**PURE Control® Alarm List**

**Applies to:**

1. EDR-750-2000, EDR+2500-6000, EZE-120-600, KTV-750-2000 operating on PURE Control software version 5.0.x.
2. EDR+8000-12000 operating on PURE Control software version 4.0.x.

Contact Fulton Technical Service for the alarm list associated with other software versions.

| Index | Error | Diag. | Name | Details | Troubleshooting |
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| **0** | 2 | 1 | Lightoff Flame Failure | No flame at the end of Safety Time 1, TSA1. This timer is P227 or P327, the overlap of the spark and either the pilot valve or the direct spark to main fuel valve(s). | Inspect gas valves, inspect flame sensor, inspect ignition or pilot, verify P0 combustion settings. Verify P186:01 is set to 30. |
| **1** | 2 | 2 | Pilot to Main Flame Failure | No flame at the end of Safety Time 2, TSA2. This timer is P231 or P331, the overlap of the pilot and the main fuel valve(s). | Inspect gas valves, inspect flame sensor, inspect pilot, verify P0 combustion settings. Verify P186:01 is set to 30. |
| **2** | 2 | 4 | Lightoff Flame Failure | No flame at the end of safety time 1, TSA1 (Only applies to LMV3 software <=V02.00). | This legacy alarm is not applicable to current flame safeguard controls, contact your Fulton Representative for support. |
| **3** | 3 | 0 | Air Switch Not Made | The air switch input was not made when expected. | Verify the blower starts in phase 78 and the air switch setpoint is set appropriately. |
| **4** | 3 | 1 | Air Switch On | The air switch input was made when it should have been deenergized. | Verify the blower turns off in phase 78 and the air switch setpoint is set appropriately. |
| **5** | 3 | 2 | Evaluation of Air Switch | An evaluation air pressure switch error has occurred on the LMV. | Correct setting of P235 or P335. Deactivation of air pressure switch during operation is only permitted for pneumatic operation. |
| **6** | 3 | 4 | Prevention of Startup | The air switch input is energized, preventing the LMV3 from starting. | Inspect the air switch and wiring. |
| **7** | 3 | 20 | Prevention of Startup | The air switch and combustion pressure inputs are energized, preventing the LMV3 from starting. | Inspect the air switch and combustion pressure switch. |
| **8** | 3 | 68 | Prevention of Startup | The air switch and proof of closure inputs are energized, preventing the LMV3 from starting. | Inspect the air switch and gas valve proof of closure. |
| **9** | 3 | 84 | Prevention of Startup | The air switch, combustion pressure and proof of closure inputs are energized, preventing the LMV from starting. | Inspect the air switch, combustion pressure switch and gas valve proof of closure. |
| **10** | 4 | 0 | Extraneous Light at Startup | A flame signal was present when unexpected during prepurge burner startup phase. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. |
| **11** | 4 | 1 | Extraneous Light at Shutdown | A flame signal was present when unexpected during postpurge burner shutdown phase. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. |

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| **12** | 4 | 2 | Extraneous Light at Standby | A call for heat was received but the boiler will not start due to the presence of a flame signal when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. |
| **13** | 4 | 6 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal and air switch when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect the air switch. |
| **14** | 4 | 18 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal and combustion pressure when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect combustion pressure switch. |
| **15** | 4 | 22 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal, air switch and combustion pressure when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect the air switch and combustion pressure switch. |
| **16** | 4 | 66 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal and gas valve proof of closure when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect the gas valve proof of closure. |
| **17** | 4 | 70 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal, air switch and gas valve proof of closure when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect the air switch and gas valve proof of closure. |
| **18** | 4 | 82 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal, combustion pressure and gas valve proof of closure when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect the combustion pressure switch and gas valve proof of closure. |
| **19** | 4 | 86 | Extraneous Light | A call for heat was received but the boiler will not start due to the presence of a flame signal, air switch, combustion pressure and gas valve proof of closure when unexpected. | Check P954 for a flame signal. Ensure light is not reaching the sight glass or scanner. Verify controls voltage does not exceed 125VAC. If problem repeats, replace the scanner and the thermal barrier heat block. Inspect the air switch, combustion pressure switch and gas valve proof of closure. |
| **20** | 7 | 0 | Loss of Flame | Loss of main burner flame has occurred. | Verify P197 is set to 1. Verify P186:01 is set to 30. Check and adjust combustion. |
| **21** | 7 | 3 | Loss of Flame | Loss of main burner flame has occured (Only applies to LMV3 software <=V02.00). | This legacy alarm is not applicable to current flame safeguard controls, contact your Fulton Representative for support. |
| **22** | 7 | 0 | Loss of Flame | Loss of flame through TUV test (flame failure test). | Consult the factory for support. |

