



Troubleshooting Theory

Error Codes

Error Codes are designed to protect your kiln and the ware inside your kiln if there is a problem with the firing. In most cases when an error is triggered the kiln will shutoff and display E followed by the Error Code that describes the error that occurred. Non-critical errors will not stop the firing but they will display a code to notify you of the problem.

The following tables describe the error codes, their probable cause, and recommended solutions. If you run across a code that is not listed or you need help explaining, please give Skutt or your local distributor a call.

Error Code	Evaluation
E- 0	<p><u>Description</u> Software Error.</p> <p><u>Potential Cause</u> Caused by hardware or electrical noise, can be caused by electrical spikes, surges, or arcing.</p> <p><u>Potential Solution</u> Recheck the selected program, and reprogram if necessary.</p>
E- 1	<p><u>Description</u> The temperature is increasing less than 12 degrees per hour during a ramp segment, where the temperature is programmed to increase. This slow rate must persist for 22.5 minutes before the error is displayed.</p> <p><u>Potential Cause</u> Worn or old heating elements. Low voltage to the kiln. A broken heating element or faulty relay. Burned or broken wires to the elements or relays. Electrical noise.</p> <p><u>Potential Solution</u> Check elements. Check Relays. Use VOLT Menu feature to check voltage.</p>

TROUBLESHOOTING THEORY CONTINUED

<p>E- 2</p>	<p><u>Description</u> During a hold segment the temperature rises to greater than 50 degrees above the hold temperature which was set. The temperature must stay 50 degrees above this set temperature for 18 seconds before the error is displayed.</p> <p><u>Potential Cause</u> Stuck relay</p> <p><u>Potential Solution</u> If only one section (or relay) remains on then it is a stuck relay. Turn off breaker to shutoff power to the kiln.</p>
<p>E- 3</p>	<p><u>Description</u> During a hold segment the temperature is more than 50 degrees below the hold temperature which was set. The temperature must stay 50 degrees below this set temperature for 18 seconds before the error is displayed.</p> <p><u>Potential Cause</u> Opening the door or lid of the kiln. Relay or element failed during firing.</p> <p><u>Potential Solution</u> Check relay. Check elements.</p>
<p>E- 4</p>	<p><u>Description</u> The firing is in a ramp segment where the temperature is programmed to decrease and temperature is more than 50 degrees above the previous hold temperature. The temperature must remain 50 degrees about the hold temperature for 18 seconds before the error is displayed. E- 4 is the same as E- 2 except that E- 4 occurs during a ramp phase rather than a HOLD.</p> <p><u>Potential Cause</u> Stuck relay. Skipped step feature.</p> <p><u>Potential Solution</u> Check relay. If E- 4 occurs when skipping a ramp phase, press a key to clear the error. Allow the kiln to cool to within 50 degrees of the next hold temperature. Restart kiln and skip steps until you get to the segment you want.</p>

TROUBLESHOOTING THEORY CONTINUED

<p>E- 5</p>	<p>The temperature is more than 50 degrees below the local set-point temperature during a ramp segment where the temperature is programmed to decrease. The temperature must stay 50 degrees below this set. temperature for 18 seconds before the error is displayed.</p> <p>Open door or lid. Bad elements. Bad relay.</p> <p>Check elements. Check relay.</p>
<p>E- 6</p>	<p>A Negative temperature is displayed. This generally indicates the thermocouple is connected incorrectly. To correct this situation, ensure the red and yellow wires are connected correctly to the controller and at all junctions. You can identify the red lead on an unmarked thermocouple with a magnet because a magnet will be attracted to the red lead.</p>

TROUBLESHOOTING

Error Code	Description
E- 8	When using the CONE FIRE MODE, the temperature is decreasing during the last ramp segment. If this a KilnSitter Kiln using a Wall Mount Controller, KilnSitter may have shut off the kiln.
E- A	Invalid program variable.
E- bd	Controller is reading a board temperature above 160°F (71°C) or below 0°F (-18°C). Firing has stopped.
E- d	The kiln or one of the zones in a zone control kiln, is more than 50°F (10°C) above the travelling set point.
E- E or E- t	A hardware error has been detected by the controller software.
E- H	Analog to Digital Converter did not pass the self – check diagnostic test on reset.
Err-	The Err with a dash indicates there was a power loss to the controller while writing a program to the non-volatile memory chip.
Err P	A continuous Err P indicates a short term power outage has occurred and the kiln has continued with the program.
FAIL	Steady display all thermocouples (T/Cs) have failed. If flashing thermocouples of a zone control kiln have failed.
PF	Continuous PF in display.
StUc	Key was held too long or was stuck.

ELECTRICAL THEORY CONTINUED

SKUTT ERROR CODES**These Errors Will Only be Detected If Error Codes Are On:**

- E-1 - Kiln temperature increasing slower than 12° F per hour when ramping up (22.5 min)
- E-2 - Kiln temperature 50° F above hold temperature (18 seconds)
- E-3 - Kiln temperature 50° F below hold temperature (18 seconds)
- E-4 - Kiln temperature 50° F above previous hold when ramping down (18 seconds)
- E-5 - Kiln temperature 50° F below traveling set point when ramping down (18 seconds)
- E-D - Kiln temperature 50° F above hold temperature (18 seconds)
- PF - Continuous PF in display
- Err P - A continuous Err P indicates a short term power outage has occurred and the kiln has continued with the program.

The Error Code Setting Does Not Affect These Errors:

- E-0 - Software Error
- E-6 - Reversed thermocouple leads
- E-8 - In Cone fire temperature decreasing in last segment
- E-9 - Wrong thermocouple hardware/software setting
- E-20 - Did not receive lock on Clock Generator Module
- E-21 - On-chip a2d not responding/problem
- E-22 - Off-chip a2d not responding/problem
- E-23 - SPI not responding/problem
- E-24 - EE access while in write cycle
- E-25 - a2d not responding during power up
- E-E - EE miscommunication or failure
- E-t - A hardware error has been detected by the controller software
- E-A - Invalid program variable
- StUc - Key was held too long or was stuck
- E-bd - High board temp
- E-H - Analog to Digital Converter did not pass the self - check diagnostic test on reset
- FAIL - Steady display all thermocouples (T/C's) have failed. If flashing thermocouples of a zone control kiln has failed.
- E-/ - Division by zero detected
- E-- - Power loss during EE write
- E-R - Ram and EE do not match
- E-U - Invalid user number

Note: When an error stops the firing, pressing the **ENTER** key will clear the error and the display will show the firing time and the temperature which was reached.