# SERVICE DATA SHEET 318204832 (1202) Rev. A

Appliance with 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 some, but not all, examples of safe practices.

1. Do not attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.
2. Before servicing or moving an appliance, remove power cord from electric outlet, trip circuit breaker to Off, or remove fuse.
3. Never interfere with the proper installation of any safety device.
4. USE ONLY REPLACEMENT PARTS SPECIFIED FOR THIS APPLIANCE. SUBSTITUTIONS MAY DEFEAT COMPLIANCE WITH SAFETY STANDARDS SET FOR HOME APPLIANCES.
5. 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 HAZARD.
6. 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.
   - All panels are properly and securely reassembled.

## IMPORTANT NOTES

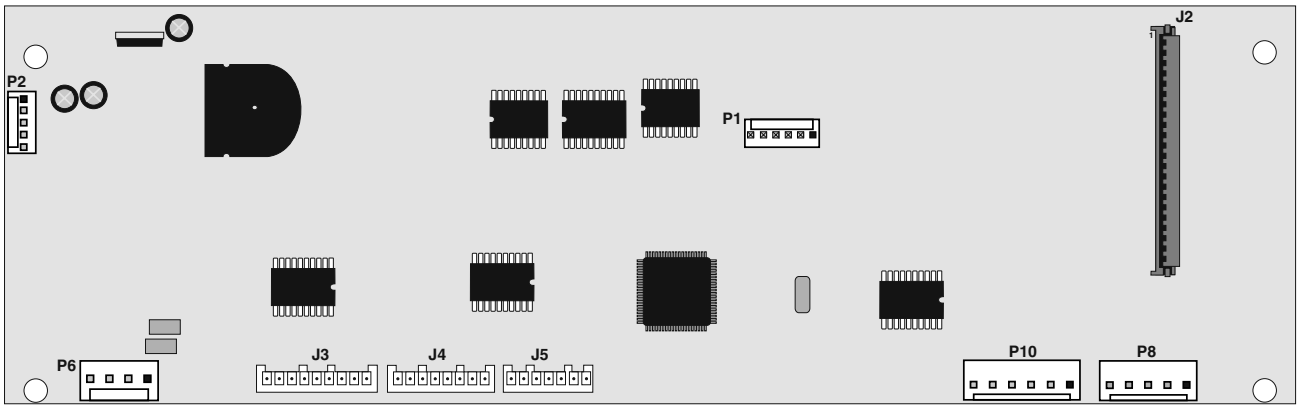
1. This unit includes an EOC - Relay Board and an EOC - Display Board.
2. The included board is not field repairable.
3. The oven temperature can be calibrated, see Use and Care Manual.
4. The ■ pin on board connectors indicates pin number 1.

## DATA SHEET ABBREVIATIONS AND TERMINOLOGY

EOC : Electronic Oven Control
LED : Light-Emitting Diode
MDL : Motor Door Latch
DLB : Double Line Break
RTD : Resistance Temperature Detector / Oven Probe

