

## Systems Integration

# APOGEE® Integration to Invensys LONWORKS® Devices: MicroNet 100/200 Application 9064

Table 1. MicroNet 100/200 APOGEE Points, Application Number: 9064, Program ID: 80:00:16:50:33:04:04:02.

Point	Type	Description	Range/Units <sup>a b c</sup>
1	LAO	Space Temperature Input	°F °C
2	LAO	Temperature Set Point Input	°F °C
3	LAI	Space Temperature Output	°F °C
4	LENUM	Unit Status Output Mode	See Table 2
5	LAI	Unit Status Output Primary Heat	%
6	LAI	Unit Status Output Secondary Heat	%
7	LAI	Unit Status Output Cool	%
8	LAI	Unit Status Output Economizer	%
9	LAI	Unit Status Output Fan	%
10	LDI	Unit Status Output Alarm	Normal/Alarm
11	LENUM	Application Mode Input	See Table 2
12	LENUM	Occupancy Input	0=Oc_Occupied 1=Oc_Unoccupied 2=Oc_Bypass 3=Oc_Standby 255=Oc_Nul
13	LAO	Simple Occupancy Input Value	%
14	LAO	Simple Occupancy Input State	–
15	LAO	Set Point Offset Input	°F °C

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**Table 1. MicroNet 100/200 APOGEE Points, Application Number: 9064, Program ID: 80:00:16:50:33:04:04:02. (continued)**

Point	Type	Description	Range/Units <sup>a b c</sup>
16	LENUM	Auxiliary Heat	0=Off 1=Low 2=Med 3=High 4=On 255=Nul
17	LAI	Effective Set Point Output	°F °C
18	LENUM	Occupancy Scheduler Input Current State	0=Oc_Occupied 1=Oc_Unoccupied 2=Oc_Bypass 3=Oc_Standby 255=Oc_Nul
19	LENUM	Occupancy Scheduler Input Next State	0=Oc_Occupied 1=Oc_Unoccupied 2=Oc_Bypass 3=Oc_Standby 255=Oc_Nul
20	LAO	Occupancy Scheduler Input Time To Next State	min
21	LENUM	Override Command Input State	See Table 3
22	LAO	Override Command Input Percent	%
23	LAO	Override Command Input Flow	cfm Lps
24	LAO	Night Setback Set Point	°F °C
25	LAO	Night Setup Set Point	°F °C
29	LDO	Flow Proof Input	Off/On
30	LENUM	–	0=Off 1=Low 2=Med 3=High 4=On 255=Nul
33	LENUM	Occupancy Scheduler Current State	0=Oc_Occupied 1=Oc_Unoccupied 2=Oc_Bypass 3=Oc_Standby 255=Oc_Nul
34	LENUM	Occupancy Scheduler Next State	0=Oc_Occupied 1=Oc_Unoccupied 2=Oc_Bypass 3=Oc_Standby 255=Oc_Nul

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**Table 1. MicroNet 100/200 APOGEE Points, Application Number: 9064, Program ID: 80:00:16:50:33:04:04:02. (continued)**

Point	Type	Description	Range/Units <sup>a b c</sup>
35	LAI	Occupancy Scheduler Time To Next State	min
36	LENUM	Occupancy Manual Command Output	0=Oc_Occupied 1=Oc_Unoccupied 2=Oc_Bypass 3=Oc_Standby 255=Oc_Nul
37	LAI	Discharge Air Temperature	°F °C
38	LAI	Heating Set Point	°F °C
39	LAI	Cooling Output	%
40	LAI	Heating Output	%
42	LDI	Flow Proof Output	Off/On
44	LAI	Override Time Remaining	min
200	LAO	Occupancy Temperature Set Point Occupied Cool	°F °C
201	LAO	Occupancy Temperature Set Point Standby Cool	°F °C
202	LAO	Occupancy Temperature Set Point Unoccupied Cool	°F °C
203	LAO	Occupancy Temperature Set Point Occupied Heat	°F °C
204	LAO	Occupancy Temperature Set Point Standby Heat	°F °C
205	LAO	Occupancy Temperature Set Point Unoccupied Heat	°F °C
206	LAO	Receive Heartbeat Cp Input	sec
207	LAO	–	sec
208	LAO	Discharge Sensor Offset	°F °C
209	LAO	Heat/Cool Differential	°F °C
210	LAO	Default Night Setback	°F °C
211	LAO	Default Night Setup	°F °C

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**Table 1. MicroNet 100/200 APOGEE Points, Application Number: 9064, Program ID: 80:00:16:50:33:04:04:02. (continued)**

Point	Type	Description	Range/Units <sup>a b c</sup>
212	LAO	Night Setback Differential	°F °C
213	LAO	Night Setup Differential	°F °C
217	LAO	Override Time Duration	min

<sup>a</sup> Values noted for LDIs and LDOs are in the following format: OFF text/ON text.

<sup>b</sup> This column indicates the value/range or engineering units or both if known.

<sup>c</sup> The default English value is not italicized. An italicized entry indicates an SI value.

