YVAA/FA

Native Modbus, BACnet MS/TP, N2 Data Map

Micro Board: 031-03478-101

Item	Version	Date	York P/N				COMMENTS
1	Y.ACS.20.02	8/2/16	031-03476-010				Native Communications added
2							
3							
4							
5							

ITEM REF NUM	BACnet Name	BACnet Object Instance	Modbus Address	Modbus Data Type Supported	Modbus Scaling	N2 Metasys Address	ENG UNITS Imper	ENG UNITS SI	POINT LIST CODE: S = STANDARD O = OPTIONAL N = NOT AVAILABLE POINT LIST DESCRIPTION	1	2	3	4	5	6	7	8	9	10
					see note 5														
	ANALOG WRITE POINTS																		
1	REM_SETP	AV1	1026	03,06,16	div10	ADF 1	℉	℃	Chilled Liquid Setpoint (Start command must be active to take effect)	S									
2	DMD_LIMIT	AV2	1027	03,06,16	div10	ADF 2	%FLA	%FLA	Current Limit Setpoint	S									
3	SND_LIMIT	AV3	1028	03,06,16	div10	ADF 3	%	%	Sound Limit Setpoint	S									
	BINARY WRITE POINTS																		
4	START_STOP	BV1	1538	01,03,05,15,06	n/a	BD 1	0/1	0/1	Remote Run/Stop [0=Stop, 1=Run]	S									
	ANALOG READ ONLY POINTS																		
5	LCHLT	AI1	514	03,04	X10	ADF5	℉	℃	Leaving Chilled Liquid Temperature	S									
6	ECHLT	AI2	515	03,04	X10	ADF6	℉	℃	Entering Chilled Liquid Temperature	S									
7	EV_ELT	AI3	516	03,04	X10	ADF 7	℉	℃	Evaporator Liquid Temperature, FC Enabled	O									
8	VSD_IA_TEMP	AI4	517	03,04	X10	ADF 8	℉	℃	VSD Internal Ambient Temperature	S									
9	S1_COND_TEMP	AI5	518	03,04	X10	ADF 9	℉	℃	Sys 1 Condenser Temperature	S									
10	S2_COND_TEMP	AI6	519	03,04	X10	ADF 10	℉	℃	Sys 2 Condenser Temperature	S									
11	S1_DSCH_TEMP	AI7	520	03,04	X10	ADF 11	℉	℃	Sys 1 Discharge Temperature	S									
12	S2_DSCH_TEMP	AI8	521	03,04	X10	ADF 12	℉	℃	Sys 2 Discharge Temperature	S									
13	OAT	AI9	522	03,04	X10	ADF 13	℉	℃	Ambient Air Temperature	S									
14	S1_EDT_TEMP	AI10	523	03,04	X10	ADF 14	℉	℃	Sys 1 Eductor Temperature	S									
15	S2_EDT_TEMP	AI11	524	03,04	X10	ADF 15	℉	℃	Sys 2 Eductor Temperature	S									
16	S1_OIL_PRESS	AI12	525	03,04	X10	ADF 16	PSIG	BARG	Sys 1 Oil Pressure	S									
17	S2_OIL_PRESS	AI13	526	03,04	X10	ADF 17	PSIG	BARG	Sys 2 Oil Pressure	S									
18	S1_SUCT_PRES	AI14	527	03,04	X10	ADF 18	PSIG	BARG	Sys 1 Suction Pressure	S									
19	S2_SUCT_PRES	AI15	528	03,04	X10	ADF 19	PSIG	BARG	Sys 2 Suction Pressure	S									
20	S1_DSCH_PRES	AI16	529	03,04	X10	ADF 20	PSIG	BARG	Sys 1 Discharge Pressure	S									
21	S2_DSCH_PRES	AI17	530	03,04	X10	ADF 21	PSIG	BARG	Sys 2 Discharge Pressure	S									
