

# BACnet Points for Dual 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.

<i>Analog Inputs</i>	<i>Read/Write</i>	<i>Description</i>
AI1 Space Temp	Read	Shows the sensor value connected to terminals RS and AIC on the terminal board.
AI2 Discharge Air	Read	Shows sensor value connected to AI4 on the FX10.
AI3 Freeze Temp 1	Read	Shows the water coil heat exchanger temperature for circuit 1.
AI4 Freeze Temp 2	Read	Shows the water coil heat exchanger temperature for circuit 2.
AI5 Active Clg Setpt	Read	Shows the effective cooling setpoint value.
AI6 Active Hgt Setpt	Read	Shows the effective Heating setpoint value.
AI7 Freeze Temp Limit	Read	Shows the low temperature limit of the water coil heat exchanger.
AI8 nvoAlarms	Read	Shows the current alarm status of the heat pump. Refer to the Alarms table for a description of each enumeration.
AI9 Economizer Temp	Read	Shows the current alarm status of the heat pump. Refer to the Alarms table for a description of each enumeration.

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

<i>Analog Outputs</i>	<i>Read/Write</i>	<i>Description</i>
AO1 Common Setpoint	Write	Adjust the midpoint value between Active Clg Setpt and Active Htg Setpt, raises or lowers both from a single command.
AO2 Space Temp Ovrđ	Write	Override the space temperature reading.

**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!**

<b>Analog Values</b>	<b>Read/Write</b>	<b>Description</b>
AV1 Occupied Cool	Read/Write	Occupied cooling setpoint, nonvolatile.
AV2 Occupied Heat	Read/Write	Occupied heating setpoint, nonvolatile.
AV3 Unoccupied Cool	Read/Write	Unoccupied cooling setpoint, nonvolatile.
AV4 Unoccupied Heat	Read/Write	Unoccupied heating setpoint, nonvolatile.
AV5 Economizer Setpt	Read/Write	Adjust the temperature threshold for economizer operation.
AV6 Max Hgt Setpt	Read/Write	The upper limit that the heating setpoint may be adjusted to.
AV7 Min Clg Setpt	Read/Write	The lower limit that the cooling setpoint may be adjusted to.
AV8 Remote Setpt Max	Read/Write	Allows for adjustment of the sensor setpoint shift value on the plus side.
AV9 Remote Setpt Min	Read/Write	Allows for adjustment of the sensor setpoint shift value on the negative side.
AV10 Zone Temp Offset	Read/Write	Allows for adjustment to the zone sensor input, used to calibrate the zone temp reading on the network.
AV11 Econo Temp Offset	Read/Write	Allows adjustment to the economizer water temp sensor input, used to calibrate the economizer temp reading on the network.

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

<b>Multistate Inputs</b>	<b>Read/Write</b>	<b>Description</b>
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 (Normal), 7=Off(Shutdown)
MI3 Comp/Fan Prove	Read	Shows the contact status of digital input 4. Requires one or two field installed current relays wired in series for valid readings. 1=Off, 2=On
MI4 Fan Cmd Status	Read	Shows the commanded status of the fan. 1=Off, 2=On
MI5 Comp1 Cmd Status	Read	Shows the commanded status of compressor 1. 1=Off, 2=On

MI6	Comp2 Cmd Status	Read	Shows the commanded status of compressor 2. 1=Off, 2=On
MI7	Rev Valve Status	Read	Shows the commanded position of the reversing valve. 1=Heating, 2=Cooling
MI8	BO-5/Elect Heat	Read	Shows the commanded status of the binary output 5 for electric heat. 1=Off, 2=On
MI9	BO-9 Spare	Read	Shows the commanded status of the spare binary output 9. 1=Off, 2=On

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

<i>Multistate Outputs</i>	<i>Read/Write</i>	<i>Description</i>	
MO1	Occupancy Command	Write	Allows for a 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	Comp1 Command (Y1)	Write	Allows for network command equivalent of a thermostat 'Y1' call. 1=Off, 2=On
MO4	Comp2 Command (Y2)	Write	Allows for network command equivalent of a thermostat 'Y2' call. 1=Off, 2=On
MO5	Rev Vlv Cmd	Write	Allows for network command equivalent of a thermostat 'O' call. 1=Heat, 2=Cooling
MO6	Emergency Override	Write	Allows for a network command to put the unit in emergency shutdown. 1=Auto, 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	BO5 Elect Heat	Write	Allows for network control of binary output 5, can be used for electric heat (this is interlocked with BI4), requires MV2 to be set to EmgHeat. 1=Off, 2=On
MO9	BO9 Spare	Write	Allows for network control of binary output 9. 1=Off, 2=On

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<i>Multistate Values</i>	<i>Read/Write</i>	<i>Description</i>
MV1 Economizer Enable	Write	Enable/Disable logic that controls economizer. 1=Off, 2=On
MV2 Electric Heat Mode	Write	Changes control of the BO5 from network control to emergency heat. Emergency heat requires DI4 to be wired to fan proving current switch on DI4. 1=EmgHeat, 2=Network Control
MV3 Fan Operation	Write	Changes the fan operation from continuous to cycled. 1=Continuous, 2=Cycled

#	Description
0	No Alarm
1	Condensate Detected
2	Compressor 1 High Discharge Pressure
3	Compressor 1 Low Suction Pressure
4	Circuit 1 Low Temp Limit on Coax
5	Compressor 2 High Discharge Pressure
6	Compressor 2 Low Suction Pressure
7	Circuit 2 Low Temp Limit on Coax
8	Circuit 1 Bad Refrigerant Temp Sensor
9	Circuit 2 Bad Refrigerant Temp Sensor