the water sensor and inspect for calcium build up and clean or replace as necessary.
- When all other options have been exhausted change the main circuit board.

Er5/Err5/CE:05 = OVERTEMPERATURE (All Models)

This error indicates that the digital temperature sensor in the heater or pool has detected a temperature of 45°C or more. This is not necessarily a problem with the SP400, SP54500, SP500A MKI/MKII, SP600/601, SP750, SP800, SP1200 or Xcelsior Spa Pool System itself. It might be caused by excessive pump use during hot weather. In this case reduce the filtration time and increase the sleep time.
- Check that another source of heat is not heating the pool excessively. Look at pumps operating for long durations, solar heating, heat pumps, lighting etc.
- Check that the ambient temperature is not above or close to 45°C.
- If an in heater temperature sensor is used check that there is adequate water flow through the heater. Check that the filter and pump are not blocked and that the jets and valves are open.
- Measure the pool temperature and verify the controller's reading. If the controller has an in heater sensor then circulate the water for a few minutes first. If the controller is reading an incorrect temperature then the temperature sensor may be damaged or faulty. Connect another sensor and check that the controller is operating correctly. If it is then change the temperature sensor, if not change the main circuit board.

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Error Codes Explained

Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 controllers and Xcelsior Spa Pool System

Er6/Err6/CE:06 = THERMAL CUTOUT TRIPPED (All Models)

This error indicates that the safety electromechanical over temperature cut-out(s) on the heater has operated. This is not necessarily a problem with the SP400, SP54500, SP500A MKI/MKII, SP600/601, SP750, SP800, SP1200 & Xcelsior Spa Pool System itself. It may have been caused by high temperatures during shipping or by disconnection or failure of the pump. Waiting for the heater to cool below about 38°C and switching the power off and on again will clear this error.

- Check valves are open correctly, pumps are working and that there is adequate water flow through the heater tube.
- Check that filters are clean and jets are open.
- Check thermal cut-outs in pumps and other equipment. (Run pump directly from mains to see if it over heats and cuts out.).
- Check that the capacitors in the pump are within their operating specification and replace if necessary.
- Check that the switch gear in the pump is working correctly and renew it or replace the pump as necessary.
- Check all connections in the controller are tight and clean.
- Check for overheated or burnt wires from the relays to the thermal overloads and onto the element posts.
- Make sure air cannot collect in the heater tube. See the '24Hr Circulation Pump Recommendations' of the Installation and Service Manual for your Spa Controller.
- If using a small circulation pump, and if an in-line strainer/filter is fitted in the suction line, make sure this is clean.
- Make sure there is no air in the Xcelsior Spa Pool System motor can area. Attempt to bleed air out via the discharge outlet and failing that, drain off some water and put a hose down the skimmer box (with filter medium removed) and force water into the pump front.
- Check the thermal overloads and make sure that they are not visually damaged and that they are still electrically connected and not open circuit.
- When all options have been exhausted change the main circuit board.

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Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 controllers and Xcelsior Spa Pool System

E.r6 = WATER JACKET THERMAL OVERLOAD TRIPPED (Xcelsior Spa Pool System Only)

This error indicates that the thermal overload that is attached to the water jacket has tripped. This may also indicate that the connector for this thermal overload has come loose either during transit or during use.

• Attempt to reset the Xcelsior Spa Pool System (see the Resets for Controllers document).
• If it appears again, remove the rear circuit board cover and firmly press on the 2 pin white connecter near the transformer. Reset the Xcelsior Spa Pool System (see the Resets for Controllers document).
• Make sure there is no air in the Xcelsior Spa Pool System motor can area. Attempt to bleed air out via the discharge outlet and failing that, drain off some water and put a hose down the skimmer box (with filter medium removed) and force water into the pump front.
• Replace the Motor Jacket thermal overload. Reset the Xcelsior Spa Pool System (see the Resets for Controllers document).
• When all options have been exhausted change the main circuit board.

Er7/Err7/CE:07 = STUCK RELAY (All Models)

This error indicates a problem with the heater control circuitry inside the unit.

• Check that there are no short circuits across the relay terminals or associated wiring.
• Check that all internal wiring is correct and that terminals are tight and clean.
• Check for corrosion on the circuit board and replace circuit board if any is found.
• When all options have been exhausted change the main circuit board.

Er8/Err8 = NO TEMPERATURE DATA (except SP1000)

This error indicates a problem with the digital temperature sensor in the heater or pool. It might be caused by the sensor being disconnected or by damage to the sensor or cable.

• Check temp sensor lead for damage.
• Check the temperature sensor to circuit board connection for water, corrosion or fouling.
• Connect another sensor and check that the controller is operating correctly. If it is, then change the temperature sensor, if not change the main circuit board.
• Make sure there is only one sensor plugged into the main circuit board. Either 'In-Heater' or 'In-Pool' sensor, not both (SP400, SP600/601 & Xcelsior Spa Pool System only).
• Use the diagnostic display to determine which temperature sensor is at fault (see Diagnostic Displays section for SP800 & SP1200 only).

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Applicable to SP400, SP54500, SP500A MKI/MKII, SP600, SP601, SP750, SP800, SP1000, SP1200 controllers and Xcelsior Spa Pool System

Err9 = REAL TIME CLOCK FAILURE (SP800 & SP1200 only)

This error indicates a problem with the real time clock within the SP800 & SP1200.
- Try resetting the unit (see the Resets for Controllers document).
- If this fault continues to occur, change the main circuit board.

Er9 = HEATER CONTROL CIRCUITRY (Xcelsior Spa Pool System only)

This error indicates a problem with the heating circuit inside the motor can of the Xcelsior Spa Pool System.
- This error may be preceded by the flashing on and off of the heater light at approximately 5 second intervals before Er9 is displayed on the touch pad.
- Turn the power to the spa off, and wait 10 minutes. Turn the power back on and reset the Xcelsior Spa Pool System (see the Resets for Controllers document).
- If this continues to occur, replace the Xcelsior Spa Pool System.

CE:09 = PRIME FAILED (SP1000 only)

This is not a latching error. It is not necessarily a problem with the SP1000 itself but indicates that no water is being detected in the heater. An error code of CE:09 will be displayed on the touch pad, so pressing the Pump button will try to prime the line for 10 or 60 seconds respectively, to try to flood the heater tube. Normal operation will resume if successful. If unsuccessful, CE:09 will be indicated again.
- Check valves and jets are open correctly, filter is not blocked, that the filter pump is working and that there is enough water flow through the heater tube.
- Check that air is not trapped in the heater tube. Check that all of the air has been bled from the system.
- Check for leaks (water or air) in pipe work, O-rings, seals and loose fittings. If there is air around the water sensor the controller will think the heater is empty. This may occur if there is a small leak so that the water drains out of the heater over time.
- If there is water flow then the water sensor may be dirty or faulty. Remove and inspect, replace if necessary. Check the water sensor to circuit board connection for water, corrosion or fouling.
- When all other options have been exhausted change the main circuit board.

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