



Error Codes

Error Codes

Error Codes will display when the controller senses something is wrong with the kiln. If the error detected has the potential to damage the ware, the kiln, or the safety and property of the owner, the controller will stop the firing.

On certain occasions an artist may want to turn off some of the error codes to avoid triggering an error when performing a certain technique (such as raking fused glass). Below is a list of the possible errors that may be displayed.

These Errors Will Only be Detected If Error Codes Are On:

E-1

Description

Kiln temperature increasing slower than 12° F per hour when ramping up. The slow rate must persist for 22.5 minutes. Firing will be stopped. For some reason the kiln does not have the power it needs to reach temperature.

Possible Causes

- Element is broken
- Relay is burned out
- Voltage is low
- Firing to a temperature beyond the kilns maximum rating

E-2

Description

Kiln temperature 50° F above hold temperature. Condition must persist for at least 18 seconds. The kiln is unable to turn off one or more of the elements.

Possible Causes

- Stuck relay

E-3

Description

Kiln temperature 50° F below hold temperature. Condition must persist for at least 18 seconds. For some reason the kiln lacks the power to maintain a hold temperature.

Possible Causes

- Elements are wearing out
- Element is broken
- Relay is burned out
- Voltage is low.
- Firing to a temperature beyond the kiln's maximum rating

ELECTRICAL THEORY CONTINUED

E-4**Description**

Kiln temperature 50° F above previous hold temperature when ramping down. Condition must persist for at least 18 seconds. The kiln is unable to turn off one or more of the elements.

Possible Causes

Stuck relay

E-5**Description**

Kiln temperature 50° F below traveling set point when ramping down. Condition must persist for at least 18 seconds. The kiln lacks the power to maintain a slower rate of cooling.

Possible Causes

Element is broken
Relay is burned out
Voltage is low

E-d**Description**

Kiln temperature 50° F above traveling set point. Condition must persist for at least 18 seconds. The kiln is unable to turn off one or more of the elements.

Possible Causes

Stuck relay
Loose connection in the thermocouple circuit

PF**Description**

Indicates a long term power outage to the controller while a program was running. Program was stopped to avoid possible damage to the ware caused from too much heatwork. Temperature dropped more than 250° F. Press ENTER to clear the message.

Possible Causes

Temporary power outage while the kiln was firing

ErrP**Description**

Indicates a short term power outage to the controller while the kiln was firing. The temperature to the kiln did not drop 250° F or more from the traveling set point from the time of the outage. The program continues when the power is restored. Press ENTER to clear the message.

Possible Causes

Temporary power outage while the kiln was firing

ELECTRICAL THEORY CONTINUED

The Error Code On/Off Setting Does not Affect These Errors:**E-0****Description**

Indicates a software error

Possible Causes

Failed hardware from electrical surge
Electrical noise in power supply or from arcing relay

E-6**Description**

This error indicates that the electrical leads from the thermocouple have been reversed somewhere in the circuit.

Possible Causes

Replacement thermocouple put in backwards
Thermocouple lead wires reversed on thermocouple block, terminal strip, or controller

E-8**Description**

Indicates that the temperature is dropping during the last segment of a Cone Fire Mode Program

Possible Causes

Element is broken
Relay is burned out
Kiln-Sitter has stopped the program on a Kiln-Sitter kiln equipped with a KM-1 wall mounted controller.

E-9**Description**

Indicates the hardware and software settings for thermocouple type are not in sync. When a type S thermocouple is installed, a jumper pin needs to be installed on the circuit board and the controller settings need to be changed. If you change one without changing the other you will get this message.

Possible Causes

Changed thermocouple setting without changing pin placement on circuit board.

E-20**Description**

Did not receive lock on Clock Generator Module

Possible Causes

Contact Skutt Technical Support

E-21**Description**

On-chip a2d not responding.

Possible Causes

Contact Skutt Technical Support

ELECTRICAL THEORY CONTINUED

E-21**Description**

On-chip a2d not responding.

Possible Causes

Contact Skutt Technical Support

E-22**Description**

On-chip a2d not responding.

Possible Causes

This error code sometimes is triggered by loose connection in the thermocouple wiring or a crack in the thermocouple. If everything in this circuit seems okay contact Skutt Technical Support.

E-23**Description**

SPI not responding or is having problems.

