

# TROUBLE SHOOTER



2200i™



1100i™



600i™



FOCUS™



QUMULUS™

ERROR	EXPLANATION	POSSIBLE SOLUTION
E 1	Main supply 230 V off	Check power supply and fuses, transformer connections.
E 2	Low fluid-message	Install new fluid container. Note: low fluid, does not mean empty, but low.
E 3	Fire alarm activated	If there is or has been 12V on FIRE terminals. Reset fire alarm and reset Fog Cannon. Press 4 seconds on the reset button placed on the middle of the PCB.
E 4	Battery voltage too low	Batteries need a recharge - or changing. Should an E4 show up after reset, or restart and there are no batteries connected, then change the PCB.
E 5	Battery charge tried for 24 hours without success	Change batteries or alternatively try to recharge with an external charger.
E 6	Battery failed in load test	Change batteries.
E 7	Temperature on PCB too high	Check if there is ventilation (fresh air) around the machine. The temperature in the housing might be too high to cool down the PCB. If E4 becomes 4-5 minutes after start up - try a new PCB.
E 8	Temperature on PCB too low	Temperature in the room and around the Fog Cannon is too low. When the machine is cold and PCB temperature lower than 5°C it can not start up. Possible solution is to heat up the room or to warm a little on the PCB with a hairdryer or similar. Be careful when heating the PCB - if you are heating too close or too hot you could damage the PCB. Max temperature on PCB is 70°C.

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E 9	Temperature on thermal sensor too high or there is bad connection	<p>Check that the sensor is well connected to the terminals or alternatively fasten the wires. Green to 1 and white to 2. No. 3 is not used.</p> <p>If the E 9 continuously shows up:            By cold machine; change PCB -            By warm machine; change sensor.</p> <p>Also check that there is no short circuit from sensor wire running to ground.</p> <p>Sometimes after many short test shots it can happen that an E9 appears. The reason in this case can be overheating in the nozzle end and the machine needs to cool down before it is ready.</p>										
E 10	Temperature on thermal sensor too low	<p>Check thermal overload fuse on the end of heating element. There is a reset pin in the middle of the thermal fuse.            Check fuse F 3</p> <p>Check heating cartridge resistance:</p> <table data-bbox="505 1065 766 1231"> <tr> <td>FOQUS™</td> <td>81 Ohm</td> </tr> <tr> <td>QUMULUS®</td> <td>53 Ohm</td> </tr> <tr> <td>600i™</td> <td>53 Ohm</td> </tr> <tr> <td>1100i™</td> <td>41 Ohm</td> </tr> <tr> <td>2200i™</td> <td>33 Ohm</td> </tr> </table> <p>Values are app. They can vary 2-3 Ohm.</p> <p>Check thermal sensor - green wire to + and white wire to -. Check connection is OK.</p> <p>Test the sensor by taking out the sensor and its wires. Heat up the tip of the sensor (with a cigarette lighter or similar) while a Volt meter is connected. It shall be possible to measure a value 10-15 mV.</p> <p>If the machine should be warm and by E10 telling it is cold, there can be a bad connection inside the sensor. Change sensor. There can also be a failure in the PCB - change PCB.</p>	FOQUS™	81 Ohm	QUMULUS®	53 Ohm	600i™	53 Ohm	1100i™	41 Ohm	2200i™	33 Ohm
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E 12	Pump time out	<p>Fluid container empty, change container.</p> <p>Fluid container not connected.</p> <p>If the machine has not produced fog for a long time (1 year or more) the pump can be blocked. In this case it can help to knock a little on the end of the pump while it is activated.</p> <p>Note: an E12 error needs a reset on reset button 4 seconds.</p>
E 13	The build-in 12 V supply overloaded	<p>Too much extra equipment connected to the 12V supply or there is a short cut in connected equipment.</p> <p>Remove the overload or repair the short cut.</p> <p>If you cannot wake up the 12 Volt supply after a reset - change the PCB.</p>
E 14	Error in load test circuit	<p>Check the white ceramic resistance (next to the beeper) - it might have lost or broken its connection to the PCB.</p> <p>Repair the soldering or change the PCB.</p>

## ADDITIONAL INFORMATION

Battery test	<p>The machine will carry out a regular battery test every 24 hours.</p> <p>Before installing new batteries you can make your own battery test either with a professional battery tester - it should show a voltage &gt;12,3 V and a capacity &gt;0,8 Ah.</p> <p>Or alternatively use a voltmeter.</p> <p>Measure the voltage to &gt;12.3V. Connect a 20-21 Watt lamp - this should illuminate bright and clear for a minimum of 10 seconds and the voltage should at the same time not be lower than 11 V.</p> <p>If lower than 11V the capacity is down to "bad conditioned battery" and you will soon get the message E6 (battery failed in load test).</p> <p>After the test the voltage shall increase again to more than 12 Volts.</p> <p>A well charged and well conditioned battery will have a voltage of 12,5 to 12,8 V.</p>
E4 E5 E6 When installing new batteries	<p>Please be aware that batteries are of lead acid type. This type of battery cannot be stored for more than 3-4 months. When installing a new battery that already has been stored too long you will in many cases get a new "battery error" shortly after. Check that new batteries are well charged and in good condition.</p>
E9 Thermal sensor	<p>To check the function of the thermal sensor, you must disconnect the sensor, take it out, connect the 2 wires to a volt meter (must be capable of measuring mV). Try to heat the tip of the sensor with a lighter or similar. It should be possible to measure a voltage of between 10 and 15 mV.</p>

## ADDITIONAL INFORMATION

<p>E10 Heating cartridge</p>	<p>If heating failure occurs you can check the resistance in the heating cartridge. Switch off the main power. Pull out the 4-pole plug next to the glass fuses. Use an Ohm meter and measure between the white and the brown wire. The resistance shall be approx: FOQUS™ 81 Ohm QUMULUS® 53 Ohm 600i™ 53 Ohm 1100i™ 41 Ohm 2200i™ 33 Ohm Be sure that there is full passage/connection through the thermal over load fuse.</p>
<p>External LED's</p>	<p>During normal function the LED's are only visible when the DIS input is powered 12V or all fog time DIP-switches 2, 3, 4 are in off position. The green light will flash while heating. When the machine is ready there will be a constant green light. Yellow light means low fluid or the flat cable not connected to the fluid container. Red light is error signal.</p>
<p>Beeper</p>	<p>The beeper will sound when an error occurs or when fluid is low. The beep frequency does not refer to a specific error. The longer the beeper is on, the longer time between the individual sounds.</p>
<p>Reset</p>	<p>E 1-4 have an automatic reset. Other errors must be manually reset after repair/service. Alternatively you can always make a manual reset by pressing the reset button for 4 seconds.</p>



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