Systems Integration

APOGEE® Integration to Siemens LONWORKS® Devices: Desigo RXC20/RXC21 Room Controllers FNC03 Thermic Actuator

Table 1. RXC20/RXC21 APOGEE Points, Application Number: 8472, Program ID: 80:00:19:51:00:03:04:0D.

Point	Type	Description	Range/Units[a b c]
1	LAO	Space Temperature Output	°F °C
3	LENUM	Unit Status Output Mode	See Table 2
4	LAI	Unit Status Output Primary Heat	%
5	LAI	Unit Status Output Secondary Heat	%
6	LAI	Unit Status Output Cool	%
7	LAI	Unit Status Output Economizer	%
8	LAI	Unit Status Output Fan	%
9	LDI	Unit Status Output Alarm	Off/On
11	LAO	Set Point Offset Input	°F °C
12	LAO	Set Point Shift Input Occupied Cool	°F °C
13	LAO	Set Point Shift Input Standby Cool	°F °C
14	LAO	Set Point Shift Input Unoccupied Cool	°F °C
15	LAO	Set Point Shift Input Occupied Heat	°F °C
16	LAO	Set Point Shift Input Standby Heat	°F °C
17	LAO	Set Point Shift Input Unoccupied Heat	°F °C
18	LENUM	Occupancy Scheduler Input Curent State	0 = Oc_Occupied 1 = Oc_Unoccupied 2 = Oc_Bypass 3 = Oc_Standby 255 = Oc_Nul

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Table 1. RXC20/RXC21 APOGEE Points, Application Number: 8472, Program ID: 80:00:19:51:00:03:04:0D. ***(continued)***

Point	Type	Description	Range/Units[a] [b] [c]
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	Occupancy Input	0 = Oc_Occupied 1 = Oc_Unoccupied 2 = Oc_Bypass 3 = Oc_Standby 255 = Oc_Nul
22	LENUM	Occupancy Sensor Input	0 = Oc_Occupied 1 = Oc_Unoccupied 2 = Oc_Bypass 3 = Oc_Standby 255 = Oc_Nul
23	LENUM	Application Mode	See Table 2
24	LENUM	Heat/Cool Mode Input	See Table 2
25	LAO	Fan Speed Command Value	%
26	LAO	Fan Speed Command State	–
29	LAO	Auxiliary Heat Enable Input Value	%
30	LAO	Auxiliary Heat Enable Input State	–
33	LAO	Energy Hold Off Input Value	%
34	LAO	Energy Hold Off Input State	–
35	LENUM	Valve Override Status	See Table 3
36	LAO	Valve Override Percent	%
37	LAO	Valve Override Flow	cfm
50	LAI	Effective Set Point Output	°F *°C*
51	LENUM	Occupancy Output	0 = Oc_Occupied 1 = Oc_Unoccupied 2 = Oc_Bypass 3 = Oc_Standby 255 = Oc_Nul
52	LENUM	Heat Cool Output	See Table 2
55	LAI	Fan Speed Output Value	%
56	LDI	Fan Speed Output State	Off/On
57	LAI	Discharge Air Temperature Output	°F *°C*
58	LAI	Absolute Power Consumption Output	W
60	LAI	Terminal Load Output	%

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Table 1. RXC20/RXC21 APOGEE Points, Application Number: 8472, Program ID: 80:00:19:51:00:03:04:0D. ***(continued)***

Point	Type	Description	Range/Units[a] [b] [c]
61	LAI	Primary Heat Output	%
62	LAI	Secondary Heat Output	%
63	LAI	Primary Cool Output	%
72	LAI	Energy Hold Output Value	%
73	LDI	Energy Hold Output State	Off/On
83	LAI	Effective Set Point Occupied Cool	°F *°C*
84	LAI	Effective Set Point Standby Cool	°F *°C*
85	LAI	Effective Set Point Unoccupied Cool	°F *°C*
86	LAI	Effective Set Point Occupied Heat	°F *°C*
87	LAI	Effective Set Point Standby Heat	°F *°C*
88	LAI	Effective Set Point Unccupied Heat	°F *°C*
89	LAI	Set Point Offset Feedback	°F *°C*
90	LAI	Temperature Sensor Input	°F *°C*
91	LENUM	Occupancy Sensor Input	0 = Oc_Occupied 1 = Oc_Unoccupied 2 = Oc_Bypass 3 = Oc_Standby 255 = Oc_Nul
100	LAO	Occupancy Temperature Set Point Occupied Cool	°F *°C*
101	LAO	Occupancy Temperature Set Point Standby Cool	°F *°C*
102	LAO	Occupancy Temperature Set Point Unoccupied Cool	°F *°C*
103	LAI	Occupancy Temperature Set Point Occupied Heat	°F *°C*
104	LAI	Occupancy Temperature Set Point Standby Heat	°F *°C*
105	LAO	Occupancy Temperature Set Point Unoccupied Heat	°F *°C*
106	LAI	Receive Hartbeat	sec

[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.

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
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

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Table 3. HVAC Override Type (hvac_overid_t). ***(continued)***

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

Table 4. RXC20/RXC21 LONWORKS Network Variables, Program ID: 80:00:19:51:00:03:04:0D.

