Systems Integration

APOGEE™ Open Processor with McQuay Microtech Driver: C Vintage Water-Cooled Screw Chiller

Table 1. C Vintage Water-Cooled Screw Chiller.

Point	Type	Description	Range/Units
01	LAO	Device Address	—
02	LAO	Application Number	5056
03	LAI	Chilled Water Temperature – Active Set Point	0 – 80°F
04	LDI	Chiller Unit Temperature Type	Standard/Low Temperature
05	LAI	Compressor Lift Pressure	0 – 65,535 psig
06	LAI	Compressor 1 Motor Current	0 – 100% RLA
07	LAI	Compressor 2 Motor Current	0 – 100% RLA
08	LAI	Compressor 1 Operating Hours	0 – 65280
09	LAI	Compressor 2 Operating Hours	0 – 65280
11	LAI	Compressor 1 Suction Temperature	-40 – 263°F
12	LAI	Compressor 2 Suction Temperature	-40 – 263°F
15	LAI	Compressor Superheat – Discharge Circuit 1	0 – 263°F
16	LAI	Compressor Superheat – Discharge Circuit 2	0 – 263°F
17	LAI	Compressor Superheat – Suction Circuit 1	0 – 263°F
18	LAI	Compressor Superheat – Suction Circuit 2	0 – 263°F
19	LAI	Condenser Approach Temperature	0 – 263°F
20	LAI	Condenser Differential Pressure – Liquid Line	0 – 6,553 psi
21	LAI	Condenser Pump Status	See Table 2
22	LAI	Condenser Pump No. 1 Operating Hours	0 – 49,999
23	LAI	Condenser Pump No. 2 Operating Hours	0 – 49,999
24	LAI	Condenser Refrigerant Pressure	0 – 450 psig
25	LAI	Condenser Subcooling Temperature	0 – 263°F
26	LAI	Condenser Water Flow Rate	0 – 65,535 GPM
27	LDI	Condenser Water Flow Status	No Flow/Flow
28	LDI	Condenser Water Rate Sensor	Not Present/Present

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Table 1. C Vintage Water-Cooled Screw Chiller.

Point	Type	Description	Range/Units
29	LAI	Condenser Water Temperature – Delta	0 – 263°F
30	LAI	Condenser Water Temperature – Entering	-40 – 263°F
31	LAI	Condenser Water Temperature – Leaving	-40 – 263°F
32	LDI	Cooling Tower Control	External/Chiller
33	LAI	Cooling Tower Stage	0 – 6 Stages
34	LAI	Cooling Tower Valve Position	0 – 100%
35	LAI	Discharge Refrigerant Temperature – Circuit 1	-40 – 263°F
36	LAI	Discharge Refrigerant Temperature – Circuit 2	-40 – 263°F
37	LAI	Evaporator Approach Temperature	0 – 263°F
38	LAI	Evaporator Pump Status	See Table 3
39	LAI	Evaporator Pump No. 1 Operating Hours	0 – 49,999
40	LAI	Evaporator Pump No. 2 Operating Hours	0 – 49,999
41	LAI	Evaporator Refrigerant Pressure	0 – 150 psig
42	LAI	Evaporator Water Flow Rate	0 – 65,535 GPM
43	LDI	Evaporator Water Flow Status	No Flow/Flow
44	LDI	Evaporator Water Rate Sensor	Not Present/Present
45	LAI	Evaporator Water Temperature – Delta	0 – 263°F
46	LAI	Evaporator Water Temperature – Entering	-40 – 263°F
47	LAI	Evaporator Water Temperature – Leaving	-40 – 263°F
48	LAI	Fault - Current Active – Circuit 1	See Table 4
49	LAI	Fault - Current Active – Circuit 2	See Table 4
50	LAI	Liquid Line Refrigerant Temperature	-40 – 263°F
51	LAI	Liquid Line Pressure	0 – 450 psig
52	LAI	Outdoor Air Temperature Method	Not Present/Local/Network
53	LDI	Refrigerant Detection Sensor	Not Present/Present
54	LAI	Refrigerant Leak Detection Limit	0 – 100 ppm
55	LAI	Unit Status	See Table 5
56	LDO	Clear Current Fault – Circuit 1	No Action/Clear Fault
57	LDO	Clear Current Fault – Circuit 2	No Action/Clear Fault
58	LDO	Disable Chiller Operation	Enable/Disable
59	LAO	Chilled Water Temperature Set Point	0 – 80°F
60	LAO	Outdoor Air Temperature Method	Not Present/Local/Network
61	LAI	Outside Air Temperature	-100 – 500°F
99	LDI	Communication Status	Normal/Failed

