

Systems Integration

Siemens Combustion Control Modbus Solution: LMV51

For Hot Water Boilers

Table 1. LMV51 Burner Controller for Hot Water Boilers Point Map, Application 4642.

Point	Type	Description	Range/Units ^{a b c}
1	LAO	Address	–
2	LAI	Application	–
3	LDI	Communication Error	Off/On
4	LAO	IP Address 1	–
5	LAO	IP Address 2	–
6	LAO	IP Address 3	–
7	LAO	IP Address 4	–
8	LAO	IP Port	–
9	LAO	Base Offset	–
10	LAO	Send Initial Value	–
11	LAI	Phase	See LMV51 and LMV52 Basic Documentation
12	LAI	Position of Currently Active Fuel Actuator	°
13	LAI	Position of Gas Actuator	°
14	LAI	Position of Oil Actuator	°
15	LAI	Position of Air Actuator	°
16	LAI	Position of Auxiliary Actuator 1	°
17	LAI	Position of Auxiliary Actuator 2	°
18	LAI	Position of Auxiliary Actuator 3	°
19	LAI	Manipulated Variable for Variable Speed Drive	%
20	LAI	Current Type Fuel	0=Gas 1=Oil
21	LAI	Current Output (Fire Rate)	%
22	LAI	Current Hot Water Setpoint	°F °C
23	LAI	Hot Water Temperature	°F °C

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Table 1. LMV51 Burner Controller for Hot Water Boilers Point Map, Application 4642. (continued)

Point	Type	Description	Range/Units ^{a b c}
24	LAI	Flame Signal	%
25	LAI	Current Fuel Throughput	–
26	LAI	Volume Unit of Gas	0=Cubic Meters 1=Cubic Feet
27	LAI	Volume Unit of Oil	0=Liters 1=Gallons
28	LAI	Unit of Temperature	0=Deg C 1=Deg F
29	LAI	Unit of Pressure	0=bar 1=psi
30	LAI	Sensor Selection	0=Pt100 1=Pt1000 2=Ni1000 3=Temperature Sensor 4=Pressure Sensor 5=Pt100Pt1000 6=Pt100Ni1000 7=No Sensor
31	LAI	Startup Counter Total	–
32	LAI	Hours Run Counter	hrs
33	LAI	Current Error: Error Code	–
34	LAI	Current Error: Diagnostic Code	–
35	LAI	Current Error: Error Class	–
36	LAI	Current Error: Error Phase	See <i>LMV51 and LMV52 Basic Documentation</i>
37	LAI	Temperature Limiter Off Threshold	°F °C
38	LAI	Supply Air Temperature	°F °C
39	LDI	Controller On/Off	Off/On
40	LDI	Fan Contactor Contact	Off/On
41	LDI	Fuel Selection Oil	Off/On
42	LDI	Fuel Selection Gas	Off/On
44	LDI	Maximum Oil Pressure Switch	Off/On
45	LDI	Minimum Oil Pressure Switch	Off/On
46	LDI	Pressure Valve Proving	Off/On
47	LDI	Safety Chain	Off/On
49	LDI	Maximum Gas Pressure Switch	Off/On
50	LDI	Minimum Gas Pressure Switch	Off/On
52	LDI	LP	Off/On

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Table 1. LMV51 Burner Controller for Hot Water Boilers Point Map, Application 4642. (continued)

Point	Type	Description	Range/Units ^{a b c}
53	LDI	Start Release Oil	Off/On
54	LDI	Heavy Oil Immediate Start	Off/On
55	LDI	Alarm	Off/On
59	LDI	Ignition	Off/On
60	LDI	Start Signal/DW Valve	Off/On
61	LDI	Fan	Off/On
62	LDI	Oil Pump/Magnetic Coupling	Off/On
63	LDI	Fuel Valve SV Oil	Off/On
64	LDI	Fuel Valve V1 Oil	Off/On
65	LDI	Fuel Valve V2 Oil	Off/On
66	LDI	Fuel Valve V3 Oil	Off/On
67	LDI	Fuel Valve SV Gas	Off/On
68	LDI	Fuel Valve V1 Gas	Off/On
69	LDI	Fuel Valve V2 Gas	Off/On
70	LDI	Fuel Valve PV Gas	Off/On
71	LAO	Operating Mode with Load Controller	0=ExtLR X5-03 1=IntLR 2=IntL Bus 3=IntLR X62 4=ExtLR X62 5=ExtLR Bus
72	LAI	Selection of Manual or Automatic Operation	0=Automatic 1=Burner On 2=Burner Off
73	LDO	Modbus Mode	Local/Remote
74	LAO	Modbus Downtime: Maximum Time with No Communication. When This Time Has Elapsed, Automatic Changeover from Remote to Local Takes Place.	sec
75	LAO	Operating Mode in Remote Mode	0=Auto 1=Remote On 2=Remote Off
76	LAO	External Setpoint W3	°F °C
77	LAO	Predefined Output Modulation/Multistage	0 to 100.0%=Full Modulation 100.1%=Stage1 100.2%=Stage2 100.3%=Stage3
78	LAO	Fuel Selection	0=Gas 1=Oil
79	LAO	Setpoint W1	°F °C