Point	Subpoint Name	NVO Name	NVI Name	CP Name
1	SpaceTemp	nvoSpaceTemp	nviSpaceTemp	nviSpaceTemp
3	OpMode	nvoUnitStatus.mode	–	–
4	HeatOpPrim	nvoUnitStatus.heat_output_primary	–	–
5	HeatOpSec	nvoUnitStatus.heat_output_secondary	–	–
6	CoolOp	nvoUnitStatus.cool_output	–	–
7	EconOp	nvoUnitStatus.econ_output	–	–
8	FanOp	nvoUnitStatus.fan_output	–	–
9	InAlarm	nvoUnitStatus.in_alarm	–	–
11	SetPntOffset	–	nviSetptOffset	nviSetptOffset
12	SPSh_OccCool	–	nviSetptShift.occupied_cool	nviSetptShift.occupied_cool
13	SPSh_SbyCool	–	nviSetptShift.standby_cool	nviSetptShift.standby_cool
14	SpSh_UnoCool	–	nviSetptShift.unoccupied_cool	nviSetptShift.unoccupied_cool
15	SpSh_OccHeat	–	nviSetptShift.occupied_heat	nviSetptShift.occupied_heat
16	SpSh_SbyHeat	–	nviSetptShift.standby_heat	nviSetptShift.standby_heat
17	SpSh_UnoHeat	–	nviSetptShift.unoccupied_heat	nviSetptShift.unoccupied_heat
18	CurState	–	nviOccSchedule.current_state	nviOccSchedule.current_state
19	NextState	–	nviOccSchedule.next_state	nviOccSchedule.next_state
20	TimeToNextSt	–	nviOccSchedule.time_to_next_state	nviOccSchedule.time_to_next_state
21	OccCmd	–	nviOccManCmd	nviOccManCmd
22	OccSensorCmd	–	nviOccSensor	nviOccSensor
23	ApplMode	–	nviApplicMode	nviApplicMode
24	HeatCoolCmd	–	nviHeatCool	nviHeatCool
25	FanSpdCmd_V	–	nviFanSpeedCmd.value	nviFanSpeedCmd.value
26	FanSpdCmd_S	–	nviFanSpeedCmd.state	nviFanSpeedCmd.state
29	AuxHeatEn_V	–	nviAuxHeatEnable.value	nviAuxHeatEnable.value
30	AuxHeatEn_S	–	nviAuxHeatEnable.state	nviAuxHeatEnable.state
33	EngyHldCmd_V	–	nviEnergyHoldOff.value	nviEnergyHoldOff.value
34	EngyHldCmd_S	–	nviEnergyHoldOff.state	nviEnergyHoldOff.state
35	ValveOvrd_S	–	nviValveOverride.state	–

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Table 4. RXC20/RXC21 LONWORKS Network Variables, Program ID: 80:00:19:51:00:03:04:0D. *(continued)*

Point	Subpoint Name	NVO Name	NVI Name	CP Name
36	ValveOvrd_P	–	nviValveOverride.percent	–
37	ValveOvrd_F	–	nviValveOverride.flow	–
50	EffectSetPt	nvoEffectSetpt	–	–
51	Occupancy	nvoEffectOccup	–	–
52	HeatCool_Out	nvoHeatCool	–	–
55	FanSpeed_OPV	nvoFanSpeed.value	–	–
56	FanSpeed_OPS	nvoFanSpeed.state	–	–
57	DischAirT	nvoDischAirTemp	–	–
58	LoadAbs	nvoLoadAbs	–	–
60	TerminalLoad	nvoTerminalLoad	–	–
61	HeatPrim	nvoHeatPrimary	–	–
62	HeatSec	nvoHeatSecondary	–	–
63	CoolPrim	nvoCoolPrimary	–	–
72	EngyHold_OPV	nvoEnergyHoldOff.value	–	–
73	EngyHold_OPS	nvoEnergyHoldOff.state	–	–
83	ESP_OccCool	nvoSetptEffect.occupied_cool	–	–
84	ESP_SbyCool	nvoSetptEffect.standby_cool	–	–
85	ESP_UnocCool	nvoSetptEffect.unoccupied_cool	–	–
86	ESP_OccHeat	nvoSetptEffect.occupied_heat	–	–
87	ESP_SbyHeat	nvoSetptEffect.standby_heat	–	–
88	ESP_UnocHeat	nvoSetptEffect.unoccupied_heat	–	–
89	SetpOffsetFb	nvoSetptOffset	–	–
90	TempSensor	nvoTempSensor	–	–
91	OccSensor	nvoOccSensor	–	–
100	SP_OccCool	–	–	nciSetpoints.occupied_cool
101	SP_SbyCool	–	–	nciSetpoints.standby_cool
102	SP_UnoccCool	–	–	nciSetpoints.unoccupied_cool
103	SP_OccHeat	–	–	nciSetpoints.occupied_heat
104	SP_SbyHeat	–	–	nciSetpoints.standby_heat

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Table 4. RXC20/RXC21 LONWORKS Network Variables, Program ID: 80:00:19:51:00:03:04:0D. ***(continued)***

Point	Subpoint Name	NVO Name	NVI Name	CP Name
105	SP_UnoccHeat	–	–	nciSetpoints.unoccupied_heat
106	SP_RcvHrtBt	–	–	SCPTmaxRcvTime

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Siemens Building Technologies, Inc.
1000 Deerfield Parkway
Buffalo Grove, IL 60089-4513
U.S.A.

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