Possible Causes

Contact Skutt Technical Support.

E-24**Description**

EE access while in write cycle.

Possible Causes

Contact Skutt Technical Support

E-25**Description**

a2d not responding during power up.

Possible Causes

Contact Skutt Technical Support

E-E**Description**

EE miscommunication or failure.

Possible Causes

Contact Skutt Technical Support

E-t**Description**

A hardware error has been detected by the controller software.

Possible Causes

Contact Skutt Technical Support

ELECTRICAL THEORY CONTINUED

E-A**Description**

Invalid program variable. The controller has conflicting instructions.

Possible Causes

One possible cause of this is if you set a Max Temp in the Configuration Menu that is lower than a value that has already been entered in a Ramp/Hold Program. When you go to run that particular Ramp/Hold Program the controller will generate this error. In order to run the program you will need to reset the Max Temp to a value higher than the highest temperature in your program. If this does not appear to be the cause of this error contact Skutt Technical Support.

StUc**Description**

This error indicates that the touchpad has a key that is stuck.

Possible Causes

Sometimes when a touchpad gets overheated or exposed to extreme cold, the membrane over the circuit board can become distorted and cause keys to stick. Sometimes you can get them to unstick by blowing it with a hair dryer (no closer than 8"). If this does not work the whole control board will need to be replaced.

E-bd**Description**

The board temperature has exceeded the temperature limit setting. This setting is designed to protect the circuit board from overheating when the kiln room gets too hot. The kiln will shut down and display this message.

Possible Causes

The kiln room got too hot. This could be caused by a number of factors. The most common is inadequate ventilation in the room. Ideally the kiln room ventilation system should be designed to keep the room under 100 ° F when the kiln is at it's maximum rated temperature. An HVAC professional can calculate the amount of the ventilation needed based on the size of the room and the BTU rating of the kiln. You can try using a box fan pointed at the controller if updating the room ventilation is not a realistic option. Another possible cause is that the kiln does not have adequate clearances from the walls or other kilns and the heat is radiating back on the controller. There should be a minimum of 18" of clearance from walls and 36" from other kilns. If there is more than one kiln in the room, try rotating them so the controllers are not facing other kilns.

If these suggestions do not work you can call our Technical Support Team and they can raise the temperature limit that causes the error.

E-H**Description**

Analog to Digital Converter do not pass the self check diagnostic test on reset.

Possible Causes

Contact Skutt Technical Support

ELECTRICAL THEORY CONTINUED

FAIL**Description**

This error is triggered by a break in the thermocouple circuit. If the display is flashing it means that one of the thermocouple circuits on a Zone Control kiln has failed.

Possible Causes

As thermocouples age they oxidize and the metal gets thinner and thinner. Eventually the thermocouple will develop a crack between the 2 dissimilar metals that make up the thermocouple and break the circuit. If changing the thermocouple does not solve the problem, look at all of the connections in the thermocouple circuit and make sure they are secure. Pay special attention to the screws that hold the thermocouple in place on the thermocouple block. These can loosen over time with thermal cycling or when the kiln is moved.

E-/**Description**

Division by 0 detected.