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| **23** | 12 | 0 | Gas Valve Proving LGP Failed | The downstream gas valve failed valve proving when using the low gas pressure switch between the two gas valves, this occurs when P236 = 2. | Check if the valve on the upstream incoming gas side is leaking. If leaking, replace the valve. Check wiring and open-circuit. |
| **24** | 12 | 1 | Gas Valve Proving LGP Failed | The upstream gas valve failed valve proving when using the low gas pressure switch between the two gas valves, this occurs when P236 = 2. | Check if the valve on the downstream burner side is leaking. If leaking, replace the valve. Check if pressure switch for the leakage test is closed when there is gas pressure. Check wiring and short-circuit. |
| **25** | 12 | 2 | Gas Valve Proving Not Assigned | Valve proving is activated, but no input is assigned for the valve proving switch. | Check parameters 238 and 241. |
| **26** | 12 | 3 | Gas Valve Proving Not Assigned | Valve proving is activated, but no input is assigned for the valve proving switch. | Check parameters 236 and 237. |
| **27** | 12 | 4 | Gas Valve Proving Not Possible | Valve proving is activated, but multiple inputs are assigned for the valve proving switch. | Set parameter 237 to PSmax or POC. |
| **28** | 12 | 5 | Gas Valve Proving Not Possible | Valve proving is activated, but multiple inputs are assigned for the valve proving switch. | Check parameters 236 and 237. |
| **29** | 12 | 81 | Gas Valve Proving Failed | The upstream gas valve failed valve proving. | Check if the valve on the upstream incoming gas side is leaking. If leaking, replace the valve. Check wiring and open-circuit. |
| **30** | 12 | 83 | Gas Valve Proving Failed | The downstream gas valve failed valve proving. | Check if the valve on the downstream burner side is leaking. If leaking, replace the valve. Check if pressure switch for the leakage test is closed when there is gas pressure. Check wiring and short-circuit. |
| **31** | 14 | 0 | Proof of Closure Open | The Proof of Closure (POC) input X5-02.2 was open when it should be closed. | Check if the valve POC contact is closed when the valve is deenergized. Inspect wiring to the gas valve(s) and LMV3. If POC is not used, change P237. |
| **32** | 14 | 1 | Proof of Closure Closed | The Proof of Closure (POC) input X5-02.2 was closed when it should be open. | With the manual shutoff valves closed, check if the valve POC contact is open when the gas valve is enabled. Inspect wiring to the gas valve(s) and LMV3. If POC is not used, change P237. |
| **33** | 14 | 64 | POC Open Prevention of Startup | The Proof of Closure (POC) input X5-02.2 was open when a call for heat was received, preventing startup. | Check if the valve POC contact is closed when the valve is deenergized. Inspect wiring to the gas valve(s) and LMV3. If POC is not used, change P237. |
| **34** | 18 | 0 | Speed Air Switch Off | When using a speed-dependent air pressure switch, the switch must be closed anytime the VSD speed is greater than the setting of P671. | Check P671 Air pressure switch (X5-02) must be HIGH above parameterized on-level (speed). |
| **35** | 18 | 1 | Speed Air Switch On | When using a speed-dependent air pressure switch, the switch must be open anytime the VSD speed is less than the setting of P670. | Check P670 Air pressure switch (X5-02) must be LOW below parameterized off-level (speed). |
| **36** | 18 | 128 | Invalid Air Switch Parameter | The speed-dependent air pressure switch parameters are incorrectly configured. | Check the setting of the speed threshold, P671 must be greater than P670. |
| **37** | 19 | 0 | Combustion Pressure Switch | No minimum combustion pressure. | Check wiring and open-circuit. |
| **38** | 19 | 1 | Combustion Pressure Switch | Combustion pressure not permitted. | Check if pressure switch is closed without combustion pressure. Check wiring and short-circuit. |

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| **39** | 19 | 16 | Combustion Pressure Switch | Combustion pressure prevention of startup. | Check if pressure switch is closed without combustion pressure. Check wiring and short-circuit. |
| **40** | 19 | 80 | Combustion Pressure Switch | Combustion pressure and gas valve proof of closure prevention of startup. | Check if pressure switch is closed without combustion pressure. Check wiring and short-circuit. |
| **41** | 20 | 0 | Low Gas Pressure | The low gas pressure switch (input X5-01.2) or low oil pressure switch (input X9-04.2) opened. | Ensure manual shutoff valves are open. Use a manometer to measure gas pressures at idle through high fire. Verify the setpoint of the switch(es). Inspect wiring at the switch(es) and LMV input X5-01.02 / X9-04.2. |
| **42** | 20 | 1 | Low Gas Prevention of Startup | The low gas pressure switch (input X5-01.2) was not made by the end of phase 22, preventing startup. | Ensure manual shutoff valves are open. Use a manometer to measure gas pressures during startup. Verify the setpoint of the switch(es). Inspect wiring at the switch(es) and LMV input X5-01.2. |
| **43** | 21 | 0 | High Gas Pressure | The high gas or oil pressure switch (input X5-02.2) opened. For legacy LMV software <=V02.00 only this can be a POC fault if P237 is set to 2. | Ensure manual shutoff valves are open. Use a manometer to measure gas pressures during idle through high fire. Verify gas servo position(s). Verify the setpoint of the switch(es). Inspect wiring at the switch(es) and LMV input X5-02.2. |
| **44** | 21 | 1 | POC Closed | Proof of Closure (POC) closed (Only applies to LMV3 software <=V02.00). | This legacy alarm is not applicable to current flame safeguard controls, contact your Fulton Representative for support. |
| **45** | 21 | 64 | POC Open Prevention of Startup | Proof of Closure (POC) open preventing the boiler from starting (Only applies to LMV3 software <=V02.00). | This legacy alarm is not applicable to current flame safeguard controls, contact your Fulton Representative for support. |
| **46** | 22 | 0 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **47** | 22 | 1 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **48** | 22 | 3 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open and extraneous light, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **49** | 22 | 5 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open and air switch, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **50** | 22 | 17 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open and combustion pressure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **51** | 22 | 19 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, extraneous light and combustion pressure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **52** | 22 | 21 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, air switch and combustion pressure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |

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| **53** | 22 | 23 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, extraneous light, air switch and combustion pressure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **54** | 22 | 65 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **55** | 22 | 67 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, extraneous light and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **56** | 22 | 69 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, air switch and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **57** | 22 | 71 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, extraneous light, air switch and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **58** | 22 | 81 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, combustion pressure and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **59** | 22 | 83 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, extraneous light, combustion pressure and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **60** | 22 | 85 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, air switch, combustion pressure and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **61** | 22 | 87 | Safety Loop / Burner Flange | Safety loop / burner flange LMV input X3-03.1 is open, extraneous light, air switch, combustion pressure and gas valve proof of closure, startup is prevented. | Inspect burner flange safety loop jumper from X3-03.2 to X3-03.1, or where switches are wired in series resolve the condition that caused the switch to open and result the fault. |
| **62** | 23 | 0 | Low Gas Pressure | The low gas pressure switch (LMV input X5-01.2) opened. | Ensure manual shutoff valves are open. Use a manometer to measure gas pressures at idle through high fire. Verify the setpoint of the switch(es). Inspect wiring at the switch(es) and LMV input X5-01.02. |
| **63** | 23 | 1 | Low Gas Prevention of Startup | The low gas pressure switch (LMV input X5-01.2) was not made by the end of phase 38, preventing startup. | Ensure manual shutoff valves are open. Use a manometer to measure gas pressures at idle through high fire. Verify the setpoint of the switch(es). Inspect wiring at the switch(es) and LMV input X5-01.02. |
| **64** | 23 | 2 | Heavy Oil Direct Start | While firing heavy oil, the heavy oil direct start input (LMV X9-04.2) was deenergized. | Check the setting of P286, and verify the wiring of the heavy oil direct start is correct. |
| **65** | 50 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |

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| **66** | 51 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **67** | 55 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **68** | 56 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **69** | 57 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **70** | 58 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **71** | 60 | 1 | No Valid Load Controller | A 4-20mA signal was not present on LMV terminal X64.1, X64.2 while P204 is set to 1. This alarm commonly occurs and is expected after a power cycle due to controls booting up and having not yet established communication. | This error should not result in a manual lockout condition, boiler operation should automatically resume when the boot up process is completed. Allow time for communication to be reestablished. |
| **72** | 60 | 2 | No Valid Load Controller | A 4-20mA signal was not present on LMV terminal X64.1, X64.2 while P204 is set to 0, low fire hold. This alarm commonly occurs and is expected after a power cycle due to controls booting up and having not yet established communication. | This error should not result in a manual lockout condition, boiler operation should automatically resume when the boot up process is completed. Allow time for communication to be reestablished. |
| **73** | 61 | 0 | Changing to Primary Fuel | This is not a fault condition, the LMV is currently in the process of changing to the primary fuel (fuel 0). | This is not a fault condition, no action is required. |
| **74** | 61 | 1 | Changing to Secondary Fuel | This is not a fault condition, the LMV is currently in the process of changing to the secondary fuel (fuel 1). | This is not a fault condition, no action is required. |
| **75** | 62 | 0 | No Fuel Selected | Neither fuel 0 nor fuel 1 is selected on the LMV. | Check wiring to fuel 0 (X5-03.2) and fuel 1 (X5-03.3), one must be powered, verify fuel curves are configured. |
| **76** | 62 | 1 | Fuel Choice Error | Different fuel choice fault on the LMV. | Cycle power to the boiler. If error occurs continuously contact your Fulton Representative for support. |
| **77** | 62 | 2 | Fuel Signal Error | Different fuel signal fault on the LMV. | Cycle power to the boiler. If error occurs continuously contact your Fulton Representative for support. |
| **78** | 62 | 3 | Both Fuels Selected | Both fuel 0 and fuel 1 are selected on the LMV. | Check wiring to fuel 0 (X5-03.2) and fuel 1 (X5-03.3), only one must be powered, verify fuel curves are configured. |
| **79** | 65 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |

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| **80** | 66 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **81** | 67 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **82** | 70 | 23 | Fuel-Air Output Invalid | The fuel-air curve position calculation modulating outputs are invalid. | Check LMV curve points to see if correct values have been entered for all actuators and the VSD. Readjust the ratio curve if required. |
| **83** | 70 | 26 | Fuel-Air Curve Undefined | The fuel-air curve position calculation modulating outputs are undefined. | Check LMV curve points to see if correct values have been entered for all actuators and the VSD. Readjust the ratio curve if required. |
| **84** | 71 | 0 | Home Position Undefined | The home position for one of the actuators or VSD is undefined. | Check the settings of index 00 for P501 through P506. Change any settings that are undefined and reset the fault. |
| **85** | 71 | 1 | Prepurge Position Undefined | The prepurge position for one of the actuators or VSD is undefined. | Check the settings of index 01 for P501 through P506. Change any settings that are undefined and reset the fault. |
| **86** | 71 | 2 | Postpurge Position Undefined | The postpurge position for one of the actuators or VSD is undefined. | Check the settings of index 02 for P501 through P506. Change any settings that are undefined and reset the fault. |
| **87** | 71 | 3 | Ignition Position Undefined | The ignition position for one of the actuators or VSD is undefined. | Enter commissioning mode (P400) and check the settings for P0. Change any settings that are undefined and reset the fault. |
| **88** | 72 | 0 | Internal Fuel-Air Error | An internal error occurred for the fuel-air ratio control. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **89** | 73 | 23 | Fuel-Air Multistep Invalid | The fuel-air curve position calculation multistep outputs are invalid. | Check LMV curve points to see if correct values have been entered for all actuators and the VSD. Readjust the ratio curve if required. |
| **90** | 73 | 26 | Fuel-Air Multistep Undefined | The fuel-air curve position calculation multistep outputs are undefined. | Check LMV curve points to see if correct values have been entered for all actuators and the VSD. Readjust the ratio curve if required. |
| **91** | 75 | 0 | Data Clocking Check Error | An internal error occurred for the fuel-air ratio control data clocking check. | Set P123:01 and P123:02 to 1 and reset the fault. If the fault persists and a variable speed blower is present, restandardize the VSD and reset the fault. If error occurs continuously contact your Fulton Representative for support. |
| **92** | 75 | 1 | Current Output Different | An internal error occurred for the fuel-air ratio control data clocking check. | Set P123:01 and P123:02 to 1 and reset the fault. If the fault persists and a variable speed blower is present, restandardize the VSD and reset the fault. If error occurs continuously contact your Fulton Representative for support. |
| **93** | 75 | 2 | Target Output Different | An internal error occurred for the fuel-air ratio control data clocking check. | Set P123:01 and P123:02 to 1 and reset the fault. If the fault persists and a variable speed blower is present, restandardize the VSD and reset the fault. If error occurs continuously contact your Fulton Representative for support. |
| **94** | 75 | 4 | Target Positions Different | An internal error occurred for the fuel-air ratio control data clocking check. | Set P123:01 and P123:02 to 1 and reset the fault. If the fault persists and a variable speed blower is present, restandardize the VSD and reset the fault. If error occurs continuously contact your Fulton Representative for support. |

