

# SERVICE DATA SHEET - Electric Ranges with ES 630B Electronic Oven Control

**NOTICE - This service data sheet is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. The manufacturer cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.**

## SAFE SERVICING PRACTICES

To avoid the possibility of personal injury and/or property damage, it is important that safe servicing practices be observed. The following are examples, but without limitation, of such practices.

1. Before servicing or moving an appliance remove power cord from electrical outlet, trip circuit breaker to OFF, or remove fuse.

2. Never interfere with the proper installation of any safety device.
3. GROUNDING: The standard color coding for safety ground wires is *GREEN* or *GREEN WITH YELLOW STRIPES*. Ground leads are not to be used as current carrying conductors. **It is extremely important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a potential safety hazard.**
4. Prior to returning the product to service, ensure that:
  - All electric connections are correct and secure.
  - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts.
  - All uninsulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
  - All safety grounds (both internal and external) are correctly and securely reassembled.

**Oven Calibration/Temperature adjustment - See Use & Care Guide.** Please note: Changing calibration affects normal Bake mode. The adjustments made will not change the Self-Cleaning cycle temperature.

## ELECTRONIC SURFACE ELEMENT CONTROL (ESEC)

Symptom	Likely failure condition/cause	Suggested corrective action
Control beeps - only center burner LED's are flashing.	ESEC key display ribbon cable is disconnected or defective.	1. Check / re-install ribbon at J3 connection on the ESEC 30 UIB. 2. Replace ESEC 30 UIB. 3. Replace TST panel.
Control beeps - only left side burner LED's are flashing.	ESEC key display ribbon cable is disconnected or defective.	1. Check / re-install ribbon at J3 connection on the ESEC 30 UIB. 2. Replace ESEC 30 UIB. 3. Replace TST panel.
Control beeps - all burner LED's are flashing.	<b>E11 failure mode</b> - shorted keypad  or  <b>E14 failure mode</b> - ESEC key reads ribbon cable is unplugged or defective  or  <b>E15 failure mode</b> - internal ESEC error or signal loss between ESEC 30 UIB and ESEC relay board.	Turn power off to appliance for 30 seconds - then reapply power. Does error return within 5 seconds after reapplying power? If <b>YES</b> then: Use <b>Solution A</b> shown below. If <b>NO</b> then: Does error return after 30 seconds? If <b>YES</b> then: Use <b>Solution B</b> shown below. If <b>NO</b> then: Test operation. If error does not return then the condition was corrected by the power reset.  <b>Solution A: E14 failure; key reads ribbon cable is disconnected or defective:</b> 1. Check / reinstall ribbon at J4 connection on ESEC 30 UIB. 2. Replace ESEC 30 UIB. 3. Replace TST panel. <b>Solution A: E15 failure; ESEC error or signal loss between ESEC30 UIB &amp; relay board:</b> 1. Check harness and connections between connector P6 or ESEC30 UIB to connector J2 of ESEC relay board. Repair or replace harness as needed. 2. If connection and harness are good then replace ESEC relay board. 3. If error remains then replace ESEC30 UIB. 4. If previous steps do not resolve the failure replace the TST panel. <b>Solution B: - E11 failure; shorted keypad:</b> 1. Reset power supply to appliance and see if failure code clears. 2. Check / re-install ribbon harness and connectors between the TST panel and ESEC 30 UIB. 3. Replace the TST panel. 4. Replace the ESEC 30 UIB.
"Hot Surface" and no element power	At power-up "HE" in display and surface element will not come ON. Surface element and its hot surface limiter mis-wired.	1. Correct wiring of that element and its hot surface limiter.
"Hot Surface" in display even when surface is cold.	1. Hot surface limiter contacts stuck closed. 2. Defective Relay Board. 3. Defective ESEC 30 UIB.	1. With power disconnected, check continuity of hot surface limiter contacts (1b-2b) at that element's terminal block. contacts are closed even when the surface is cold replace element. 2. If hot surface limiter contacts (1B-2B) are open replace power board.
Surface element hot, but no "Hot Surface" appears	1. Loose connector from surface element harness to ESEC Relay Board J4 connector. 2. Miswiring of surface element harness. 3. Open limiter contacts in surface element. (1b - 2b). 4. Failed harness or connector from UIB to Relay Board. 5. Defective Relay Board. 6. Defective ESEC 30 UIB.	1. With power disconnected, check continuity of hot surface limiter contacts (1b-2b) at that element's terminal block. contacts are closed even when the surface is cold replace element. 2. If hot surface limiter contacts (1B-2B) are open replace power board. 1. Check the wire harness connector and seat properly to Relay Board J4 connector. 2. Check surface harness for correct wiring from each element's hot surface limiter - correct wiring or replace harness if necessary. 3. Turn on all elements to Hi. Wait 3 minutes to ensure all surfaces are hot. Check continuity of limiter switch circuit for each element. If circuit is open replace that surface element. NOTE: Limiter contacts can be tested through the harness on Relay Board connector J4 4. Check the wire harness and connectors from ESEC 30 UIB P5 to Relay Board Connector J5. Replace harness if defective. 5. Replace Relay Board. 6. Replace ESEC 30 UIB.