Possible Causes

Contact Skutt Technical Support

E- --**Description**

Power loss during EE write

Possible Causes

Contact Skutt Technical Support

E-R**Description**

Ram and EE do not match

Possible Causes

Contact Skutt Technical Support

E-U**Description**

RInvalid user number

Possible Causes

Contact Skutt Technical Support

ELECTRICAL THEORY CONTINUED

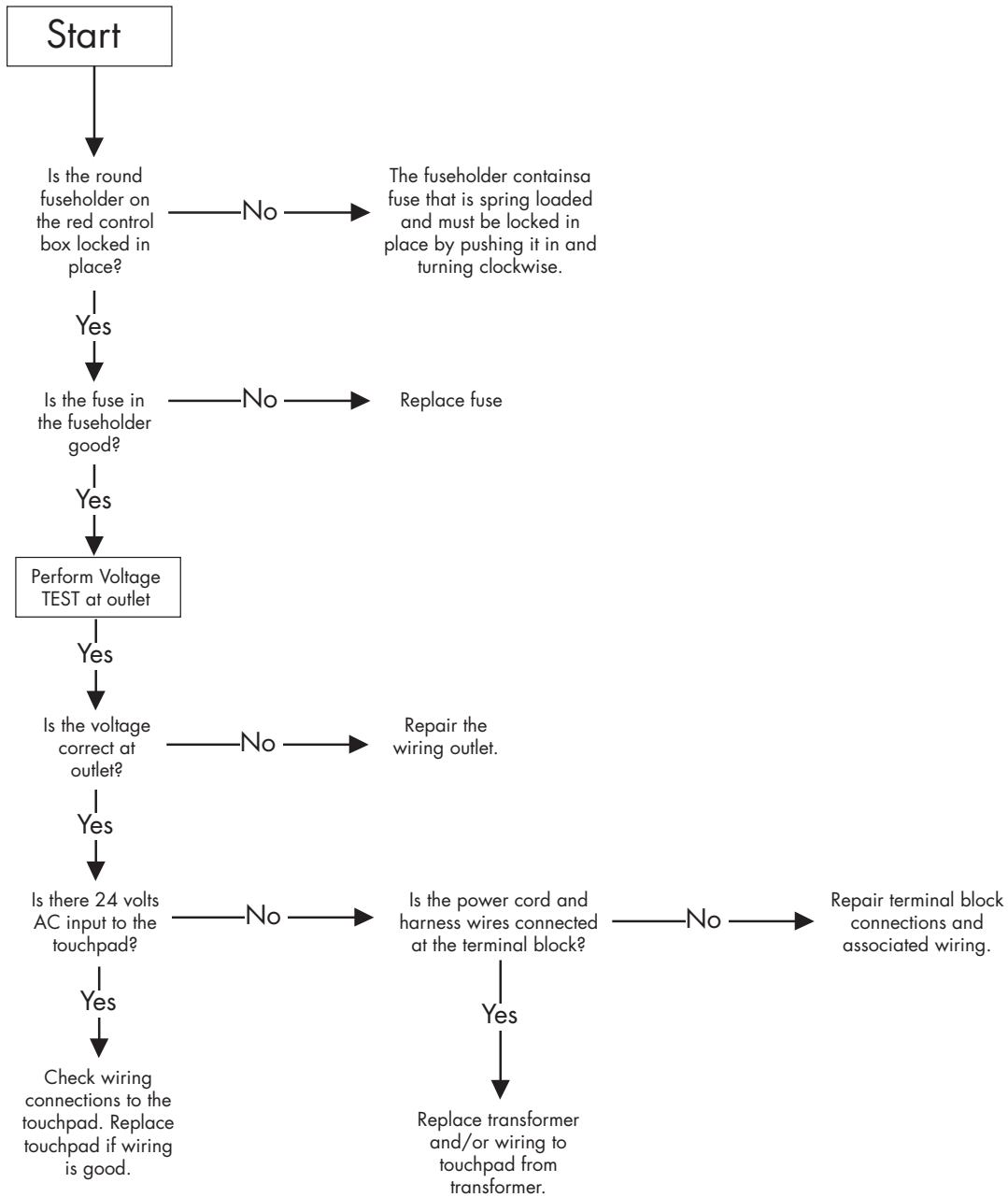
Elements are wearing out - As elements age they increase in resistance, lessening the potential power to the kiln. If you have noticed that your firing times are getting longer and longer or you are firing to a higher cone than usual when the error occurs, this is most likely the cause of the error. Use an Ohm meter to check the resistance of the elements and compare them to the readings listed for your Model, Voltage and Phase. Replace the elements if they are more than 5% above the recommended resistance.

Element is broken - Occasionally an element can break. On a newer element this can be caused by a poor electrical connection or contamination from bits of clay or glaze on the element. Check the resistance of the element in question. If the resistance reading is 0, there is a break somewhere in the element and it needs to be replaced. If you do not have access to a meter you can program the kiln to fire hot enough for the elements to glow (between 600° F and 1000° F degrees depending on the light in the room). Look into the kiln through the peep holes using #3 green or gray welders glasses to protect your eyes. If one element is not glowing, it is likely a broken element. If the element is broken because it is old and brittle, it may be time to replace all of the elements.