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Table 1. LMV51 Burner Controller for Hot Water Boilers Point Map, Application 4642. (continued)

Point	Type	Description	Range/Units ^{a b c}
80	LAO	Setpoint W2	°F °C
81	LAO	Weekday	0=Sunday 1=Monday 2=Tuesday 3=Wednesday 4=Thursday 5=Friday 6=Saturday
82	LAO	Year	yyyy
83	LAO	Month	mm
84	LAO	Day	dd
85	LAO	Hour	hr
86	LAO	Minute	min
87	LAO	Second	sec
89	LAO	Hours Run Gas (Can Be Reset by Setting This Point to Zero)	hrs
90	LAO	Hours Run Oil Stage 1 or Modulating (Can Be Reset by Setting This Point to Zero)	hrs
91	LAO	Hours Run Oil Stage 2 or Modulating (Can Be Reset by Setting This Point to Zero)	hrs
92	LAO	Hours Run Oil Stage 3 or Modulating (Can Be Reset by Setting This Point to Zero)	hrs
93	LAO	Hours Run Total (Can Be Reset by Setting This Point to Zero)	hrs
94	LAI	Hours Run Total	hrs
96	LAI	Hours Run Device Connected to Power (Read Only)	hrs
97	LAO	Startup Counter Gas (Can Be Reset by Setting This Point to Zero)	–
98	LAO	Startup Counter Oil (Can Be Reset by Setting This Point to Zero)	–
99	LAO	Startup Counter Total (Can Be Reset by Setting This Point to Zero)	–
100	LAI	Startup Counter Total	–
101	LAI	Fuel Volume Gas	cu ft m ³
102	LAI	Fuel Volume Oil	gal L
103	LAI	Number of Lockouts	–
104	LAI	Lockout History (Current Lockout) Error Code	–
105	LAI	Lockout History (Current Lockout) Error Diagnostics	–
106	LAI	Lockout History (Current Lockout) Error Class	–
107	LAI	Lockout History (Current Lockout) Error Phase	See LMV51 and LMV52 Basic Documentation

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Table 1. LMV51 Burner Controller for Hot Water Boilers Point Map, Application 4642. (continued)

Point	Type	Description	Range/Units^{a b c}
108	LAI	Lockout History (Current Lockout) Fuel	0=Gas 1=Oil
109	LAI	Lockout History (Current Lockout) Output	%
110	LAI	Lockout History (Current Lockout) Date: Year	yyyy
111	LAI	Lockout History (Current Lockout) Date: Month	mm
112	LAI	Lockout History (Current Lockout) Date: Day	dd
113	LAI	Lockout History (Current Lockout) Time of Day: Hours	hr
114	LAI	Lockout History (Current Lockout) Time of Day: Minutes	–
115	LAI	Lockout History (Current Lockout) Time of Day: Seconds	–
116	LAI	Lockout History (Current Lockout) Startup Counter Total	–
117	LAI	Lockout History (Current Lockout) Hours Run Total	–
118	LAI	Error History (Current Error) Error Code	–
119	LAI	Error History (Current Error) Error Diagnosis	–
120	LAI	Error History (Current Error) Error Class	–
121	LAI	Error History (Current Error) Error Phase	<i>See LMV51 and LMV52 Basic Documentation</i>
122	LAI	Error History (Current Error) Error Fuel	–
123	LAI	Error History (Current Error) Error Output	–
124	LAI	Error History (Current Error) Error Startup Counter Total	–
<p>^a Values noted for LDIs and LDOs are in the following format: OFF text/ON text.</p> <p>^b This column indicates the value/range or engineering units or both if known.</p> <p>^c The default English value is not italicized. An italicized entry indicates an SI value.</p>			

For Steam Boilers

Table 2. LMV51 Burner Controller for Steam Boilers Point Map, Application 4643.