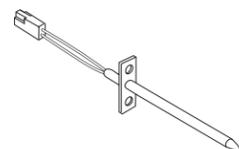
Tech Sheet Abbreviations and Terminology		
EOC = Electronic Oven Control	ESEC = Electronic Surface Element Control	TST = Touch Sensor Technology (touch control glass panel)
UIB = User Interface Board	TSEC = Touch Sensor Electronic Control	RTD = Resistance Temperature Device. (Temp Probe or Temp Sensor)
VSC = Variable Speed Control	PS = Power Supply board (PS1, PS2, etc.)	TCO = Thermal Cut Out also "Thermo Disc" or "Thermal Limiter"

## ELECTRONIC OVEN CONTROL (EOC) FAULT CODE DESCRIPTIONS

Fault Code	Symptom	Suggested Corrective Action
<b>F10</b>	<b>Runaway temperature. Oven heats when no cook cycle is programmed.</b>	1. Check RTD Sensor Probe using the RTD scale found in the tech sheet. Replace if defective. 2. If oven is overheating disconnect power from the range and unplug connector P1 from power supply board. Reapply power to the range. If oven continues to heat when the power is reapplied, replace the oven relay board. 3. Replace the EOC. NOTE: Severe overheating may require the entire oven to be replaced should damage be extensive.
<b>F11</b>	<b>Shorted keypad.</b>	1. Reset power supply to range to see if failure code will clear. 2. Test ribbon harness and connectors between the TST panel and EOC. Replace if defective. 3. Replace the TST panel. 4. Replace the EOC.
<b>F13</b>	<b>Internal software error in EOC.</b>	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
<b>F14</b>	<b>TST Display tail missing or not connected.</b>	1. Test ribbon harness and connections between TST panel and EOC. Replace if defective 2. Replace the TST panel. 3. Replace the EOC.
<b>F15</b>	<b>Signal loss between oven relay board &amp; EOC.</b>	1. Test the harness and connections from EOC connector P16 to oven relay board J2. 2. Replace the oven relay board. 3. Replace the EOC.
<b>F20</b>	<b>Communication failure between EOC &amp; ESEC. (Electric models only)</b>	1. Test wiring harness and connections between EOC connector P2 and ESEC 30 UIB P9. 2. Test wiring harness and connections between ESEC 30 UIB and ESEC 20 relay board. 3. Test wiring harness and connections between PS board 2 (P2) and ESEC 30 UIB connector P7 4. Test for approximately 9 volts DC output from PS board 2 at ESEC 30 UIB connector P7, pins 1 & 5. If output voltage is incorrect test incoming power supply to PS board 2 at harness connector P1 pins 1 & 4. If incoming power is correct (120 VAC) replace PS board 2. If output voltage is correct replace ESEC 30 UIB 5. Replace EOC.
<b>F23</b> <b>F25</b>	<b>Communication failure between VSC board and EOC.</b>	1. Check harness and connections between VSC board and EOC. 2. Test for approximately 5 volts DC to VSC board at P6 connector pins 1 & 6. If voltage is correct replace VSC board. If voltage is incorrect replace EOC.
<b>F30</b> <b>F31</b>	<b>Open probe connection. Shorted Probe connection</b>	1. (F30 or F31) Check resistance at room temperature & compare to RTD Sensor resistance chart. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC & Sensor Probe connector. 2. (F30 or F31) Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC & Probe connector.
<b>F90</b>	<b>Door lock motor latch failure</b>	<b>If latch motor does not run</b> when clean cycle is selected: 1. Check to see if latch motor coil is open. If open, replace latch motor assembly. 2. Test for 120 volts to the terminals of the latch motor. If voltage is correct and motor does not run replace latch motor assembly. If voltage is not correct replace EOC. <b>If latch motor runs</b> when clean cycle is selected: 1. Check the wiring harness between EOC & latch motor switch. Repair or replace harness as needed. 2. Test operation of the switch contacts. Replace latch motor assembly if defective. 3. Check for binding of the latch cam, latch motor rod & latch motor cam. 4. If all situations above do not solve problem, replace EOC.

**IMPORTANT**  
**DO NOT REMOVE THIS BAG**  
**OR DESTROY THE CONTENTS**  
WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED  
**REPLACE CONTENTS IN BAG**

**Resistance Temperature Detector**



RTD SCALE	
Temperature (°F)	Resistance (ohms)
32 ± 1.9	1000 ± 4.0
75 ± 2.5	1091 ± 5.3
250 ± 4.4	1453 ± 8.9
350 ± 5.4	1654 ± 10.8
450 ± 6.9	1852 ± 13.5
550 ± 8.2	2047 ± 15.8
650 ± 9.6	2237 ± 18.5
900 ± 13.6	2697 ± 24.4