## ILLUSTRATION OF OVEN CONTROLS

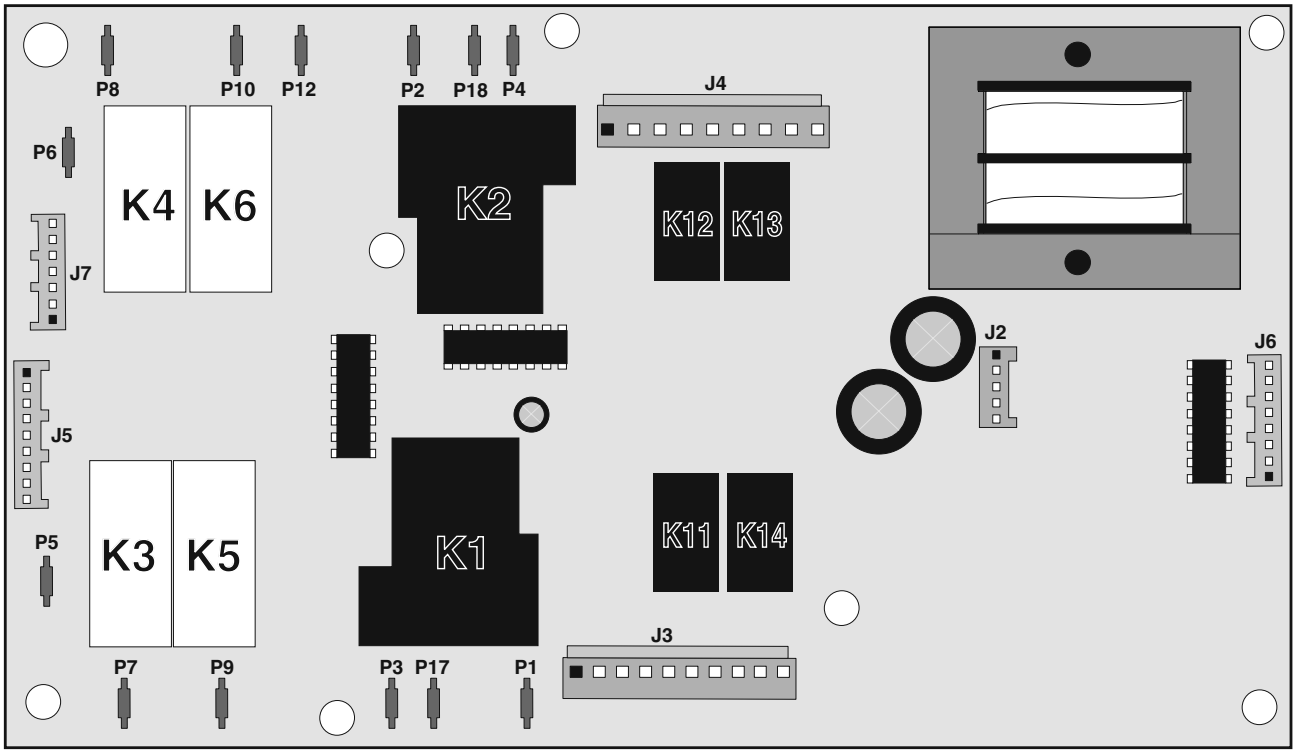

## ELECTRONIC OVEN CONTROL (EOC) - DISPLAY BOARD




**Display Board Legend:**

**J2** Keyboard connection.
**P1** Micro programming (not used).
**P2** DC power input.
**J3** Relays control outputs (bake & broil elements, light, MDL, DLB) for upper oven.
**J4** Relays control output (relay PWM).
**J5** Relays control outputs (bake & broil elements, light, MDL, DLB) for lower oven.
**P6** Temperature probe inputs.
**P8** Door switch and MDL switch (some models) for upper oven.
**P10** Door switch and MDL switch for lower oven.

# ELECTRONIC OVEN CONTROL (EOC) - RELAY BOARD




**Relay Board Legend:**

**P1** Double line break (L2 out), upper oven.
**P2** Double line break (L2 out), lower oven.
**P3** L2 in, upper oven.
**P4** L2 in, lower oven.
**P5** L1, upper oven.
**P6** L1, lower oven.
**P7** Broil, upper oven.
**P8** Broil, lower oven.
**P9** Bake, upper oven.
**P10** Bake, lower oven.
**P12** Not used.
**P17** Not used.
**P18** Not used.

**K1** Double line break relay, upper oven.
**K2** Double line break relay, lower oven.
**K3** Broil relay, upper oven.
**K4** Broil relay, lower oven.
**K5** Bake relay, upper oven.
**K6** Bake relay, lower oven.
**K11** Motor door latch relay, upper oven.
**K12** Motor door latch relay, lower oven.
**K13** Oven light relay, lower oven.
**K14** Oven light relay, upper oven.

**J2** DC power output to display board.
**J3** AC power outputs (motor door latch, light) for upper oven. L1 and Neutral input.
**J4** AC power outputs (motor door latch, light) for lower oven.
L1 and Neutral input.
**J5** Relays control inputs (bake & broil elements, light, motor door latch, DLB) for upper oven.
**J6** Relays control input (relay PWM)
**J7** Relays control inputs (bake & broil elements, light, motor door latch, DLB) for lower oven.

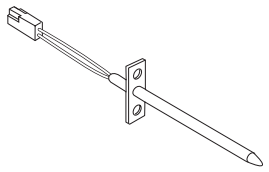
## RTD SCALE

| Temp. °F | Temp. °C | Resistance (ohms) |
|---|---|---|
| 32 ± 1.9 | 0.0 ± 1.1 | 1000 ± 4.0 |
| 75 ± 2.5 | 23.9 ± 1.4 | 1091 ± 5.3 |
| 250 ± 4.4 | 121.1 ± 2.4 | 1453 ± 8.9 |
| 350 ± 5.4 | 176.7 ± 3.0 | 1654 ± 10.8 |
| 450 ± 6.9 | 232.2 ± 3.8 | 1852 ± 13.5 |
| 550 ± 8.2 | 287.8 ± 4.6 | 2047 ± 15.8 |
| 650 ± 9.6 | 343.3 ± 5.3 | 2237 ± 18.5 |
| 900 ± 13.6 | 482.2 ± 7.6 | 2697 ± 24.4 |