Point	Type	Description	Range/Units ^{a b c}
1	LAO	Address	–
2	LAI	Application	–
3	LDI	Communication Error	Off/On
4	LAO	IP Address 1	–
5	LAO	IP Address 2	–
6	LAO	IP Address 3	–
7	LAO	IP Address 4	–
8	LAO	IP Port	–
9	LAO	Base Offset	–
10	LAO	Send Initial Value	–
11	LAI	Phase	See LMV51 and LMV52 Basic Documentation
12	LAI	Position of Currently Active Fuel Actuator	°
13	LAI	Position of Gas Actuator	°
14	LAI	Position of Oil Actuator	°
15	LAI	Position of Air Actuator	°
16	LAI	Position of Auxiliary Actuator 1	°
17	LAI	Position of Auxiliary Actuator 2	°
18	LAI	Position of Auxiliary Actuator 3	°
19	LAI	Manipulated Variable for Variable Speed Drive	%
20	LAI	Current Type Fuel	0=Gas 1=Oil
21	LAI	Current Output (Fire Rate)	%
22	LAI	Current Steam Pressure Setpoint	psi bar
23	LAI	Steam Pressure	psi bar
24	LAI	Flame Signal	%
25	LAI	Current Fuel Throughput	–
26	LAI	Volume Unit of Gas	0=Cubic Meters 1=Cubic Feet
27	LAI	Volume Unit of Oil	0=Liters 1=Gallons
28	LAI	Unit of Temperature	0=Deg C 1=Deg F
29	LAI	Unit of Pressure	0=bar 1=psi

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Table 2. LMV51 Burner Controller for Steam Boilers Point Map, Application 4643. (continued)

Point	Type	Description	Range/Units ^{a b c}
30	LAI	Sensor Selection	0=Pt100 1=Pt1000 2=Ni1000 3=Temperature Sensor 4=Pressure Sensor 5=Pt100Pt1000 6=Pt100Ni1000 7=No Sensor
31	LAI	Startup Counter Total	–
32	LAI	Hours Run Counter	hrs
33	LAI	Current Error: Error Code	–
34	LAI	Current Error: Diagnostic Code	–
35	LAI	Current Error: Error Class	–
36	LAI	Current Error: Error Phase	See <i>LMV51 and LMV52 Basic Documentation</i>
37	LAI	Temperature Limiter Off Threshold	°F °C
38	LAI	Supply Air Temperature	°F °C
39	LDI	Controller On/Off	Off/On
40	LDI	Fan Contactor Contact	Off/On
41	LDI	Fuel Selection Oil	Off/On
42	LDI	Fuel Selection Gas	Off/On
44	LDI	Maximum Oil Pressure Switch	Off/On
45	LDI	Minimum Oil Pressure Switch	Off/On
46	LDI	Pressure Valve Proving	Off/On
47	LDI	Safety Chain	Off/On
49	LDI	Maximum Gas Pressure Switch	Off/On
50	LDI	Minimum Gas Pressure Switch	Off/On
52	LDI	LP	Off/On
53	LDI	Start Release Oil	Off/On
54	LDI	Heavy Oil Immediate Start	Off/On
55	LDI	Alarm	Off/On
59	LDI	Ignition	Off/On
60	LDI	Start Signal/DW Valve	Off/On
61	LDI	Fan	Off/On
62	LDI	Oil Pump/Magnetic Coupling	Off/On
63	LDI	Fuel Valve SV Oil	Off/On
64	LDI	Fuel Valve V1 Oil	Off/On

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Table 2. LMV51 Burner Controller for Steam Boilers Point Map, Application 4643. (continued)