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| **95** | 76 | 0 | Internal Fuel-Air Error | An internal error occurred for the fuel-air ratio control. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **96** | 80 | 1 | High RPM at Bottom VSD Speed | The LMV3 has decreased its signal to the VSD as much as possible and the motor RPM is still too high. | Increase VSD and LMV3 ramp times, increase VSD braking if possible, ensure the VSD and LMV3 are configured for the same analog signal type, restandardize the VSD and adjust combustion after restandardizing. |
| **97** | 80 | 2 | Low RPM at Top VSD Speed | The LMV3 has increased its signal to the VSD as much as possible and the motor RPM is still too low. | Increase VSD and LMV3 ramp times, check for filters or delays on the input signal to the VSD, verify the speed sensor installation position, ensure the VSD and LMV3 are configured for the same analog signal type, restandardize the VSD and adjust combustion after restandardizing. |
| **98** | 81 | 1 | Interrupt Speed Input | The LMV has detected an interruption on the speed input due to excessive electromagnetic interference. | Decrease the electrical noise on the speed sensor wires. If error occurs continuously contact your Fulton Representative for support. |
| **99** | 82 | 1 | Standardization Timeout | Standardization timed out because the VSD took too long to ramp down at the end of the standardization. | Either decrease the ramp down time in the VSD or increase the setting of P523. |
| **100** | 82 | 2 | Standardization Storage Error | Storage of standardized speed not successful. | Press the info button with any other button to cause a manual lockout, then reset the fault and attempt to standardize again. |
| **101** | 82 | 3 | Speed Sensor Not Detected | No pulses from the speed sensor were detected during standardization. | Verify motor is rotating, check the wiring between the speed sensor and LMV, check and adjust the gap between the speed wheel and sensor. The gap should be 2mm or about two turns away from the speed wheel. |
| **102** | 82 | 4 | Stable Speed Not Reached | Excessive speed variation, VSD ramp up time too long, or speed below minimum limit so a standardized speed could not be determined. | Decrease the ramp up time in the VSD or increase P522, check for filters or delays on the input signal to the VSD, verify the speed sensor installation position, ensure the VSD and LMV3 are configured for the same analog signal type. |
| **103** | 82 | 5 | Wrong Direction of Rotation | The blower motor direction of rotation is incorrect. | Inspect the motor direction of rotation, reverse if necessary, check the arrow on the speed wheel for the direction of rotation. |
| **104** | 82 | 6 | Invalid Speed Sensor Signals | The speed sensor signals are invalid. | Verify P643 is set correctly, for VSD with 3-phase motors this should be 0, for ECM DC blowers this should be 1. Check and adjust the gap between the speed wheel and sensor. The gap should be 2mm or about two turns away from the speed wheel. Check the wiring and reference ground of the speed sensor. |
| **105** | 82 | 7 | Invalid Standardized Speed | The standardized speed measured does not lie in the permissible range (650-14,000 RPM). | Check and adjust the gap between the speed wheel and sensor. The gap should be 2mm or about two turns away from the speed wheel. Check the wiring and reference ground of the speed sensor. |
| **106** | 82 | 15 | Standardization Speed Deviation | Standardization failed due to speed deviation. | Reset the fault and repeat the standardization. |
| **107** | 82 | 20 | Standardization Wrong Phase | Wrong phase of phase manager during standardization. | Standardization must be performed in standby, phase 12. |

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| **108** | 82 | 21 | Standardization Limit Error | The safety loop and/or burner flange circuits are open while attempting standardization. | Resolve limit issues, repeat standardization with safety loop closed. |
| **109** | 82 | 22 | Air Actuator Not Referenced | Typically caused by trying to standardize while the air actuator is currently referencing. | Wait for the actuator to finish referencing and attempt to standardize again. |
| **110** | 82 | 23 | VSD Deactivated | The VSD was not activated when attempting standardization. | The VSD must be activated before standardization can be performed. Set parameter 542 to a 1 and attempt to standardize again. |
| **111** | 82 | 24 | No Valid Operation Mode | No fuel was selected when attempting standardization. | Select a fuel train via parameter 201 (fuel 0) or 301 (fuel 1), then attempt to standardize again. |
| **112** | 82 | 25 | Standardization Pneumatic Error | Standardization cannot be performed when using a pneumatic fuel train. | Select a different fuel train via parameter 201 (fuel 0) or 301 (fuel 1), then attempt to standardize again. |
| **113** | 82 | 128 | VSD Not Standardized | A call for heat was received and the VSD is activate with P542 set to 1, but no standardization has been performed. | Perform a standardization by setting P641 to a 1 while in standby phase 12. |
| **114** | 82 | 255 | Standardized Speed Unavailable | No standardized VSD speed available. | Perform a standardization by setting P641 to a 1 while in standby phase 12. |
| **115** | 83 | 0 | Air Comp VSD Speed Error | A VSD speed error occurred while the air compensation trim function was active. | Verify minimum separation between combustion points, the curve must not be flat. Verify current boiler software is installed and properly configured. |
| **116** | 83 | 1 | VSD Lower Range Limitation | Lower control range limitation of control. | Increase VSD and LMV3 ramp times, increase VSD braking if possible, ensure the VSD and LMV3 are configured for the same analog signal type, restandardize the VSD and adjust combustion after restandardizing. |
| **117** | 83 | 2 | VSD Upper Range Limitation | Upper control range limitation of control. | Increase VSD and LMV3 ramp times, check for filters or delays on the input signal to the VSD, verify the speed sensor installation position, ensure the VSD and LMV3 are configured for the same analog signal type, restandardize the VSD and adjust combustion after restandardizing. |
| **118** | 83 | 4 | VSD Disturbance Pulses | Interruption via disturbance pulses. | Increase VSD and LMV3 ramp times, increase VSD braking if possible, ensure the VSD and LMV3 are configured for the same analog signal type, restandardize the VSD and adjust combustion after restandardizing. |
| **119** | 83 | 8 | VSD Curve Too Steep | VSD curve too steep in terms of ramp speed. | The difference in position between two adjacent curve points is too large. Either increase the setting of P544, decrease the setting of P522 and P523, decrease the distance between curve points, or decrease P647. |
| **120** | 83 | 16 | VSD Speed Signal Interruption | No VSD speed signal was detected. | Ensure the motor is rotating, if not, inspect the wiring. If using a VSD turn the motor by hand to ensure the LED on the speed sensor lights up when it sees the speed wheel, if it does not, decrease the gap and inspect the wiring. |