Relay is burned out - Relays have a useful life and will eventually burn out. If a relay is burned out it will usually

KILNMASTER TROUBLESHOOTING FLOWCHARTS CONTINUED

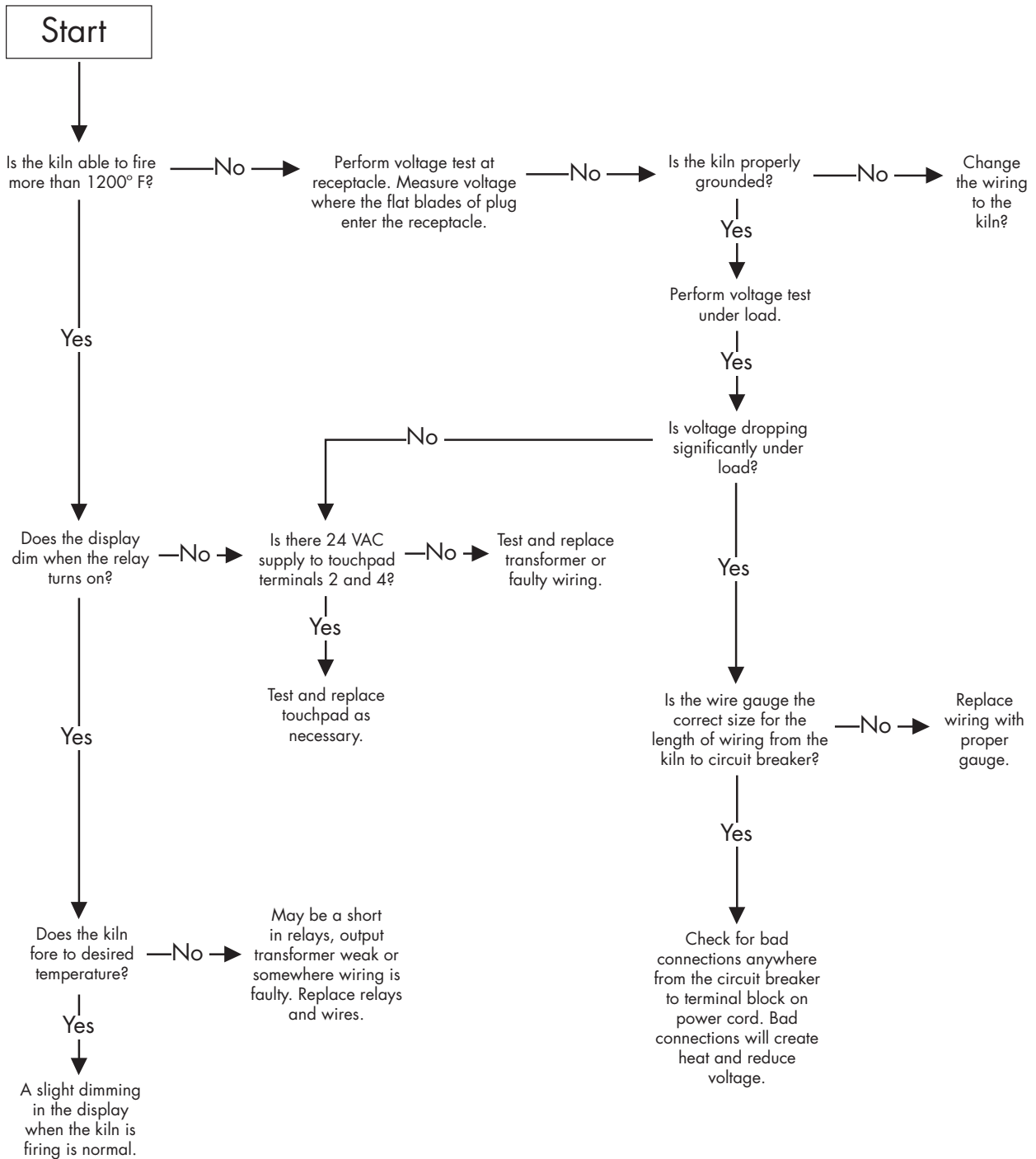
Blank Display	Condition: KM Kiln is plugged in but there is no display lighting up.	8.3b
		KM Kilns
		Blankdis.vsd



