Systems Integration

Heat-Timer Driver: Steam Heating

Table 1. Steam Heating Point Map. Application 5841 or 11997.

Point	Type	Description	Range/Units[a,b,c]
2	LAO	Application Number	5841/11997
3	LDI	Device Communication Failure	Normal/Failed
4	LAI	Boiler Run-Time	0 - 2,147,483,647 min
5	LAO	Outdoor Cutoff Temp	30 - 70°F
6	LAO	Ignition Level Stage 0	1 - 50%
7	LAO	Ignition Level Stage 1	1 - 50%
8	LAO	Ignition Level Stage 2	1 - 50%
9	LAO	Ignition Level Stage 3	1 - 50%
10	LAO	Ignition Level Stage 4	1 - 50%
11	LAO	Ignition Level Stage 5	1 - 50%
12	LAO	Ignition Level Stage 6	1 - 50%
13	LAO	Ignition Level Stage 7	1 - 50%
14	LAO	Ignition Level Stage 8	1 - 50%
15	LAO	Ignition Level Stage 9	1 - 50%
16	LAO	Ignition Level Stage 10	1 - 50%
17	LAO	Ignition Level Stage 11	1 - 50%
18	LAO	Ignition Level Stage 12	1 - 50%
19	LAO	Ignition Level Stage 13	1 - 50%
20	LAO	Ignition Level Stage 14	1 - 50%
21	LAO	Ignition Level Stage 15	1 - 50%
22	LAO	Ignition Level Stage 16	1 - 50%
23	LAO	Ignition Level Stage 17	1 - 50%
24	LAO	Ignition Level Stage 18	1 - 50%
25	LAO	Ignition Level Stage 19	1 - 50%
26	LAO	Gain	0.25 - 20.0 (process psi)
27	LDO	Heat/Cool	Heat/Cool
28	LAO	High Fire Hold	0 - 60 min

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Table 1. Steam Heating Point Map. Application 5841 or 11997. *(continued)*

Point	Type	Description	Range/Units[a,b,c]
29	LAO	Sensor Mode	See Table 2.
30	LAO	Lead Stage	0 - 19
31	LAO	Pre-Purge Delay	0 - 10 min
32	LDI	Lockout Input Stage 0	Inactive/Active
33	LDI	Lockout Input Stage 1	Inactive/Active
34	LDI	Lockout Input Stage 2	Inactive/Active
35	LDI	Lockout Input Stage 3	Inactive/Active
36	LDI	Lockout Input Stage 4	Inactive/Active
37	LDI	Lockout Input Stage 5	Inactive/Active
38	LDI	Lockout Input Stage 6	Inactive/Active
39	LDI	Lockout Input Stage 7	Inactive/Active
40	LDI	Lockout Input Stage 8	Inactive/Active
41	LDI	Lockout Input Stage 9	Inactive/Active
42	LDI	Lockout Input Stage 10	Inactive/Active
43	LDI	Lockout Input Stage 11	Inactive/Active
44	LDI	Lockout Input Stage 12	Inactive/Active
45	LDI	Lockout Input Stage 13	Inactive/Active
46	LDI	Lockout Input Stage 14	Inactive/Active
47	LDI	Lockout Input Stage 15	Inactive/Active
48	LDI	Lockout Input Stage 16	Inactive/Active
49	LDI	Lockout Input Stage 17	Inactive/Active
50	LDI	Lockout Input Stage 18	Inactive/Active
51	LDI	Lockout Input Stage 19	Inactive/Active
52	LAO	Last Stage Hold	0 - 30 psi
53	LAO	Manual Modulation Level Stage 0	0 - 100%
54	LAO	Manual Modulation Level Stage 1	0 - 100%
55	LAO	Manual Modulation Level Stage 2	0 - 100%
56	LAO	Manual Modulation Level Stage 3	0 - 100%
57	LAO	Manual Modulation Level Stage 4	0 - 100%
58	LAO	Manual Modulation Level Stage 5	0 - 100%
59	LAO	Manual Modulation Level Stage 6	0 - 100%
60	LAO	Manual Modulation Level Stage 7	0 - 100%
61	LAO	Manual Modulation Level Stage 8	0 - 100%
62	LAO	Manual Modulation Level Stage 9	0 - 100%
63	LAO	Manual Modulation Level Stage 10	0 - 100%

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Table 1. Steam Heating Point Map. Application 5841 or 11997. *(continued)*