## ELECTRICAL RATING

| | |
|---|---|
| Upper Oven Broil Element Wattage | 3000W / 2253W |
| Upper Oven Bake Element Wattage | 2200W / 1653W |
| Lower Oven Broil Element Wattage | 3400W / 2554W |
| Lower Oven Bake Element Wattage | 3000W / 2253W |
| KW Rating 240/208V | See serial plate |

**OVEN TEMPERATURE SENSOR**



## UPPER OVEN CIRCUIT ANALYSIS MATRIX

| | On Relay Board | | | | | On Display Board |
|---|---|---|---|---|---|---|
| | ELEMENTS | | | | | |
| | Bake P9 | Broil P7 | Oven Light J3-6 | Door Motor J3-5 | DLB L2 out P1 | Door Switch P8-3 / P8-5 |
| Bake | X | X | | | X | |
| Broil | | X | | | X | |
| Clean | X | X | | | X | |
| Locking / Unlocking | | | | X | | |
| Light | | | X | | | |
| Door Open | | | X | | | |
| Door Closed | | | | | | X |

## LOWER OVEN CIRCUIT ANALYSIS MATRIX

| | On Relay Board | | | | | On Display Board |
|---|---|---|---|---|---|---|
| | ELEMENTS | | | | | |
| | Bake P10 | Broil P8 | Oven Light J4-7 | Door Motor J4-6 | DLB L2 out P2 | Door Switch P10-3 / P10-6 |
| Bake | X | X | | | X | |
| Broil | | X | | | X | |
| Clean | X | X | | | X | |
| Locking / Unlocking | | | | X | | |
| Light | | | X | | | |
| Door Open | | | X | | | |
| Door Closed | | | | | | X |

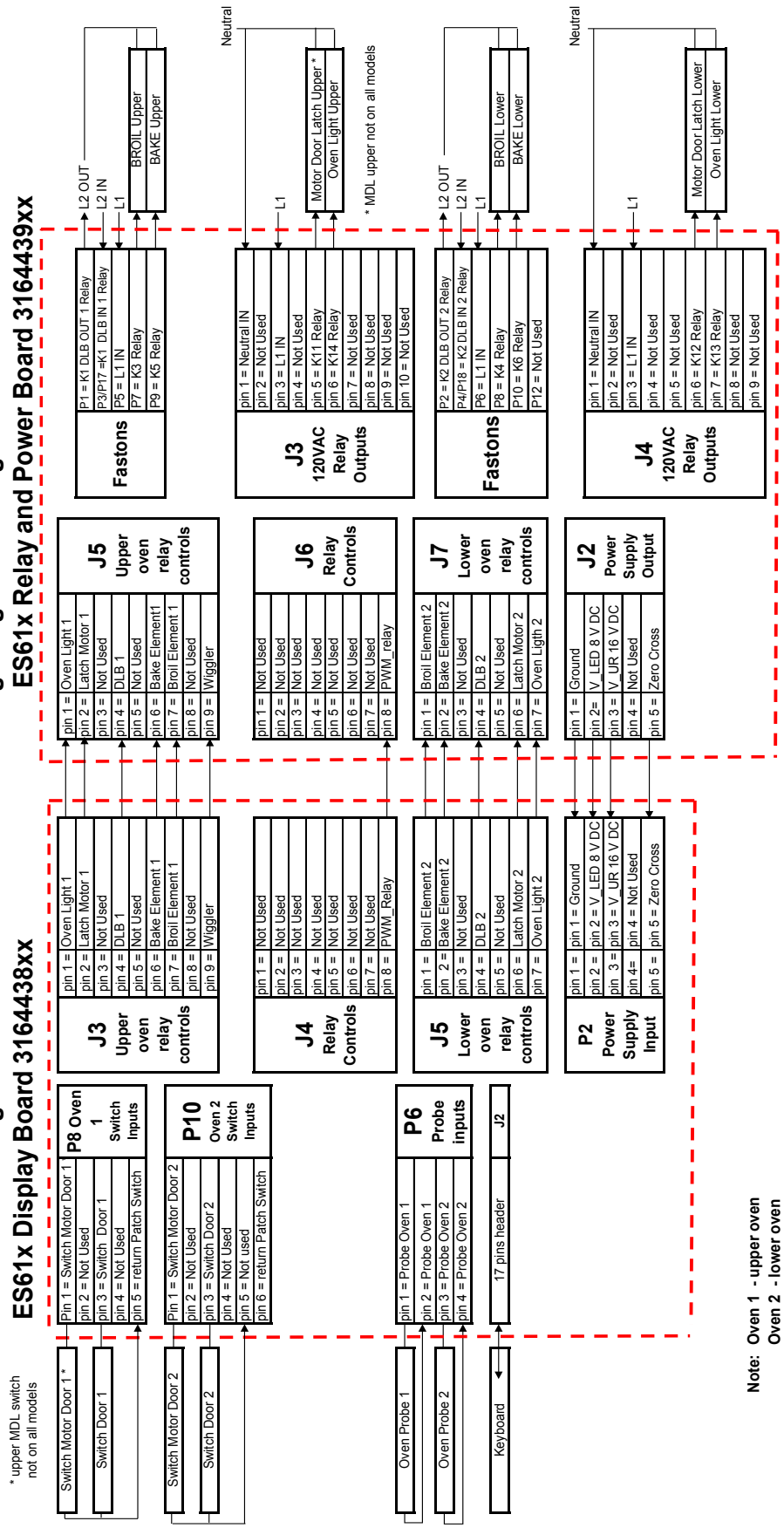
Relay will operate in this condition only