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| **121** | 83 | 32 | Excessive VSD Speed Deviation | The blower motor speed was more than 10% different than the anticipated speed for more than 1 second. | Check ramp times of the VSD and LMV, increase if necessary. The ramp times of the LMV should be at least 20% longer than the ramp times in the VSD. Check the setting of P661. |
| **122** | 83 | 64 | VSD Below Minimum | The VSD speed is below minimum speed, phase dependent. | Ensure P669:01 (max) is set higher than 669:00 (min) and ensure P663 is set higher than P662. Verify absolute speed P935 detected by the LMV. |
| **123** | 83 | 128 | VSD Exceeds Maximum | The VSD speed is exceeds maximum speed, phase dependent. | Ensure P226/266,326,366 is set higher than P665, ensure P669:01 (max) is set higher than P669:00 (min), ensure P663 is set higher than P662. Verify absolute speed P935 detected by the LMV. |
| **124** | 83 | 255 | Failed Force Travel Test | If the LMV3 remains at the same fire rate for an extended period of time, a minimal load change is forced, and the corresponding feedback from the PWM blower is checked. If this fault occurs, the PWM blower speed change was insufficient in response to the load change. | Verify minimum separation between combustion points, the curve must not be flat. Verify current boiler software is installed and properly configured. |
| **125** | 84 | 1 | VSD Curve Too Steep | VSD curve too steep in terms of ramp speed. | The difference in position between two adjacent curve points is too large. Either increase the setting of P544, decrease the setting of P522 and P523, decrease the distance between curve points, or decrease P647. |
| **126** | 84 | 2 | Fuel Curve Too Steep | Fuel curve too steep in terms of ramp speed. | The difference in position between two adjacent curve points is too large. Either increase the setting of P544, or decrease the distance between curve points. |
| **127** | 84 | 3 | Air Curve Too Steep | Air curve too steep in terms of ramp speed. | The difference in position between two adjacent curve points is too large. Either increase the setting of P544, or decrease the distance between curve points. |
| **128** | 85 | 0 | Referencing Error Fuel | SQM33 actuators must travel outside of their 0-90° operating range before starting the burner in order to reference their position. This fault means that the fuel actuator referencing was unsuccessful. | Check the setting of P601 (fuel 0) and 608 (fuel 1) index 00. Verify the actuator is not binding when trying to reference, ensure that overstroking below 0° or above 90° is possible. Check the setting of P613 (fuel 0) and 614 (fuel 1) to ensure the actuator type is set correctly. Verify the fuel actuator is plugged into the correct terminal on the LMV3. |
| **129** | 85 | 1 | Referencing Error Air | SQM33 actuators must travel outside of their 0-90° operating range before starting the burner in order to reference their position. This fault means that the air actuator referencing was unsuccessful. | Check the setting of P601 (fuel 0) and 608 (fuel 1) index 01. Verify the air actuator is not binding when trying to reference, ensure that overstroking below 0° or above 90° is possible. Check the setting of P613 (fuel 0) and 614 (fuel 1) to ensure the actuator type is set correctly. Verify the air actuator is plugged into the correct terminal on the LMV3. |
| **130** | 85 | 128 | Referencing Error Change | SQM33 actuators must travel outside of their 0-90° operating range before starting the burner in order to reference their position. This fault means that the actuator referencing was unsuccessful. | Verify the air actuator is not binding when trying to reference, ensure that overstroking below 0° or above 90° is possible. Check the setting of P613 (fuel 0) and 614 (fuel 1) to ensure the actuator type is set correctly. Verify the air actuator is plugged into the correct terminal on the LMV3. |

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| **131** | 86 | 0 | Fuel Position Error | An error occurred pertaining to the fuel actuator. | Verify that the valve connected to the fuel actuator is not bound. The coupling may be disconnected to check actuator movement. |
| **132** | 86 | 1 | Fuel Actuator Interruption | Fuel actuator line interruption. | Check the wiring between the fuel actuator and LMV3 terminal X54. |
| **133** | 86 | 8 | Fuel Curve Too Steep | Fuel curve too steep in terms of ramp speed. | The difference in position between two adjacent curve points is too large. Either increase the setting of P544, or decrease the distance between curve points. |
| **134** | 86 | 16 | Fuel Step Deviation | A step deviation occurred in comparison with the last reference indicating the fuel actuator was bound. | Check the setting of P613:00 (fuel 0) and P614 (fuel 1) to ensure the actuator type is set correctly. Check to see if the actuator is bound somewhere along its working range, this can be done by changing the home position of the actuator in standby (no alarm). |
| **135** | 87 | 0 | Air Position Error | An error occurred pertaining to the air actuator. | Verify that the valve or damper connected to the air actuator is not bound. The coupling may be disconnected to check actuator movement. |
| **136** | 87 | 1 | Air Actuator Interruption | Air actuator line interruption. | Check the wiring between the fuel actuator and LMV3 terminal X54. |
| **137** | 87 | 8 | Air Curve Too Steep | Air curve too steep in terms of ramp speed. | The difference in position between two adjacent curve points is too large. Either increase the setting of P544, or decrease the distance between curve points. |
| **138** | 87 | 16 | Air Step Deviation | A step deviation occurred in comparison with the last reference indicating the air actuator was bound. | Check the setting of P613:01 to ensure the actuator type is set correctly. Check to see if the actuator is bound somewhere along its working range, this can be done by changing the home position of the actuator in standby (no alarm). |
| **139** | 90 | 0 | Internal Error | Internal error basic unit has occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **140** | 91 | 0 | Internal Error | Internal error basic unit has occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **141** | 93 | 0 | Flame Signal Acquisition Error | A short-circuit was detected to the QRB flame detector. | Inspect the wiring to the QRB flame detector. |
| **142** | 95 | 0 | Supervision Relay Error | Voltage feedback was detected on a Normally Open (NO) LMV contact. | Check for voltage feedback on the respective Normally Open (NO) contact. Resolve the wiring error or defective component causing the voltage feedback and reset the fault. |
| **144** | 96 | 0 | Supervision Relay Error | Relay contacts have welded on the LMV. | Remove the wire from fan output terminal X3-05.1 and perform the following two tests: With power connected to the LMV3 and the LMV3 in standby, ensure there is no voltage on fan output X3-05.1. With no power connected to the LMV3, ensure there is no continuity between fan output X3-05.1 and neutral. If either test fails, replace the LMV3. If both tests pass, reset the fault. |