Point	Type	Description	Range/Units[a,b,c]
64	LAO	Manual Modulation Level Stage 11	0 - 100%
65	LAO	Manual Modulation Level Stage 12	0 - 100%
66	LAO	Manual Modulation Level Stage 13	0 - 100%
67	LAO	Manual Modulation Level Stage 14	0 - 100%
68	LAO	Manual Modulation Level Stage 15	0 - 100%
69	LAO	Manual Modulation Level Stage 16	0 - 100%
70	LAO	Manual Modulation Level Stage 17	0 - 100%
71	LAO	Manual Modulation Level Stage 18	0 - 100%
72	LAO	Manual Modulation Level Stage 19	0 - 100%
73	LAI	Maximum Stages	4 - 32
74	LAI	Stage Number 0 Mode	See Table 3.
75	LAI	Stage Number 1 Mode	See Table 3.
76	LAI	Stage Number 2 Mode	See Table 3.
77	LAI	Stage Number 3 Mode	See Table 3.
78	LAI	Stage Number 4 Mode	See Table 3.
79	LAI	Stage Number 5 Mode	See Table 3.
80	LAI	Stage Number 6 Mode	See Table 3.
81	LAI	Stage Number 7 Mode	See Table 3.
82	LAI	Stage Number 8 Mode	See Table 3.
83	LAI	Stage Number 9 Mode	See Table 3.
84	LAI	Stage Number 10 Mode	See Table 3.
85	LAI	Stage Number 11 Mode	See Table 3.
86	LAI	Stage Number 12 Mode	See Table 3.
87	LAI	Stage Number 13 Mode	See Table 3.
88	LAI	Stage Number 14 Mode	See Table 3.
89	LAI	Stage Number 15 Mode	See Table 3.
90	LAI	Stage Number 16 Mode	See Table 3.
91	LAI	Stage Number 17 Mode	See Table 3.
92	LAI	Stage Number 18 Mode	See Table 3.
93	LAI	Stage Number 19 Mode	See Table 3.
94	LAO	Modulation Start Point Stage 0	0 - 99%
95	LAO	Modulation Start Point Stage 1	0 - 99%
96	LAO	Modulation Start Point Stage 2	0 - 99%
97	LAO	Modulation Start Point Stage 3	0 - 99%
98	LAO	Modulation Start Point Stage 4	0 - 99%

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Table 1. Steam Heating Point Map. Application 5841 or 11997. ***(continued)***

Point	Type	Description	Range/Units[a,b,c]
99	LAO	Modulation Start Point Stage 5	0 - 99%
100	LAO	Modulation Start Point Stage 6	0 - 99%
101	LAO	Modulation Start Point Stage 7	0 - 99%
102	LAO	Modulation Start Point Stage 8	0 - 99%
103	LAO	Modulation Start Point Stage 9	0 - 99%
104	LAO	Modulation Start Point Stage 10	0 - 99%
105	LAO	Modulation Start Point Stage 11	0 - 99%
106	LAO	Modulation Start Point Stage 12	0 - 99%
107	LAO	Modulation Start Point Stage 13	0 - 99%
108	LAO	Modulation Start Point Stage 14	0 - 99%
109	LAO	Modulation Start Point Stage 15	0 - 99%
110	LAO	Modulation Start Point Stage 16	0 - 99%
111	LAO	Modulation Start Point Stage 17	0 - 99%
112	LAO	Modulation Start Point Stage 18	0 - 99%
113	LAO	Modulation Start Point Stage 19	0 - 99%
114	LAI	Outdoor Sensor	-40 - 250°F
115	LAO	Outdoor Sensor Trim	-5 - 5°F
116	LAO	Lead Stage Rotation Mode	0 = Manual 1 = Time 2 = Last-On
117	LAO	Periodic Rotation Interval	6 - 168 hrs
118	LAI	Setback	0 - 75 psi
119	LAO	Setpoint	0 - 100 psi
120	LAI	System Run-on	0 - 60 min
121	LAO	Standby Delay	1 - 60 min
122	LDI	On/Off Stage 0	Off/On
123	LDI	On/Off Stage 1	Off/On
124	LDI	On/Off Stage 2	Off/On
125	LDI	On/Off Stage 3	Off/On
126	LDI	On/Off Stage 4	Off/On
127	LDI	On/Off Stage 5	Off/On
128	LDI	On/Off Stage 6	Off/On
129	LDI	On/Off Stage 7	Off/On
130	LDI	On/Off Stage 8	Off/On
131	LDI	On/Off Stage 9	Off/On