22	S1_MC_FLA	AI18	531	03,04	X1	ADF 22	%	%	Sys 1 Motor Current FLA	S									
23	S2_MC_FLA	AI19	532	03,04	X1	ADF 23	%	%	Sys 2 Motor Current FLA	S									
24	S1_OP_HRS	AI20	533	03,04	X10	ADF 24	count	count	Sys 1 Operating Hours	S									
25	S2_OP_HRS	AI21	534	03,04	X1	ADF 25	count	count	Sys 2 Operating Hours	S									
26	S1_COMP_ST	AI22	535	03,04	X1	ADF 26	count	count	Sys 1 Compressor Starts	S									
27	S2_COMP_ST	AI23	536	03,04	X1	ADF 27	count	count	Sys 2 Compressor Starts	S									
28	S1_HI_MTR_T	AI24	537	03,04	X1	ADF 28	℉	℃	Sys 1 Highest Motor Temperature	S									
29	S2_HI_MTR_T	AI25	538	03,04	X1	ADF 29	℉	℃	Sys 2 Highest Motor Temperature	S									
30	VSD_OUT_FR	AI26	539	03,04	X10	ADF 30	Hz	Hz	VSD Output Frequency	S									
31	VSD_CMD_FR	AI27	540	03,04	X10	ADF 31	Hz	Hz	VSD Command Frequency	S									
32	S1_COND_DR	AI28	541	03,04	X10	ADF 32	%	%	Sys 1 Condenser Drain Valve % Open	S									
33	S2_COND_DR	AI29	542	03,04	X10	ADF 33	%	%	Sys 2 Condenser Drain Valve % Open	S									
34	S1_OP_CODE	AI30	543	03,04	X1	ADF 34	index	index	Sys 1 Operational Code	S									
35	S2_OP_CODE	AI31	544	03,04	X1	ADF 35	index	index	Sys 2 Operational Code	S									
36	S1_FLT_CODE	AI32	545	03,04	X1	ADF 36	index	index	Sys 1 Fault Code	S									
37	S2_FLT_CODE	AI33	546	03,04	X1	ADF 37	index	index	Sys 2 Fault Code	S									
38	S1_FAN_STG	AI34	547	03,04	X1	ADF 38	count	count	Sys 1 Condenser Fan Stage [0-14]	S									
39	S2_FAN_STG	AI35	548	03,04	X1	ADF 39	count	count	Sys 2 Condenser Fan Stage [0-14]	S									
40	S1_FAN_SPD	AI36	549	03,04	X1	ADF 40	%	%	Sys 1 Condenser Fan Speed [VSD]	O									
41	S2_FAN_SPD	AI37	550	03,04	X1	ADF 41	%	%	Sys 2 Condenser Fan Speed [VSD]	O									
42	LEAD	AI38	551	03,04	X1	ADF 42	index	index	Lead System [1,2]	S									
43	LCHLT_SETP	AI39	552	03,04	X10	ADF 43	℉	℃	Leaving Chilled Liquid Setpoint	S									
44	LCHLT_CUTOUT	AI40	553	03,04	X10	ADF 44	℉	℃	Leaving Chilled Liquid Cutout	S									
45	S1_ECON_VLV	AI41	554	03,04	X10	ADF 45	%	%	Sys 1 Economizer Valve % Open	S									
46	S2_ECON_VLV	AI42	555	03,04	X10	ADF 46	%	%	Sys 2 Economizer Valve % Open	S									
47	SUCT_PRS_CUT	AI43	556	03,04	X10	ADF 47	PSIG	BARG	Suction Pressure Cutout	S									
48	VSD_DCB_VT	AI44	557	03,04	X1	ADF 48	volts	volts	VSD DC Bus Voltage Unit VSD DC Bus Voltage Sys 1, Frame E/F	S									
49	VSD_DCB_VT2	AI45	558	03,04	X1	ADF 49	volts	volts	VSD DC Bus Voltage Sys 2, Frame E/F	S									