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| **146** | 97 | 0 | Supervision Relay Error | Safety relay contacts have welded or external power supply is fed to safety relay. | Remove the wire from fan output terminal X3-05.1 and perform the following two tests: With power connected to the LMV3 and the LMV3 in standby, ensure there is no voltage on fan output X3-05.1. With no power connected to the LMV3, ensure there is no continuity between fan output X3-05.1 and neutral. If either test fails, replace the LMV3. If both tests pass, reset the fault. |
| **145** | 98 | 0 | Supervision Relay Error | Relay did not pull in on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **147** | 99 | 0 | Internal Relay Control Error | An internal relay control error has occurred on the LMV. | On LMV software version V03.10, if this error occurs during standardization of the VSD, temporarily deactivate the alarm in the case of start prevention (set P210 = 0), reset the fault, and re-standardize. |
| **150** | 100 | 0 | Internal Relay Control Error | An internal relay control error has occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **151** | 105 | 0 | Internal Contact Sampling Error | Voltage remained present on an LMV output terminal 10 ms after the terminal was deenergized. | Check the wiring and connection to neutral for all connected switches, valves, ignition transformer. Check for inductive loads that can cause voltage to be present. |
| **155** | 106 | 0 | Internal Contact Error | An internal contact request error occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **156** | 107 | 0 | Internal Contact Error | An internal contact request error occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **157** | 108 | 0 | Internal Contact Error | An internal contact request error occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **158** | 110 | 0 | Internal Voltage Error | An internal voltage monitor test error occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **159** | 111 | 0 | Power Undervoltage | The mains control voltage to the LMV is too low. The mains voltage must be within 102 to 132 VAC for LMV operation. For optimal operation it is recommended controls voltage does not exceed 125VAC. | Inspect the controls voltage to the LMV, correct issues to ensure voltage remains within specifications. If error occurs continuously, contact your local power utility provider for diagnostics. |
| **160** | 112 | 0 | Power Voltage Recovery | The power has recovered from an undervoltage condition. The mains voltage must be within 102 to 132 VAC for LMV operation. For optimal operation it is recommended controls voltage does not exceed 125VAC. | Inspect the controls voltage to the LMV, correct issues to ensure voltage remains within specifications. If error occurs continuously, contact your local power utility provider for diagnostics. |

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| **161** | 113 | 0 | Internal Voltage Supervision Error | An internal voltage supervision error has occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **162** | 115 | 0 | Internal System Counter Error | An internal system counter error has occurred on the LMV. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **163** | 116 | 0 | Maximum Lifetime Cycles | The LMV has exceeded its designed operational life of 250,000 startups, indicating that its internal components have surpassed their intended lifespan. | It is recommended to immediately replace the LMV. |
| **164** | 117 | 0 | LMV Lifetime Exceeded | The LMV has exceeded its operational lifetime, and further operation is no longer possible. | Replace the LMV. |
| **165** | 120 | 0 | Fuel Meter Input Error | The LMV has detected too many disturbance pulses at the fuel meter input. | Reduce electrical noise and reset the fault. |
| **166** | 121 | 0 | Internal EEPROM Error | The LMV non-volatile memory has experienced an internal error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. Restore the parameter set if possible. If error occurs continuously contact your Fulton Representative for support. |
| **167** | 122 | 0 | Internal EEPROM Error | The LMV non-volatile memory has experienced an internal error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. Restore the parameter set if possible. If error occurs continuously contact your Fulton Representative for support. |
| **168** | 123 | 0 | Internal EEPROM Error | The LMV non-volatile memory has experienced an internal error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. Restore the parameter set if possible. If error occurs continuously contact your Fulton Representative for support. |
| **169** | 124 | 0 | Internal EEPROM Error | The LMV non-volatile memory has experienced an internal error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. Restore the parameter set if possible. If error occurs continuously contact your Fulton Representative for support. |
| **170** | 125 | 0 | Internal EEPROM Read Error | The LMV non-volatile memory has experienced an internal read error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **171** | 126 | 0 | Internal EEPROM Write Error | The LMV non-volatile memory has experienced an internal write error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **172** | 127 | 0 | Internal EEPROM Error | The LMV non-volatile memory has experienced an internal error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. Restore the parameter set if possible. If error occurs continuously contact your Fulton Representative for support. |

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| **173** | 128 | 0 | Internal EEPROM Sync Error | The LMV non-volatile memory has experienced an internal synchronization during initialization error. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **174** | 129 | 0 | Internal EEPROM Command Error | The LMV non-volatile memory has experienced an internal command synchronization error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **175** | 130 | 0 | Internal EEPROM Timeout | The LMV non-volatile memory has experienced a timeout error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **176** | 131 | 0 | Internal EEPROM Abort | The LMV non-volatile memory has experienced a page on abort error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **177** | 132 | 0 | Internal EEPROM Initialization | The LMV non-volatile memory has experienced a register initialization error. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **178** | 133 | 0 | Internal EEPROM Request | The LMV non-volatile memory has experienced a request synchronization error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **179** | 134 | 0 | Internal EEPROM Request | The LMV non-volatile memory has experienced a request synchronization error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **180** | 135 | 0 | Internal EEPROM Request | The LMV non-volatile memory has experienced a request synchronization error. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |
| **181** | 136 | 1 | Restore Started | An LMV restore was started using P050. New LMVs require a reset after a restore. | Reset the LMV. |
| **201** | 146 | 1 | Modbus Timeout | Modbus communication to the LMV has been interrupted for longer than the setting of P142. | Check wiring, re-establish communication. |
| **202** | 146 | 2 | eBus Timeout | Modbus communication to the LMV has been interrupted for longer than the setting of P142. | Check wiring, re-establish communication. |
| **203** | 150 | 0 | Loss of Flame Test Error | A fault occurred during the loss of flame (TUV) test. | Acknowledge the alarm and reset. A power cycle may be required. Verify the last parameter that was viewed is set correctly. If error occurs continuously contact your Fulton Representative for support. |

