BACnet Points for Single Compressor Water-to-Air Heat Pumps Utilizing the FX10 Controller

All volatile (Output) type points will revert to the uncommanded values after a power interruption. These have no limit on the number of writes in a lifetime. The nonvolatile (Value) type points have their values stored in flash memory and they retain their values through a power outage. These have a limited life-time number of write cycles, about 2,000,000. Excessive writes to these will cause controller failure.

Depending on the type of BAS that you are using to integrate the controllers, you will either have an uncommanded value of 254 or 255 for the multistate inputs, outputs and values. For the BAS systems that show 254 as the uncommanded value, you will read/write a "0" for the "Off" command and "1" for the "On" command. For the BAS that shows 255 you will read/write a "1" for the "Off" command and a "2" for the "On" command.

	Analog Inputs	***Read/Write***	***Description***
AI1	Space Temp	Read	Shows the sensor value connected to terminals RS and AIC on the terminal board.
AI2	Discharge Air	Read	Shows value of field mounted sensor unless supplied as a factory special.
AI3	Effective Clg Setpt	Read	Shows the effective cooling setpoint.
AI4	Effective Hgt Setpt	Read	Shows the effective heating setpoint.
AI5	Space Humidity	Read	Shows the space humidity if sensor is connected.
AI6	Water Coil Temp	Read	Shows the refrigerant temperature near the coaxial heat exchanger.
AI7	Low Temp Limit	Read	Shows the water coil low temp limit value.
AI8	ECM Cmd Output	Read	Shows the commanded speed of the ECM blower motor. 0-100%
AI9	Alarms Enumerated	Read	Shows a value from 0-9, Refer to alarms table for descriptions.
AI10	AO2 Value	Read	Shows the commanded value for analog output 2 override.

Warning: Reverts to "Uncommanded" after a power cycle. These are volatile memory and allow unlimited writes.

	Analog Outputs	***Read/Write***	***Description***
AO1	Space Setpoint	Write	Adjust the midpoint value between Effective Clg Setpt and Effective Htg Setpt, raises or lowers both from a single command.
AO2	ECM Fan Override	Write	Allows for network control of the ECM blower motor speed.
AO3	AO2 Override	Write	Allows for network control of the analog output 2.

AO4	Space Temp Override	Write	Allows for the space temp to be overridden, this will supersede any space sensor connected to the analog input.

Warning: *These are written in Flash memory and have about 2,000,000 write cycles. Should only be written to by manual writes or through a scheduled writes, not by the automated reset process.* **EXCESSIVE WRITES WILL CAUSE CONTROLLER FAILURE, THIS WILL NOT BE COVERED UNDER WARRANTY!**

Analog Values		***Read/Write***	***Description***
AV1	Occupied Cool	Write	Occupied cooling setpoint, nonvolatile.
AV2	Unoccupied Cool	Write	Unoccupied cooling setpoint, nonvolatile.
AV3	Occupied Heat	Write	Occupied heating setpoint, nonvolatile.
AV4	Unoccupied Heat	Write	Unoccupied heating setpoint, nonvolatile.
AV5	nciRemote Setpt Span	Write	Allows for adjustment of the setpoint shift span value. Default is 2.7°C
AV6	Remote Setpt Bias	Write	Used to calibrate the setpoint shift center point.
AV7	Space Temp Offset	Write	Allows for adjustment to the zone sensor input, used to calibrate the zone temp reading on the network.
AV8	nciAux5LevP	Write	Allows for adjustment of the humidity setpoint that will enable the heatpump to enter passive dehumidification.
AV9	Low Temp Limit Adj	Write	Used to set the low water coil temp limit for freeze detection.

Warning: To allow for AV10, AV11 and AV12 to have direct control of the ECM blower motor, you must first command MV1,MV2,MV3 to "ON" or a 2. Then you can write the desired fan speed percentage to the AV's.

AV10	Fan Only Speed	Write	Allows for the network to command the ECM blower fan only speed.
AV11	Fan Medium	Write	Allows for the network to command the ECM blower medium speed.
AV12	Fan High	Write	Allows for the network to command the ECM blower high speed.

Warning: If your uncommanded value is 254 then the numeric values listed below will be 1 less than what is described.