## ELECTRONIC OVEN CONTROL (EOC) FAULT CODE DESCRIPTIONS

**Note:** Generally speaking "F1x" implies a control failure, "F3x" an oven probe problem, and "F9x" a latch motor problem.

| Code | Condition / Cause | Suggested Corrective Action |
|---|---|---|
| F10 | Control has sensed a potential runaway oven condition. Control may have shorted relay, RTD sensor probe may have a gone bad. | - Check RTD sensor probe and replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when power is reapplied, replace the EOC-Display Board. |
| F11 | Shorted Key: a key has been detected as pressed (for a long period) will be considered a shorted key alarm and will terminate all oven activity. | - Press CANCEL key.<br>- If fault returns, replace the keyboard (membrane).<br>- If the problem persists, replace the EOC- Display Board. |
| F13 | Control's internal checksum may have become corrupted. | - Press CANCEL key. - Disconnect power, wait 10 seconds ad reapply power. If fault returns upon power-up, replace EOC-Display Board. |
| F14 | Misconnected keyboard cable. | - Disconnect power. Verify the flat cable connection between the keyboard membrane and the EOC- Display Board on J2.<br>- If the problem persists, replace the EOC- Display Board.<br>- If the connection is good but the problem persists, replace the keyboard (membrane switch). |
| F15 | Controller self check failed. | - Replace the EOC- Display Board. |
| F30 | Open RTD sensor probe/ wiring problem. Note: EOC may initially display an "F10", thinking a runaway condition exists. | - Check wiring in probe circuit for possible open condition.<br>- Check RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD sensor probe.<br>- Let the oven cool down and restart the function<br>- If the problem persists, replace the EOC- Display Board. |
| F31 | Shorted RTD sensor probe / wiring problem. | |
| F62 | Missing zero-cross signal. | - The 60Hz synchronization signal (zero-cross) is sent by the EOC-Relay Board to the EOC-Display Board. Verify first the connection between the EOC-Relay Board on connector J2 pin 5 and the EOC-Display Board on connector P2 pin 5 (check for continuity).<br>- If wiring is good, replace the EOC-Relay Board.<br>- If problem persists, replace the EOC- Display Board. |
| F90 | Door motor mechanism failure. The controller does not see the motor rotating. | - Press CANCEL key.<br>- If CANCEL key does not eliminate problem, turn off power for 30 seconds, then turn on power.<br>- Check wiring of Lock Motor, Lock Switch and Door Switch circuits.<br>- Unplug the lock motor from the board and apply power (L1) directly to the Lock Motor. If the motor does not rotate, replace Lock Motor Assembly.<br>- Check Lock Switch for proper operation (do they open and close, check with ohmmeter). The Lock Motor may be powered as in above step to open and close Lock Switch. If the Lock Switch is defective, replace Motor Lock Assembly.<br>- If all above steps fail to correct situation, replace the EOC-Display Board or the EOC- Relay Board in the event of a motor that does not rotate. |

# OVEN BLOCK DIAGRAM



## NOTES

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