ITEM REF NUM	BACnet Name	BACnet Object Instance	Modbus Address	Modbus Data Type Supported	Modbus Scaling	N2 Metasys Address	ENG UNITS Imper	ENG UNITS SI	POINT LIST CODE: S = STANDARD O = OPTIONAL N = NOT AVAILABLE POINT LIST DESCRIPTION	1	2	3	4	5	6	7	8	9	10
					see note 5														
50	REM_SETPOINT	AI46	559	03,04	X10	ADF 50	℉	℃	Remote Leaving Chilled Liquid Setpoint	S									
51	S1_SUBCOOL	AI47	560	03,04	X10	ADF 51	℉	℃	Sys 1 Subcooling, Microchannel	O									
52	S1_EVAP_LL	AI48	561	03,04	X10	ADF 52	%	%	Sys 1 Evaporator Liquid Level, Round Tube	O									
53	S2_SUBCOOL	AI49	562	03,04	X10	ADF 53	℉	℃	Sys 2 Subcooling, Microchannel	O									
54	S2_EVAP_LL	AI50	563	03,04	X10	ADF 54	%	%	Sys 2 Evaporator Liquid Level, Round Tube	O									
55	COOLING_RNG	AI51	564	03,04	X10	ADF 55	℉	℃	Cooling Range	S									
56	S1_DSC_SHEAT	AI52	565	03,04	X10	ADF 56	℉	℃	Sys 1 Discharge Superheat	S									
57	S2_DSC_SHEAT	AI53	566	03,04	X10	ADF 57	℉	℃	Sys 2 Discharge Superheat	S									
58	S1_SYS_STATE	AI54	567	03,04	X1	ADF 58	index	index	Sys 1 System State [0=Stopped, 1=Running, 2=Faulted, 4=Locked Out, 5=Pre-Run]	S									
59	S2_SYS_STATE	AI55	568	03,04	X1	ADF 59	index	index	Sys 2 System State [0=Stopped, 1=Running, 2=Faulted, 4=Locked Out, 5=Pre-Run]	S									
59	S1_MTR_OVER	AI56	569	03,04	X1	ADF 60	Amps	Amps	Sys 1 Motor Current Overload Setting	S									
60	S2_MTR_OVER	AI57	570	03,04	X1	ADF 61	Amps	Amps	Sys 2 Motor Current Overload Setting	S									
61	FAN_TYPE	AI58	571	03,04	X1	ADF 62	index	index	Condenser Fan Control Type [1=Std. VSD, 2=Opt. VSD, 3=Std. Staged, 4=Opt. Staged]	S									
62	FC_MODE	AI59	572	03,04	X1	ADF 63	index	index	Free Cooling Mode [0=Mechanical, 1=Free Cooling, 2=Hybrid], FC enabled	O									
	BINARY READ ONLY POINTS																		
63	CH_ALARM	BI1	1282	01,02,03	n/a	BD 5	0/1	0/1	Chiller Alarm [0=No Alarm, 1=Alarm]	S									
64	CH_RUN	BI2	1283	01,02,03	n/a	BD 6	0/1	0/1	Chiller Run [0=Off, 1=On]	S									
65	EVAP_HEATER	BI3	1284	01,02,03	n/a	BD 7	0/1	0/1	Evaporator Heater [0=Off, 1=On]	S									
66	EVAP_PUMP	BI4	1285	01,02,03	n/a	BD 8	0/1	0/1	Evaporator Pump [0=Off, 1=On]	S									
67	S1_COMP_RUN	BI5	1286	01,02,03	n/a	BD 9	0/1	0/1	Sys 1 Compressor Run Status [0=Off, 1=On]	S									
68	S2_COMP_RUN	BI6	1287	01,02,03	n/a	BD 10	0/1	0/1	Sys 2 Compressor Run Status [0=Off, 1=On]	S									
69	S1_VI_STEP1	BI7	1288	01,02,03	n/a	BD 11	0/1	0/1	Sys 1 VI Step Solenoid Valve 1 Status [0=Off, 1=On]	S									
70	S2_VI_STEP1	BI8	1289	01,02,03	n/a	BD 12	0/1	0/1	Sys 2 VI Step Solenoid Valve 1 Status [0=Off, 1=On]	S									
71	S1_VI_STEP2	BI9	1290	01,02,03	n/a	BD 13	0/1	0/1	Sys 1 VI Step Solenoid Valve 2 Status [0=Off, 1=On]	S									
72	S2_VI_STEP2	BI10	1291	01,02,03	n/a	BD 14	0/1	0/1	Sys 2 VI Step Solenoid Valve 2 Status [0=Off, 1=On]	S									
73	WATER_GLYCOL	BI11	1292	01,02,03	n/a	BD 15	0/1	0/1	Water/Glycol [0=Water, 1=Glycol]	S									
74	LOCAL_REMOTE	BI12	1293	01,02,03	n/a	BD 16	0/1	0/1	Local/Remote [0=Local, 1=Remote]	S									
75	DISP_UNITS	BI13	1294	01,02,03	n/a	BD 17	0/1	0/1	Imperial/Metric [0=Imperial, 1=SI]	S									
76	S1_LOCKOUT	BI14	1295	01,02,03	n/a	BD 18	0/1	0/1	Sys 1 Lockout [0=Off, 1=On]	S									
77	S2_LOCKOUT	BI15	1296	01,02,03	n/a	BD 19	0/1	0/1	Sys 2 Lockout [0=Off, 1=On]	S									
78	FC_VALVE	BI16	1297	01,02,03	n/a	BD 20	0/1	0/1	Free Cooling Valve [0=Off, 1=On], FC enabled	O									
79	SOFT_SHUT	BI17	1298	01,02,03	n/a	BD 21	0/1	0/1	Soft Shutdown [0=Disabled, 1=Enabled]	S									
80	REM_EVAP	BI18	1299	01,02,03	n/a	BD 22	0/1	0/1	Remote Evaporator [0=Disabled, 1=Enabled]	O									
81	QUICK_ST	BI19	1300	01,02,03	n/a	BD 23	0/1	0/1	Quick Start [0=Disabled, 1=Enabled]	S									
82	FRAME_EF	BI20	1301	01,02,03	n/a	BD 24	0/1	0/1	Frame E/F [0=Disabled, 1=Enabled]	S									
83	SOUND_OPT	BI21	1302	01,02,03	n/a	BD 25	0/1	0/1	Sound Limit Option [0=Disabled, 1=Enabled]	S									