Multistate Inputs		***Read/Write***	***Description***
MI1	Effective Occupancy	Read	Shows the current occupancy status of the heatpump. 1=Occupied, 2=Unoccupied, 3=Bypass(Temporary Occupancy)
MI2	Mode	Read	Shows the current mode of the heatpump. 1=Auto, 2=Heat, 3=Morning Warm-up, 4=Cool, 5=Night Purge, 6=Pre Cool, 7=Off(Shutdown), 8=Test, 9=Emergency Heat

MI3	Fan Cmd Status	Read	Shows the commanded status of the fan. 1=Off, 2=On
MI4	Comp Cmd Status	Read	Shows the commanded status of compressor. 1=Off, 2=On
MI5	Comp Hi Capacity Cmd	Read	Shows the commanded status of high capacity compressor valve. 1=Off, 2=On
MI6	Reversing Valve	Read	Shows the commanded position of the reversing valve. 1=Heating, 2=Cooling
MI7	Accessory 1 Output	Read	Shows the current state of the ACC 1(X1) output. 1=Off, 2=On
MI8	Accessory 2 Output	Read	Shows the current state of the ACC 2(X2) output. 1=Off, 2=On
MI9	Dirty Filter BI-12	Read	Shows the current state of the digital input 12. 1=Off, 2=On
MI10	Alarm Status	Read	Shows the current state of the alarm status output. 1=Off, 2=On
MI11	BO5 Output	Read	Shows the current state of the BO5 output. 1=Off, 2=On
MI12	BO-9 Output	Read	Shows the current state of the BO-9 output. 1=Off, 2=On
MI13	Dehum	Read	Shows the current state of the dehumidistat input. 1=Open, 2=Closed

Warning: If your uncommanded value is 254 then the numeric values listed below will be 1 less than what is described.

Multistate Outputs	*Read/Write*	*Description*
MO1 Occupancy Command	Write	Allows for network command to the occupancy input of the heatpump. 1=Occupied, 2=Unoccupied, 3=Bypass,4=Standby
MO2 Fan Command	Write	Allows for network command equivalent of a thermostat 'G' call. 1=Off, 2=On
MO3 Compressor Cmd(Y1)	Write	Allows for network command equivalent of a thermostat 'Y1' call. 1=Off, 2=On
MO4 Compressor Cmd(Y2)	Write	Allows for network command equivalent of a thermostat 'Y2' call. 1=Off, 2=On
MO5 Reversing Vlv Cmd	Write	Allows for network command equivalent of a thermostat 'O' call. 1=Heat, 2=Cooling
MO6 Emergency Override	Write	Allows for network command to put the unit in emergency shutdown. 1=Normal, 5=Shutdown
MO7 Alarm Reset	Write	Allows for remote reset of manual reset alarms, must write to a 2 then back to a 1 for reset to take effect.

MO8	Emergency Heat BO5	Write	Allows for network control of binary output 5. 1=Off, 2=On
MO9	BO9	Write	Allows for network control of the binary output 9. 1=Off, 2=On
MO10	Dehum Cmd	Write	Allows for network command to for passive dehumidification. 1=Off, 2=Dehumidify

Warning: If your uncommanded value is 254 then the numeric values listed below will be 1 less than what is described.

Multistate Values		*Read/Write*	*Description*
MV1	SW1	Write	Used to command on ECM switch 1, then use AV10 to write a percentage between 0-100 to control the fan only speed of ECM blower. 1=Off, 2=On
MV2	SW2	Write	Used to command on ECM switch 2, then use AV11 to write a percentage between 0-100 to control the medium speed of ECM blower. 1=Off, 2=On
MV3	SW3	Write	Used to command on ECM switch 3, then use AV12 to write a percentage between 0-100 to control the high speed of ECM blower. 1=Off, 2=On
MV4	Dehum Ena/Dis	Write	Allows a network command to disable and enable the passive dehumidification input. If commanded off, dehumidification will never operate. 1=Off, 2=On
MV5	SensorSel	Write	A "1" selects the TAXXJ02, TAXXA03, TAXXA04. A "2" selects the TAXXA01.
MV6	Fan Cycling	Write	Allows for network selection of continuous fan of cycled fan operation. 1=Continuous, 2=Cycled

PROFXENV-00 Alarm Table	
#	Description
0	No Alarm
1	Condensate Detected
2	Compressor High Discharge Pressure
3	Compressor Low Suction Pressure
4	Freeze Protection
8	Faulty Freeze Sensor Alarm
9	Loss of Charge