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Table 1. Steam Heating Point Map. Application 5841 or 11997. ***(continued)***

Point	Type	Description	Range/Units[a,b,c]
132	LDI	On/Off Stage 10	Off/On
133	LDI	On/Off Stage 11	Off/On
134	LDI	On/Off Stage 12	Off/On
135	LDI	On/Off Stage 13	Off/On
136	LDI	On/Off Stage 14	Off/On
137	LDI	On/Off Stage 15	Off/On
138	LDI	On/Off Stage 16	Off/On
139	LDI	On/Off Stage 17	Off/On
140	LDI	On/Off Stage 18	Off/On
141	LDI	On/Off Stage 19	Off/On
142	LAI	Modulation Level Stage 0	0 - 100%
143	LAI	Modulation Level Stage 1	0 - 100%
144	LAI	Modulation Level Stage 2	0 - 100%
145	LAI	Modulation Level Stage 3	0 - 100%
146	LAI	Modulation Level Stage 4	0 - 100%
147	LAI	Modulation Level Stage 5	0 - 100%
148	LAI	Modulation Level Stage 6	0 - 100%
149	LAI	Modulation Level Stage 7	0 - 100%
150	LAI	Modulation Level Stage 8	0 - 100%
151	LAI	Modulation Level Stage 9	0 - 100%
152	LAI	Modulation Level Stage 10	0 - 100%
153	LAI	Modulation Level Stage 11	0 - 100%
154	LAI	Modulation Level Stage 12	0 - 100%
155	LAI	Modulation Level Stage 13	0 - 100%
156	LAI	Modulation Level Stage 14	0 - 100%
157	LAI	Modulation Level Stage 15	0 - 100%
158	LAI	Modulation Level Stage 16	0 - 100%
159	LAI	Modulation Level Stage 17	0 - 100%
160	LAI	Modulation Level Stage 18	0 - 100%

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Table 1. Steam Heating Point Map. Application 5841 or 11997. *(continued)*

Point	Type	Description	Range/Units[a,b,c]
161	LAI	Modulation Level Stage 19	0 - 100%
162	LDI	System On/Off	Off/On
163	LAI	System Sensor	0 - 100 psi

[a] Values noted for LDIs and LDOs are in the following format: OFF text/ON text.

[b] This column indicates the value/range or engineering units or both if known.

[c] The default English value is not italicized. An italicized entry indicates an SI value.

Sensor Mode (Point 29)

Use Table 2 to interpret the Sensor Mode values in Point 29. The value of this point is used to determine the application number. A value of 0 or 1 will result in the use of Application 5841; a value of 8 or 9 will result in the use of Application 5842; and a value of 2 through 6 will result in the use of Application 5840. The value of 7 (HWR) is not supported by the Heat-Timer Driver.

Table 2. Sensor Mode (Point 29).

Value	Description
0	Degrees Fahrenheit (°F)
1	Degrees Centigrade (°C)
2	15 psi
3	30 psi
4	100 psi
5	200 psi
6	300 psi
7	HWR (Hot Water Outdoor Reset Control)
8	Reset Degrees Fahrenheit
9	Reset Degrees Centigrade

Stage Mode (Points 74 to 93)

Use Table 3 to identify the Stage Mode values in Points 74 to 93. The Steam Heating will only control Stage Modulation for stages set to a value of Auto or Standby. Stages with a value of Standby will have a delay prior to activation. Values other than Auto or Standby are *not* recommended for stages that are connected to an active unit. Any stage without an active unit connected, or those without an output relay, *must* have a value of Off.

Table 3. Stage Mode (Points 74 to 93).

Value	Description
0	Auto - The Steam Heating controls the stage operation to maintain the setpoint. Only stages with a value of Auto can be Lead Stages.
1	Standby - Stages with a value of Standby can only be activated when all stages with a value of Auto have been at 100% modulation for a time period determined by the value of Standby Delay (Point 121). A Stage with the value of Standby *cannot* be a Lead Stage.

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Table 3. Stage Mode (Points 74 to 93). ***(continued)***

Value	Description
2	Manual - The Manual mode is intended for testing a stage and will override the automatic system control. When the exact percentage of modulation for the stage is set in Manual mode, the unit is activated immediately with the specified percentage of modulation.
3	Off - Setting the Stage Mode to a value of Off is used to disable units during service, or when a stage does not have a relay or unit connected.
4	On - Setting the Stage Mode to a value of On is used to test a stage and will override the automatic system control. When the percentage of modulation is set to 100%, the Stage immediately turns On.

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