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| **208** | 154 | 1 | Trim Function Start Prevention | An invalid 4-20 mA signal was detected on LMV input X64 preventing startup. | Check the wiring to terminal X64. Check the value of parameter 916. A value under -16% indicates <4 mA is being detected, while a value over 26% indicates >20 mA is being detected. |
| **209** | 154 | 2 | Trim Function Warning | An invalid 4-20 mA signal was detected on LMV input X64 which temporarily disabled the trim function. | Check the wiring to terminal X64. Check the value of parameter 916. A value under -16% indicates <4 mA is being detected, while a value over 26% indicates >20 mA is being detected. |
| **210** | 155 | 0 | Trim Function VSD Error | A VSD curve point is outside of the permissible range on the LMV. | Verify the VSD settings are within the following bounds for Fuel 0: P669:00 + P547 ≤ curve point ≤ P669:01 - P548, for Fuel 1: P669:00 + P567 ≤ curve point ≤ P669:01 - P568. |
| **214** | 156 | 0 | Lower Limit Trim Error | A trim limit was met for the maximum allowable time. The VSD trim signal was lower than allowed by the minimum trim limit (P547) for a time period longer than the maximum time allowed (P551). | Check settings of P547 and P551. |
| **215** | 156 | 1 | Upper Limit Trim Error | A trim limit was met for the maximum allowable time. The VSD trim signal was higher than allowed by the maximum trim limit (P548) for a time period longer than the maximum time allowed (P551). | Check settings of P548 and P551. |
| **216** | 156 | 10 | Fuel 1 Lower Limit Trim Error | A trim limit was met for the maximum allowable time. The VSD trim signal was lower than allowed by the minimum trim limit (P567) for a time period longer than the maximum time allowed (P571). | Check settings of P567 and P571. |
| **217** | 156 | 11 | Fuel 2 Upper Limit Trim Error | A trim limit was met for the maximum allowable time. The VSD trim signal was higher than allowed by the maximum trim limit (P568) for a time period longer than the maximum time allowed (P571). | Check settings of P568 and P571. |
| **218** | 157 | 0 | Analog Input Standby Error | A fault occurred on the LMV analog input test. If the analog input test is enabled, the LMV looks for 12mA to be present on terminal X64 during standby. | Check P916 to ensure that the input signal lies in the permissible range of -1% to +1%. Setting P530 to a value other than 2 or 4 disables the analog input test. |
| **219** | 157 | 1 | Analog Input Prepurge Error | A fault occurred on the LMV analog input test. If the analog input test is enabled, the LMV looks for 4mA to be present on terminal X64 during prepurge. | Check P916 to ensure that the input signal lies in the permissible range of -16% to -14%. Setting P530 to a value other than 2 or 4 disables the analog input test. |
| **220** | 165 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |

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| **221** | 166 | 0 | Internal Watchdog Reset Error | An internal LMV watchdog reset error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **222** | 167 | 1 | Manual Locking by Contact | This is not a fault condition. The LMV has been manually locked by contact. | This is not a fault condition, reset the LMV. |
| **223** | 167 | 2 | Manual Locking by AZL | This is not a fault condition. The LMV has been manually locked by the AZL23. | This is not a fault condition, reset the LMV. |
| **224** | 167 | 3 | Manual Locking by ACS | This is not a fault condition. The LMV has been manually locked by the ACS410 PC software. | This is not a fault condition, reset the LMV. |
| **225** | 167 | 8 | Manual Locking by AZL Timeout | During a curve adjustment on the AZL23 the timeout for menu operation has elapsed (P127), or communication between the LMV and AZL23 has been lost. | Re-establish communication and reset the fault. |
| **226** | 167 | 9 | Manual Locking by ACS Timeout | During a curve adjustment on the ACS410 PC software, communication between the LMV and the ACS410 software was lost for more than 30 seconds. | Re-establish communication and reset the fault. |
| **227** | 167 | 33 | Manual Locking by ACS Reset | A reset was made via the ACS410 PC software when the LMV was not in alarm. | Reset the LMV. |
| **228** | 168 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **229** | 169 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **230** | 170 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **231** | 171 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **233** | 201 | 0 | Undefined Parameter | The LMV cannot startup because a parameter is undefined. | Choose a valid selection for the undefined parameter and reset the fault. |
| **238** | 202 | 0 | Operating Mode Selection | An invalid selection of P201/301 occurred. | Make a valid selection of P201/301 and reset the fault. |
| **239** | 203 | 0 | Internal Error | An invalid selection of P201/301 occurred. | Make a valid selection of P201/301 and reset the fault. |
| **240** | 204 | 0 | Program Stop | Program stop, this is not a fault condition. | This is not a fault condition, no action is required. |
| **241** | 205 | 0 | Internal Error | An internal LMV error has occurred. | Acknowledge the alarm and reset. A power cycle may be required. If error occurs continuously contact your Fulton Representative for support. |
| **242** | 0 | 0 | Alarm Outside Parameters | An LMV alarm outside of typical parameters has occurred. Contact your Fulton Representative for | Contact your Fulton Representative for information regarding this alarm, be sure to provide the LMV error code and diagnostic code. |

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| **243** | 1001 | 0 | High Temperature Limit | The boiler outlet (supply) temperature exceeded maximum safety limit set at the Manual Reset High Limit Temperature Control (MRHL, HLTC) Aquastat. | Reset the Aquastat and Acknowledge the alarm, this is a manual reset device. To prevent repeat occurrences decrease setpoint temperature and/or increase the pump speed water flow rate. |
| **244** | 1002 | 0 | O2 Out of Range | The O2 sensor reading was out of the allowable range. | Check O2 sensor operation against a calibrated combustion analyzer. |
| **245** | 1003 | 0 | Auxiliary Low Water | The auxiliary (second) low water cutoff (LWCO) opened, reporting a low water condition in the boiler vessel. | Inspect boiler water level, verify operation of system automatic air vent, verify operation of the LWCO relay, remove the probe and clean. |
| **246** | 1004 | 0 | Operating Temperature Limit | The PLC has automatically stopped the boiler because the Operating Temperature Control (Aquastat) has tripped indicating a high temperature limit has been reached. | This is an automatically resetting device. |
| **247** | 1005 | 0 | Blocked Flue Gas Vent | The high flue gas vent exhaust backpressure switch was tripped. | Inspect the flue gas vent and termination for obstructions. Ensure rain caps are not used. Ensure condensate is draining properly from the flue. If the error repeats, use a manometer to verify the flue gas pressure at the exhaust connection of the boiler is within specifications during prepurge, ignition, up to high fire. |
| **248** | 1006 | 0 | Low Water | The primary low water cutoff (LWCO) opened, reporting a low water condition in the boiler vessel. | Inspect boiler water level, verify operation of system automatic air vent, verify operation of the LWCO relay, remove the probe and clean. |
| **249** | 1007 | 0 | Air Filter Plugged Switch | The air filter switch has reported that the filter is likely plugged. | Inspect the combustion air filter and replace as necessary. |
| **250** | 1008 | 0 | Air Filter Switch Error | The air filter switch did not change states as expected. | Check air filter switch to ensure proper functionality. |
| **251** | 1009 | 0 | VFD Speed Variation Error | The VFD speed varied from the commanded signal by more than 10Hz. | Verify that the VFD is not currently locked out, attempt to light the boiler again. If error persists contact your Fulton Representative for more information. |
| **252** | 1010 | 0 | Power Failure Recovery | Electrical power was interrupted and was restored. | If unexpected or unplanned, inspect electrical wiring. |
| **253** | 1011 | 0 | Low Flow Warning | The system provided insufficient water flow to the boiler and the boiler successfully entered a protection mode. | Verify pump operation, verify header temperature sensor placement, increase pump flow rates for smoother operation. |
| **254** | 1012 | 0 | BMS Communication Failure | Communication to the Building Management System (BMS) failed. | Verify Modbus configuration, Protonode where used, heartbeat signal and wiring connection. |
| **255** | 1013 | 0 | LMV Communication Failure | Communication to LMV Flame Safeguard failed. | Verify Modbus connection to Flame Safeguard and controller and restart the system. |
| **256** | 1014 | 0 | VFD Communication Failure | Communication to the VFD failed. | Verify Modbus connection to VFD and controller and restart the system. |

