BACnet
Heatpump Configuration Properties

BACnet Object Type: Analog Value

Datatype: Real

Name	Default	Min	Max	BACnet Object ID	BACnet Object Name	BACnet Units	BACnet Notes
Fan Heat SP	10	0	100	18	FanHeatSP	98 (percent)	
Fan Cool SP	10	0	100	19	FanCoolSP	98 (percent)	
Fan Min Cycle Time	15	0	120	20	FanMinOn	72 (minutes)	
Cool SP 1	35	5	95	21	Cool1SP	98 (percent)	
Cool Diff 1	20	8	99	22	Cool1Diff	98 (percent)	
Heat SP 1	55	5	95	23	Heat1SP	98 (percent)	
Heat Diff 1	20	8	99	24	Heat1Diff	98 (percent)	
Analog Output 1 SP	40	1	95	25	AO1SP	98 (percent)	
Analog Output 1 Heat Band	60	0	99	26	AO1Band	98 (percent)	
Preheat SP	21.5	15	99	27	PhSP	62 (celcius)	
Preheat Prop	20	0	50	28	PhProp	62 (celcius)	
Preheat Integ	15	0	240	29	PhInteg	72 (minutes)	
Compressor Min ON Time	2	0	10	30	MinON	72 (minutes)	
Compressor Min OFF Time	5	1	15	31	MinOFF	72 (minutes)	
OutTemp Low Balance Point	-8	-100	20	32	LoBalPnt	62 (celcius)	
Safety Seq Time	30	10	60	33	SafeSeqTm	72 (minutes)	
Emergency Heat Activation Demand	90	60	100	34	EmHeatDem	98 (percent)	
Emergency Heat Activation Temperature	25	20	45	35	EmHeatTmp	62 (celcius)	
Return Temp Lim C1	14	10	40	36	RetLimC1	62 (celcius)	
Return Temp Lim Heat	35	0	50	37	RetLimH	62 (celcius)	
Supply Temp Lim Fan Stop	4	-40	40	38	SupFanStp	62 (celcius)	
Supply Temp Lim Fan Start	12	-38	60	39	SupFanStart	62 (celcius)	
Out Temp Preheat En	12	-100	21	40	OutPhEn	62 (celcius)	
Out Temp Lim C1	-40	-40	40	41	OutLimC1	62 (celcius)	
Out Temp Lim Heat	30	0	50	42	OutLimH	62 (celcius)	
Out Unoc Fan Restart Lo	-40	-40	40	43	OutFanLimL	62 (celcius)	

Out Unoc Fan Restart Hi	40	-40	40	44	OutFanLimH	62 (celcius)	
Deadband Heat Cool	20	0	30	45	PrioDB	98 (percent)	
Priority switch out temp	8	-20	30	46	PrioTemp	62 (celcius)	
Priority switch diff	4	0	20	47	PrioDiff	62 (celcius)	
Supply Temp Offset	0	-20	20	48	SupOff	62 (celcius)	
Out Temp Offset	0	-20	20	49	OutOff	62 (celcius)	
Return Temp Offset	0	-20	20	50	RetOff	62 (celcius)	
Math1 Group	0	0	250	51	Math1Gr	95 (None)	
Math2 Group	0	0	250	52	Math2Gr	95 (None)	
Math3 Group	0	0	250	53	Math3Gr	95 (None)	
Math4 Group	0	0	250	54	Math4Gr	95 (None)	
Math5 Group	0	0	250	55	Math5Gr	95 (None)	
Demand Filter	10	0	100	56	DemdFilt	98 (percent)	
List Refresh Rate	30	0	250	57	ListRefr	72 (minutes)	0=No list refresh
Math Refresh Rate	3	1	250	58	MathRefr	73 (seconds)	0=No math refresh
Cool Prio Zone 1	0	0	127	59	CoolPrio1	95 (None)	0=No cool prio zone
Cool Prio Zone 2	0	0	127	60	CoolPrio2	95 (None)	0=No cool prio zone
Cool Prio Zone 3	0	0	127	61	CoolPrio3	95 (None)	0=No cool prio zone
Morning Warm Up Time	0	0	300	62	MWUpTime	72 (minutes)	
Out Overr Temp1	-20	-30	40	63	OutOvr1	62 (celcius)	
Out Overr Temp2	-20	-30	40	64	OutOvr2	62 (celcius)	
SupplyCoolLimit	9	-40	40	65	SupLimC	62 (celcius)	
SupplyHeatLimit	50	21.5	100	66	SupLimH	62 (celcius)	
AllDamperOverride	255	0	255	67	AllDampOvr	98 (percent)	Overrides all slave dampers to this position. Set 8th bit=1 to override based on flow (% of configured range). Set to 255 to remove override. Set to 254 to use MAX configured pos/flow. Set to 253 to use MIN configured pos/flow.
Supply Analog Output Modulating Limit	40	21.5	100	68	SupLimModH	62 (celcius)	If output 5 is modulating it will limit itself to this temp in the supply
Cool SP 2	60	5	95	69	CoolSP2	98 (percent)	
Cool Diff 2	40	8	99	70	CoolDiff2	98 (percent)	
Heat SP 2	85	5	95	71	HeatSP2	98 (percent)	