**Table 2. HVAC Mode/Status (hvac\_t).**

Value	Description
0	Hvac_Auto
1	Hvac_Heat
2	Hvac_Mrng_Wrmup
3	Hvac_Cool
4	Hvac_Night_Purge
5	Hvac_Pre_Cool
6	Hvac_Off
7	Hvac_Test
8	Hvac_Emerg_Heat
9	Hvac_Fan_Only
10	Hvac_Free_Cool
11	Hvac_Ice
255	Hvac_Nul

**Table 3. HVAC Override Type (hvac\_overid\_t).**

Value	Description
0	Hvo_Off
1	Hvo_Position
2	Hvo_Flow_Value
3	Hvo_Flow_Percent
4	Hvo_Open
5	Hvo_Close
6	Hvo_Minimum
7	Hvo_Maximum
8	Hvo_Unused8

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**Table 3. HVAC Override Type (hvac\_overid\_t). (continued)**

<b>Value</b>	<b>Description</b>
9	Hvo_Unused9
10	Hvo_Unused10
11	Hvo_Unused11
12	Hvo_Unused12
13	Hvo_Unused13
14	Hvo_Unused14
15	Hvo_Unused15
16	Hvo_Unused16
17	Hvo_Position_1
18	Hvo_Flow_Value_1
19	Hvo_Flow_Percent_1
20	Hvo_Open_1
21	Hvo_Close_1
22	Hvo_Minimum_1
23	Hvo_Maximum_1
24	Hvo_Unused24
25	Hvo_Unused25
26	Hvo_Unused26
27	Hvo_Unused27
28	Hvo_Unused28
29	Hvo_Unused29
30	Hvo_Unused30
31	Hvo_Unused31
32	Hvo_Unused32
33	Hvo_Position_2
34	Hvo_Flow_Value_2
35	Hvo_Flow_Percent_2
36	Hvo_Open_2
37	Hvo_Close_2
38	Hvo_Minimum_2
39	Hvo_Maximum_2
40	Hvo_Unused40
41	Hvo_Unused41
42	Hvo_Unused42

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**Table 3. HVAC Override Type (hvac\_overid\_t). (continued)**

<b>Value</b>	<b>Description</b>
43	Hvo_Unused43
44	Hvo_Unused44
45	Hvo_Unused45
46	Hvo_Unused46
47	Hvo_Unused47
48	Hvo_Unused48
255	Hvo_Nul

Table 4. MicroNet 100/200 LONWORKS Network Variables, Program ID: f57e00ca-0749-4265-b425-1dff358c02b2.

Point	NVO Name	NVI Name	CP Name
1	-	nviSpaceTemp	nviSpaceTemp
2	-	nviSetPoint	nviSetPoint
3	nvoSpaceTemp	-	-
4	nvoUnitStatus.mode	-	-
5	nvoUnitStatus.heat_output_primary	-	-
6	nvoUnitStatus.heat_output_secondary	-	-
7	nvoUnitStatus.cool_output	-	-
8	nvoUnitStatus.econ_output	-	-
9	nvoUnitStatus.fan_output	-	-
10	nvoUnitStatus.in_alarm	-	-
11	-	nviApplicMode	nviApplicMode
12	-	nviOccCmd	nviOccCmd
13	-	nviOccupSw.value	nviOccupSw.value
14	-	nviOccupSw.state	nviOccupSw.state
15	-	nviSetPtOffset	nviSetPtOffset
16	-	nviAuxHeat	nviAuxHeat
17	nvoEffectSetPt	-	-
18	-	nviOccSchedule.current_state	nviOccSchedule.current_state
19	-	nviOccSchedule.next_state	nviOccSchedule.next_state
20	-	nviOccSchedule.time_to_next_state	nviOccSchedule.time_to_next_state
21	-	nviOverride.state	nviOverride.state
22	-	nviOverride.percent	nviOverride.percent
23	-	nviOverride.flow	nviOverride.flow
24	-	nviSatTemp1	nviSatTemp1
25	-	nviSatTemp2	nviSatTemp2
29	-	nviSatSwitch1.state	nviSatSwitch1.state
30	-	nviSatLevDisc1	nviSatLevDisc1
33	nvoOccSchedule.current_state	-	-
34	nvoOccSchedule.next_state	-	-

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Table 4. MicroNet 100/200 LONWORKS Network Variables, Program ID: f57e00ca-0749-4265-b425-1dff358c02b2. (continued)

Point	NVO Name	NVI Name	CP Name
35	nvoOccSchedule.time_to_next_state	-	-
36	nvoOccCmd	-	-
37	nvoSatTemp1	-	-
38	nvoSatTemp2	-	-
39	nvoSatPercent1	-	-
40	nvoSatPercent2	-	-
42	nvoSatSwitch1.state	-	-
44	nvoSatCntIncF1	-	-
200	-	-	nciTempSetpts.occupied_cool
201	-	-	nciTempSetpts.standby_cool
202	-	-	nciTempSetpts.unoccupied_cool
203	-	-	nciTempSetpts.occupied_heat
204	-	-	nciTempSetpts.standby_heat
205	-	-	nciTempSetpts.unoccupied_heat
206	-	-	nciRcvHrtBt
207	-	-	nciMinOutTm
208	-	-	nciSatConfig1
209	-	-	nciSatConfig2
210	-	-	nciSatConfig3
211	-	-	nciSatConfig4
212	-	-	nciSatConfig5
213	-	-	nciSatConfig6
217	-	-	nciSatConfig10



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