TROUBLESHOOTING

KILNMASTER TROUBLESHOOTING FLOWCHARTS CONTINUED

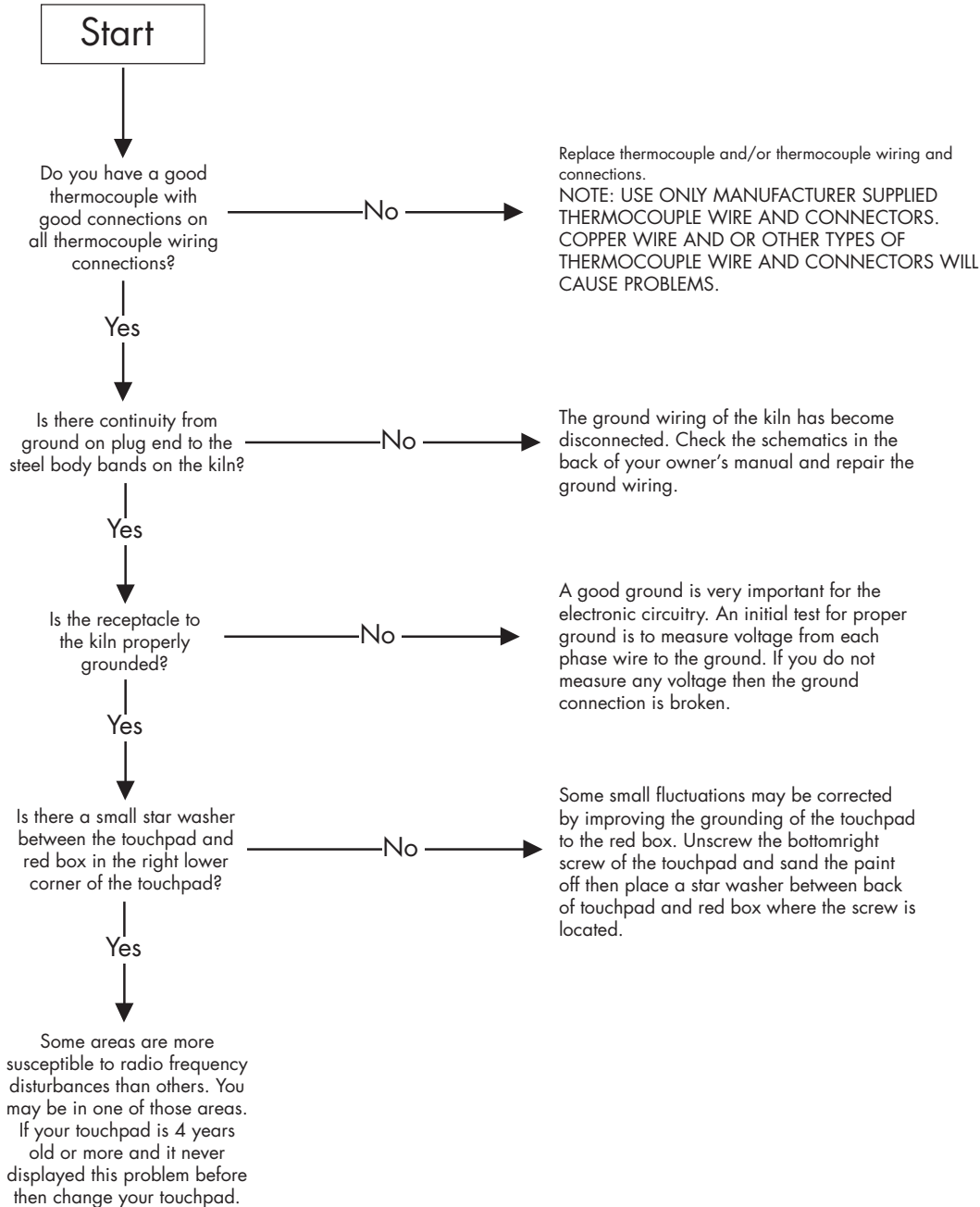
Dim Display	Condition: Display on kiln is dim or get dim under certain conditions. Please note: A slight dimming in the display when the elements are organized is normal.	8.3c
		KM Kilns
		Dimdisp.vsd