Heat Diff 2	20	8	99	72	HeatDiff2	98 (percent)	
CoolAltSP	75	5	95	73	CoolAltSP	98 (percent)	
CoolAltDiff	20	8	99	74	CoolAltDiff	98 (percent)	
EconoMinDampPos	0	0	100	75	EcMinDampPos	98 (percent)	
Econo Change Over Temp	13	-40	40	76	EcChOvTmp	62 (celcius)	
Econo Change Over Diff	3	0	20	77	EcChOvDiff	62 (celcius)	
EconoSP	20	1	95	78	EconoSP	98 (percent)	
EconoProp	30	0	100	79	EconoProp	98 (percent)	
Outside Damper Diff	5	0	100	80	OutDampDiff	98 (percent)	
Return Temp Lim C2	20	10	40	81	RetLimC2	62 (celcius)	
Out Temp Lim C2	12	-40	40	82	OutLimC2	62 (celcius)	
EconoLimTemp	13	5	30	83	EcMinSup	62 (celcius)	
EconoMornVentTime	60	0	250	84	EcMVTime	72 (minutes)	
PressSP	0.75	0	2	85	PressSP	58 (inches H2O)	
PressDiff	0.15	0	1	86	PressDiff	58 (inches H2O)	
DampDelay	95	15	300	87	DampDelay	73 (seconds)	
PressOffset	0	-1	1	88	PressOff	58 (inches H2O)	
Day Heat SP	21.5	-30	40	89	DayHeatSP	62 (celcius)	
DayCoolSP	22.5	-29.5	55	90	DayCoolSP	62 (celcius)	
Min Heat SP	19	-30	40	91	MinHeatSP	62 (celcius)	
Max Heat SP	25	-30	40	92	MaxHeatSP	62 (celcius)	
Min Cool SP	20	-29.5	55	93	MinCoolSP	62 (celcius)	
Max Cool SP	26	-29.5	55	94	MaxCoolSP	62 (celcius)	
Unoc Heat Offset	3	0	20	95	UnocHtSB	62 (celcius)	
Unoc Cool Offset	5	0	20	96	UnocCoSB	62 (celcius)	
Unoc Heat SP Lim	15	-30	40	97	UnocHSPLim	62 (celcius)	
Unoc Cool SP Lim	30	-29.5	55	98	UnocCSPLim	62 (celcius)	
Thermostat Min	15	-30	40	99	ThermMin	62 (celcius)	
Thermostat Max	30	-30	40	100	ThermMax	62 (celcius)	
Zone Temp Offset	0	-15	15	101	ZnTmpOff	62 (celcius)	
Zone Proportionnal Band	3	0	10	102	ZoneProp	62 (celcius)	
Zone Cool Integ	15	0	120	103	ZoneIntegC	72 (minutes)	
Zone Heat Integ	15	0	120	104	ZoneIntegH	72 (minutes)	
Group Code 1	0	0	250	105	GrCode1	95 (None)	
Group Code 2	0	0	250	106	GrCode2	95 (None)	
Group Code 3	0	0	250	107	GrCode3	95 (None)	
Group Weight 1	0	0	15	108	GrWgt1	95 (None)	

Group Weight 2	0	0	15	109	GrWgt2	95 (None)	
Group Weight 3	0	0	15	110	GrWgt3	95 (None)	
Global Weight	1	0	60	111	GlbWgt	95 (None)	
Unoc Override Time	120	0	720	112	UnocOvrTm	72 (minutes)	
Water Supply Calibration	0	-20	20	113	WtrSupOff	62 (celcius)	
Preheat Low Limit	13	5	40	114	PhLowLim	62 (celcius)	
Econo Max Temp	18	5	30	115	EcMaxTemp	62 (celcius)	Max Econo Temp for Supply Temperature Control
VFD Min Voltage	3	0	10	117	VFDmin	5 (Volts)	Applicable only when VFD is in use (not bypass damper)
VFD Max Voltage	10	0	10	118	VFDmax	5 (Volts)	Applicable only when VFD is in use (not bypass damper)
Zone Setpoint Calib	0	-20	20	119	ZnSpCal	62 (celcius)	This offset is applied to the Default Heating Setpoint or to the setpoint provided by an attached potentiometer.