Table 2. Condenser Pump Status (Point 21).

Value	Description
0	Condenser Pumps Off
1	Starting Condenser Pump No. 1
2	Starting Condenser Pump No. 2
3	Condenser Pump No. 1 On
4	Condenser Pump No. 2 On
5	Condenser Pump No. 1 Failed; Starting No. 2
6	Condenser Pump No. 2 Failed; Starting No. 1
7	Condenser Pumps No. 1 and No. 2 Failed

Table 3. Evaporator Pump Status (Point 38).

Value	Description
0	Evaporator Pumps Off
1	Starting Evaporator Pump No. 1
2	Starting Evaporator Pump No. 2
3	Evaporator Pump No. 1 On
4	Evaporator Pump No. 2 On
5	Evaporator Pump No. 1 Failed; Starting No. 2
6	Evaporator Pump No. 2 Failed; Starting No. 1
7	Evaporator Pumps No. 1 and No. 2 Failed

Table 4. Faults (Point 48 and 49).

Value	Description
0 – 128	None
129	Liquid Line Sensor Failure
130	Entering Evaporator Sensor Failure
131	Leaving Condenser Sensor Failure
171	Entering Evaporator Sensor Problem
172	Outside Air Temperature Sensor Problem
173	High Condenser Pressure Unload
174	High Condenser Pressure Unload
175	Low Evaporator Pressure Unload
176	Condenser Freeze Protect
177	Evaporator Freeze Protect
215	Low Evaporator Pressure Shutdown
216	Low Evaporator No Start
217	Low Motor Current
218	High Discharge Temperature
219	High Condenser Pressure
220	Mechanical High Condenser Pressure
221	High Motor Temperature
222	Starter Fault
223	No Transition
224	No Evaporator Flow
225	No Condenser Flow
226	High Motor Current
227	No Liquid Run
228	No Super Heat Drop
229	High Discharge Super Heat
230	Evaporator Pressure Sensor Failure
231	Entering Condenser Sensor Failure Shutdown
232	Suction Temperature Sensor Failure
233	Discharge Temperature Sensor Failure
234	Condenser Pressure Sensor Failure
235	Leaving Evaporator Sensor Failure Shutdown
236	Voltage Ratio Sensor Failure

Table 5. Unit Status (Point 55).

Value	Description
0	Off – All Systems
1	Off – Panel Rocker Switch
2	Off – Manual
3	Off – Pumpdown Switch
4	Off – Ambient Temperature Lockout
5	Off – Remote Communications
6	Off – Remote Switch
7	Off – Time Schedule
8	Off – Waiting for Flood
9	Start Requested
10	Evaporator Pump Off
11	Evaporator Pump On – Waiting for Flow
12	Evaporator Pump On – Recirculation
13	Evaporator Pump On – Cycle Timer
14	Evaporator Pump On – Waiting for Load
15	Condenser Pump Off
16	Condenser Pump On – Waiting for Flow
17	Cool Staging
18	Manual Cool Staging
19	Cool Stage Up
20	Cool Stage Down
21	Shut Down/Pump Down
22	Condenser Pump Off Shutdown
23	Evaporator Pump Off Shutdown

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