Point	Type	Description	Range/Units ^{a b c}
65	LDI	Fuel Valve V2 Oil	Off/On
66	LDI	Fuel Valve V3 Oil	Off/On
67	LDI	Fuel Valve SV Gas	Off/On
68	LDI	Fuel Valve V1 Gas	Off/On
69	LDI	Fuel Valve V2 Gas	Off/On
70	LDI	Fuel Valve PV Gas	Off/On
71	LAO	Operating Mode with Load Controller	0=ExtLR X5-03 1=IntLR 2=IntL Bus 3=IntLR X62 4=ExtLR X62 5=ExtLR Bus
72	LAI	Selection of Manual or Automatic Operation	0=Automatic 1=Burner On 2=Burner Off
73	LDO	Modbus Mode	Local/Remote
74	LAO	Modbus Downtime: Maximum Time with No Communication. When This Time Has Elapsed, Automatic Changeover from Remote to Local Takes Place.	sec
75	LAO	Operating Mode in Remote Mode	0=Auto 1=Remote On 2=Remote Off
76	LAO	External Setpoint W3	psi bar
77	LAO	Predefined Output Modulation/Multistage	0 to 100.0%=Full Modulation 100.1%=Stage1 100.2%=Stage2 100.3%=Stage3
78	LAO	Fuel Selection	0=Gas 1=Oil
79	LAO	Setpoint W1	psi bar
80	LAO	Setpoint W2	psi bar
81	LAO	Weekday	0=Sunday 1=Monday 2=Tuesday 3=Wednesday 4=Thursday 5=Friday 6=Saturday
82	LAO	Year	yyyy
83	LAO	Month	mm
84	LAO	Day	dd

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Table 2. LMV51 Burner Controller for Steam Boilers Point Map, Application 4643. (continued)

Point	Type	Description	Range/Units ^{a b c}
85	LAO	Hour	hr
86	LAO	Minute	min
87	LAO	Second	sec
89	LAO	Hours Run Gas (Can Be Reset by Setting This Point to Zero)	hrs
90	LAO	Hours Run Oil Stage 1 or Modulating (Can Be Reset by Setting This Point to Zero)	hrs
91	LAO	Hours Run Oil Stage 2 or Modulating (Can Be Reset by Setting This Point to Zero)	hrs
92	LAO	Hours Run Oil Stage 3 or Modulating (Can Be Reset by Setting This Point to Zero)	hrs
93	LAO	Hours Run Total (Can Be Reset by Setting This Point to Zero)	hrs
94	LAI	Hours Run Total	hrs
96	LAI	Hours Run Device Connected to Power (Read Only)	hrs
97	LAO	Startup Counter Gas (Can Be Reset by Setting This Point to Zero)	–
98	LAO	Startup Counter Oil (Can Be Reset by Setting This Point to Zero)	–
99	LAO	Startup Counter Total (Can Be Reset by Setting This Point to Zero)	–
100	LAI	Startup Counter Total	–
101	LAI	Fuel Volume Gas	cu ft m ³
102	LAI	Fuel Volume Oil	gal L
103	LAI	Number of Lockouts	–
104	LAI	Lockout History (Current Lockout) Error Code	–
105	LAI	Lockout History (Current Lockout) Error Diagnostics	–
106	LAI	Lockout History (Current Lockout) Error Class	–
107	LAI	Lockout History (Current Lockout) Error Phase	See <i>LMV51 and LMV52 Basic Documentation</i>
108	LAI	Lockout History (Current Lockout) Fuel	0=Gas 1=Oil
109	LAI	Lockout History (Current Lockout) Output	%
110	LAI	Lockout History (Current Lockout) Date: Year	yyyy
111	LAI	Lockout History (Current Lockout) Date: Month	mm
112	LAI	Lockout History (Current Lockout) Date: Day	dd
113	LAI	Lockout History (Current Lockout) Time of Day: Hours	hr
114	LAI	Lockout History (Current Lockout) Time of Day: Minutes	–
115	LAI	Lockout History (Current Lockout) Time of Day: Seconds	–
116	LAI	Lockout History (Current Lockout) Startup Counter Total	–
117	LAI	Lockout History (Current Lockout) Hours Run Total	–

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Table 2. LMV51 Burner Controller for Steam Boilers Point Map, Application 4643. (continued)

Point	Type	Description	Range/Units^{a b c}
118	LAI	Error History (Current Error) Error Code	–
119	LAI	Error History (Current Error) Error Diagnosis	–
120	LAI	Error History (Current Error) Error Class	–
121	LAI	Error History (Current Error) Error Phase	<i>See LMV51 and LMV52 Basic Documentation</i>
122	LAI	Error History (Current Error) Error Fuel	–
123	LAI	Error History (Current Error) Error Output	–
124	LAI	Error History (Current Error) Error Startup Counter Total	–
<p>^a Values noted for LDIs and LDOs are in the following format: OFF text/ON text.</p> <p>^b This column indicates the value/range or engineering units or both if known.</p> <p>^c The default English value is not italicized. An italicized entry indicates an SI value.</p>			

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