TROUBLESHOOTING

KILNMASTER TROUBLESHOOTING FLOWCHARTS CONTINUED

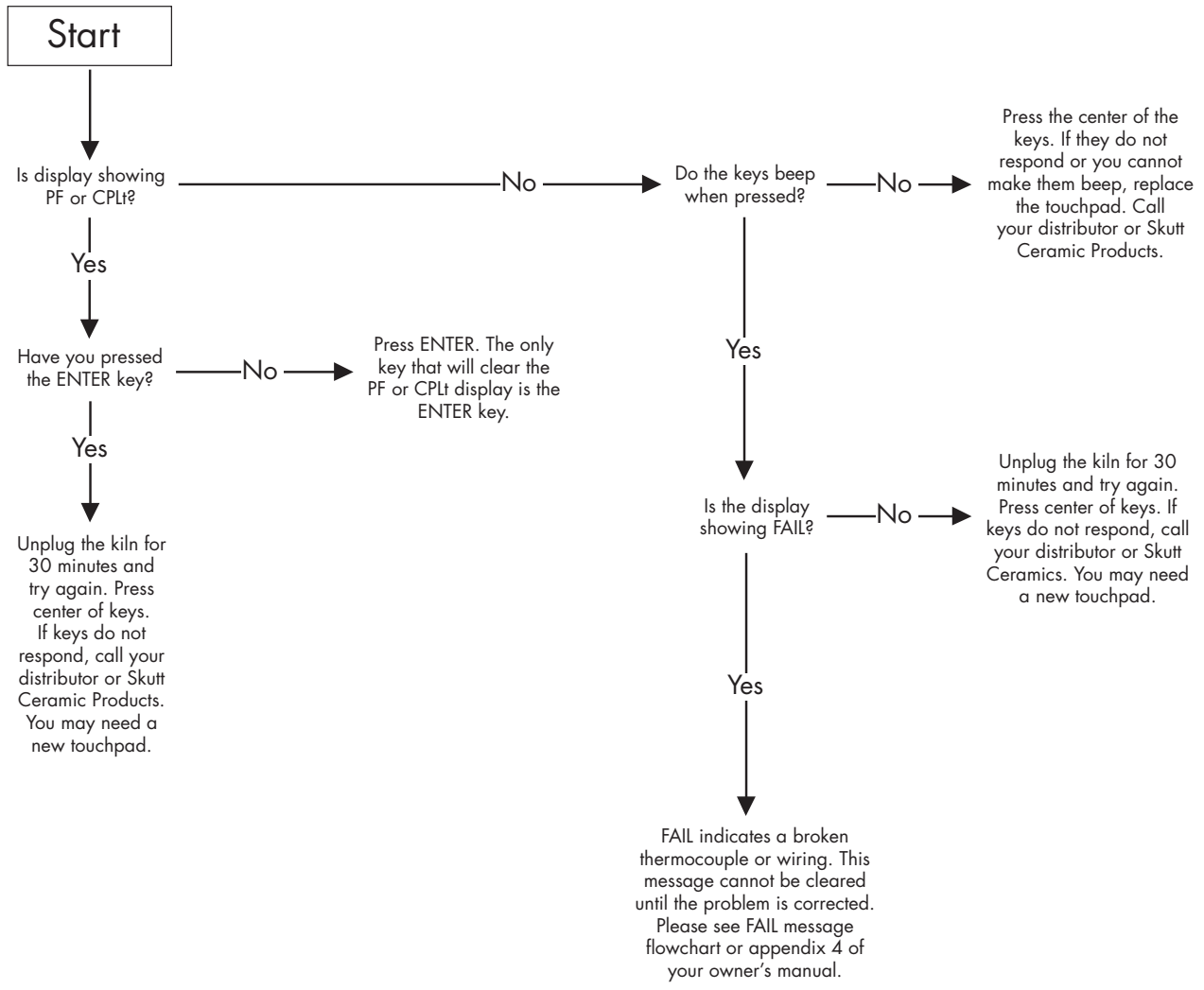
<p>Indicated Temperature Fluctuates</p>	<p>Condition: Temperature fluctuates erratically. The temperature display jumps 15 degrees or more during firing.</p>	8.3d
		KM Kilns
		Jumpydis.vsd



TROUBLESHOOTING

KILNMASTER TROUBLESHOOTING FLOWCHARTS CONTINUED

Key presses don't beep	Condition: Controller will not respond to button key press. Pressing keys will not cause a beep or change the display. Note: You may need to look up flow chart of any message stuck on the display or see Appendix 4 in your owners manual.	8.3e
		KM Kilns
		Keyno.vsd