NOTES	
1	YVAA/FA chillers with a 031-03478-101microboard have native BACnet MS/TP, Modbus RTU and N2 communications. No external Gateway is needed for these interfaces unless Connected Chillers is desired.
2	BACnet Object Types: 0=Analog In, 1=Analog Out, 2= Analog Value, 3=Binary In, 4=Binary Out, 5=Binary Value, 8=Device, 15=Alarm Notification (0-127 are reserved ASHRAE Objects)
3	WC= Inches of water column; CFM = Cubic Feet per Minute; FPM = Feet per Minute: PSI = Lbs per square inch; Pa = Pascals; kPa = Kilopascals; PPM = Part Per Million; kJ/kg = Kilojoules per Kilogram
4	Values that are not applicable due to unit configuration and options will be sent as zero (0).
5	Modbus values are all of type signed. Scaling values in 10X BOLD indicate that scaling in Metric is X100. Scaling and signing can not be modified in the field.

YVAA/FA Operational and Fault/Inhibit Codes

Code Value	YVAA/FA Operational Code
	OPER.CODE
63	Manual Override
64	Daily Schedule Shutdown
65	Unit Switch OFF
66	Remote Controlled Shutdown
67	Loss of External Communications
68	Flow Switch Shutdown
69	VSD Cooling Shutdown
70	Serial Number Shutdown
74	No Run Permissive
75	Anti-Recycle Timer Active
76	System Switch OFF
77	System Not Running
78	System Running
79	Discharge Pressure Limiting
80	Suction Pressure Limiting
81	Motor Current Limiting
82	Free Cooling
83	ISN Motor Current Limiting
84	Remote Motor Current Limiting
85	System Pumping Down
86	VSD PreCharging
87	VSD Baseplate Temp Limiting
88	VSD Internal Ambient Temp Limiting
89	Sound Limiting
90	ISN Sound Limiting
91	Remote Sound Limiting
92	Pulldown Motor Current Limiting
93	Cooling Demand Shutdown

Code Value	YVAA/FA Fault/Inhibit Code
	FAULT/INHIBIT.CODE
0	No Fault/Inhibit
1	Low Ambient Temperature
2	High Ambient Temperature
3	Low Chilled Liquid Temperature
4	VSD Initialization Failure
5	Low RTC Battery Voltage
6	Invalid Number of Compressors Selected
7	VSD Communications Failure
8	Pre-charge Low DC Bus Voltage
9	Pre-charge DC Bus Voltage Imbalance
10	High DC Bus Voltage
11	Low DC Bus Voltage
12	DC Bus Voltage Imbalance
13	High VSD Ambient Temperature
14	Single Phase Input
15	VSD Power Supply Fault
16	VSD Logic Board Fault
17	Motor Current Overload (Hardware)
18	CT Plug Fault
27	High Discharge Pressure (Software)
28	High Differential Oil Pressure
29	Low Differential Oil Pressure
30	Low Suction Pressure
31	High Discharge Temperature
33	Eductor Clog Fault
34	Sensor Failure
35	Low Motor Current
36	High Motor Temperature
37	Pre-charge Low DC Bus Voltage
38	Pre-charge DC Bus Voltage Imbalance
39	High DC Bus Voltage
40	Low DC Bus Voltage
41	DC Bus Voltage Imbalance
42	High Motor Current
43	Motor Current Overload (Software)
44	IGBT Gate Driver Fault
45	High Baseplate Temperature
46	Single Phase Input
47	VSD Run Signal Fault
48	High Discharge Press (Hardware – HPCO)
50	Control Voltage Fault
51	Low Discharge Superheat