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| **257** | 1015 | 0 | O2 Communication Failure | Communication to the ALM O2 Board failed. | Verify Modbus connection to ALM and controller and restart the system. |
| **258** | 1016 | 0 | Outlet Sensor Error | Outlet temperature sensor signal error, this condition automatically clears when the error is resolved. | Verify sensor wiring and connection to controller, refer to electrical schematics. |
| **259** | 1017 | 0 | Inlet Sensor Error | Inlet temperature sensor signal error, this condition automatically clears when the error is resolved. | Verify sensor wiring and connection to controller, refer to electrical schematics. |
| **260** | 1018 | 0 | Combustion Air Sensor Error | Combustion air temperature sensor signal error, this condition automatically clears when the error is resolved. | Verify sensor wiring and connection to controller, refer to electrical schematics. |
| **261** | 1019 | 0 | Exhaust Sensor Error | Flue gas exhaust vent temperature sensor error, this condition automatically clears when the error is resolved. | Verify sensor wiring and connection to controller, refer to electrical schematics. |
| **262** | 1020 | 0 | System Supply Sensor Error | System supply header sensor error, boilers in Lead/Lag will revert to Local temperature controls until resolved. | Verify sensor wiring and connection to controller, refer to electrical schematics. |
| **263** | 1021 | 0 | Low Flow Event | The heating system provided insufficient water flow to the boiler, the boiler safely shut down to avert heat exchanger damage. | Verify pump operation and consider increasing flow rates before restarting the boiler. |
| **264** | 1022 | 0 | Battery Low Voltage | The controller battery voltage is low, the battery is required for proper functionality. | Replace with new 3 Volt CR2032 battery. |
| **265** | 1023 | 0 | Battery Dead or Missing | The controller battery has either run out of power or been removed, the battery is required for proper functionality. | Replace with new 3 Volt CR2032 battery. |
| **266** | 1024 | 0 | System Pump 1 Alarm | System pump 1 failed to make pressure within the allowed timeframe. | Verify configured settings, verify system pump 1 operation. |
| **267** | 1025 | 0 | System Pump 2 Alarm | System pump 2 failed to make pressure within the allowed timeframe. | Verify configured settings, verify system pump 2 operation. |
| **268** | 1026 | 0 | Blocked Condensate or HLTC | The high flue gas condensate (CSR) and/or high limit temperature control (MHRL, HLTC) has tripped. | Inspect to see which device tripped, the CSR or HLTC. Inspect the condensate drain and device wiring. Reset the Aquastat and Acknowledge the alarm, this is a manual reset device. To prevent repeat occurrences decrease setpoint temperature and/or increase the pump speed water flow rate. |
| **269** | 1027 | 0 | Backpressure Warning | The combustion chamber backpressure switch connected to Input 11 on the W1616R module was closed for more than five seconds. | Verify installation, operation and combustion parameters. |
| **270** | 1028 | 0 | Element Communication Failure | Modbus communication to the electric element module has failed. | Inspect wiring, check power, ensure module has been programmed using PC software. |
| **271** | 1029 | 0 | Customer Interlocks Timeout | Field wired customer interlock connection(s) failed to make on boiler startup. | Check field wiring to the interlock connections, inspect field provided device. |

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| **272** | 1030 | 0 | Customer Interlocks Lost in Run | Field wired customer interlock connection(s) were opened while the boiler was in operation. | Check field wiring to the interlock connections, inspect field provided device. |
| **273** | 1031 | 0 | Cabinet Temperature Sensor Error | A boiler cabinet air temperature sensor signal error has occurred. | Verify sensor wiring and connection to controller, refer to electrical schematics. |
| **274** | 1032 | 0 | High Cabinet Temperature | The boiler cabinet air temperature has exceeded 115 degrees F (46 degrees C). Excessive temperature can reduce the lifespan and reliability of controls components. | Ensure cabinet fans are operational, ensure filters are clean, ensure vents are not blocked. For outdoor installations it is recommended to shade the boiler from direct sunlight. |
| **275** | 1033 | 0 | Freeze Protection Stage 1 | Freeze Protection Stage 1 has been activated. Boiler pump will turn on if selected and in automatic mode, and boiler valve will open if in automatic mode. | This is not a fault condition, freeze protection stage 1 will disable when Outlet temperature meets or exceeds the stage 1 disable temperature |
| **276** | 1034 | 0 | Freeze Protection Stage 2 | Freeze Protection Stage 2 has been activated. Boiler will run at low fire. | This is not a fault condition, freeze protection stage 2 will disable when the Outlet temperature meets or exceeds the stage 2 disable temperature |
| **376** | 1134 | 0 | Isolation Valve Alarm *(8000-12000 only)* | Isolation Valve Failed to open within the allowed timeframe. | Check the valve wiring. Check that the valve is not in manual operation. |