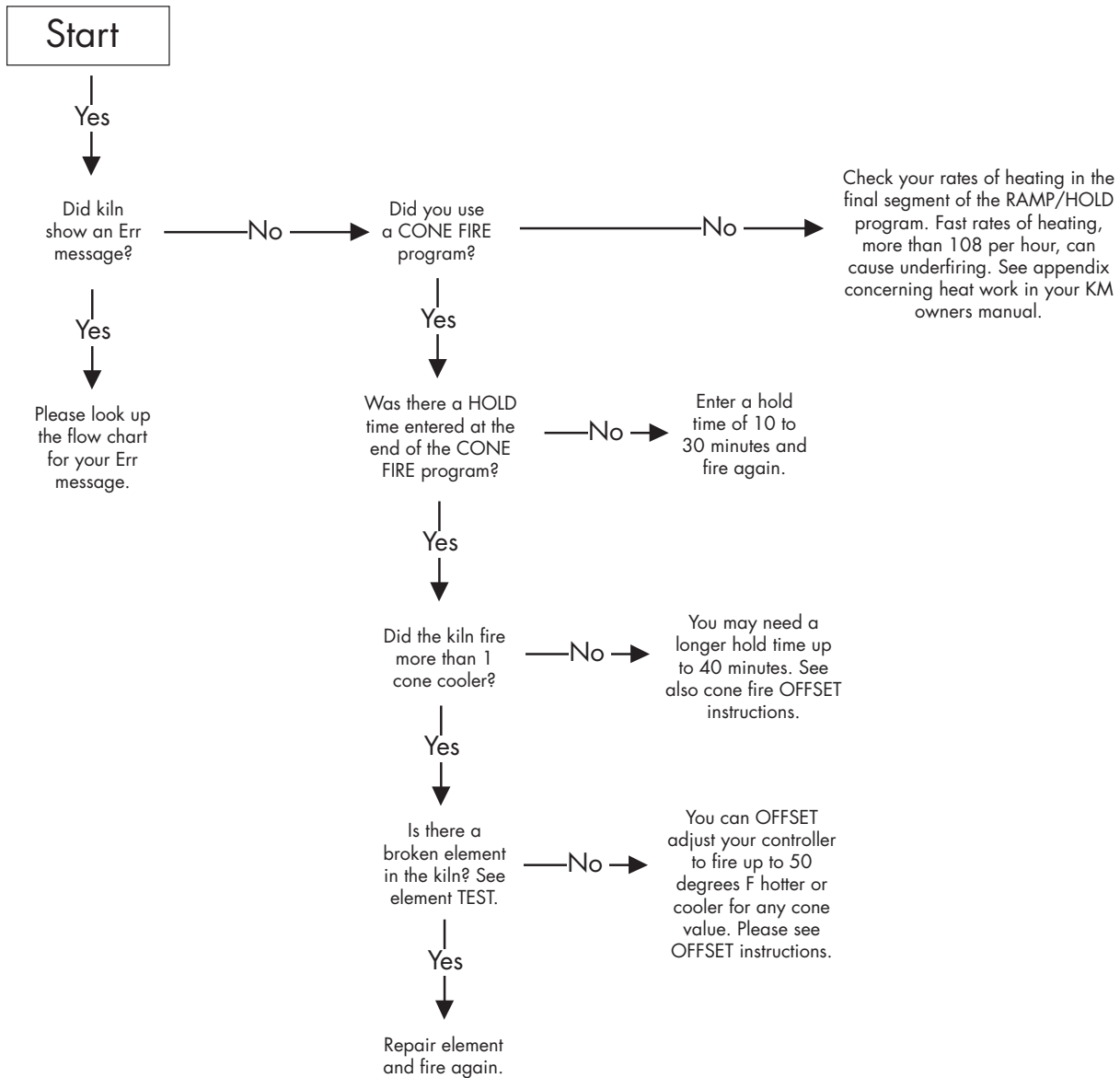


TROUBLESHOOTING

NOTE:
A stuck key can also cause the display to "hang" in a blank condition.

KILNMASTER TROUBLESHOOTING FLOWCHARTS CONTINUED

KM Kiln underfires	Condition: Witness cones placed in the top, center, and bottom of kiln indicate that the whole kiln is underfiring.	8.3f
		KM Kilns
		Kmunderf.vsd



TROUBLESHOOTING