BACnet
Heatpump Configuration Properties

BACnet Object Type: MultiState Value

Datatype: Unsigned Integer

Name	Default	Min	Max	BACnet Object ID	BACnet Object Name	BACnet Notes
Fan Interm Heat Source	0	0	4	3	FanHtSrc	1=Math1 / 2=Math2 / 3=Math3 / 4=Math4 / 5=Math5
Fan Interm Cool Source	0	0	4	4	FanCoSrc	1=Math1 / 2=Math2 / 3=Math3 / 4=Math4 / 5=Math5
Fan Unoccupied Sequence	2	0	4	5	FanUnocSeq	1=OFF / 2=Intermittent HEAT / 3=Intermittent COOL / 4=Intermittent BOTH / 5=ON
Fan Override Sequence	4	0	4	6	FanOvrSeq	1=OFF / 2=Intermittent HEAT / 3=Intermittent COOL / 4=Intermittent BOTH / 5=ON
Cooling Dem Source	0	0	4	7	CoolMathSrc	1=Math1 / 2=Math2 / 3=Math3 / 4=Math4 / 5=Math5
Heat Demand Source	0	0	4	8	HeatMathSrc	1=Math1 / 2=Math2 / 3=Math3 / 4=Math4 / 5=Math5
Analog Output 1 Function	0	0	3	9	AO1Fct	1=None / 2=Preheat only / 3=Preheat and heating / 4=Heating only
Analog Output 1 Range	0	0	2	10	AO1Range	1=0-10V / 2=2-10V / 3=0-5V
Math1 Source	0	0	255	11	Math1Src	1=WeightedAverage / 2=MaxHeating / 3=MaxCooling / 4=WeightedAverage (HeatOnly) / 5=WeightedAverage(CoolOnly) / 6=MathOccupancy / 7=MathOverride / 8=RadiantReq / Else=OFF
Math2 Source	0	0	255	12	Math2Src	1=WeightedAverage / 2=MaxHeating / 3=MaxCooling / 4=WeightedAverage (HeatOnly) / 5=WeightedAverage(CoolOnly) / 6=MathOccupancy / 7=MathOverride / 8=RadiantReq / Else=OFF
Math3 Source	0	0	255	13	Math3Src	1=WeightedAverage / 2=MaxHeating / 3=MaxCooling / 4=WeightedAverage (HeatOnly) / 5=WeightedAverage(CoolOnly) / 6=MathOccupancy / 7=MathOverride / 8=RadiantReq / Else=OFF
Math4 Source	0	0	255	14	Math4Src	1=WeightedAverage / 2=MaxHeating / 3=MaxCooling / 4=WeightedAverage (HeatOnly) / 5=WeightedAverage(CoolOnly) / 6=MathOccupancy / 7=MathOverride / 8=RadiantReq / Else=OFF

Math5 Source	0	0	255	15	Math5Src	1=WeightedAverage / 2=MaxHeating / 3=MaxCooling / 4=WeightedAverage (HeatOnly) / 5=WeightedAverage(CoolOnly) / 6=MathOccupancy / 7=MathOverride / 8=RadiantReq / Else=OFF
OutTempOverrEn1	0	0	15	16	OutOvrEn1	1=OFF / 2=ON when LESS / 3=ON when MORE
OutTempOverrEn2	0	0	15	17	OutOvrEn2	1=OFF / 2=ON when LESS / 3=ON when MORE
Net Baud	3	0	5	18	Baud1	1=9600 / 2=19200 / 3=38400 / 4=57600 / 5=76800 / 6=115200
Net Parity	0	0	2	19	Parity1	1=NONE / 2=ODD / 3=EVEN
RJ45 Baud	3	0	5	20	Baud2	1=9600 / 2=19200 / 3=38400 / 4=57600 / 5=76800 / 6=115200
RJ45 Parity	0	0	2	21	Parity2	1=NONE / 2=ODD / 3=EVEN
EconoRange	0	0	2	22	EcRange	1=0-10V / 2=2-10V / 3=0-5V
DampSpeed	2	0	4	23	DampSpd	1=fastest / 5=slowest
BypassRange	1	0	2	24	BpRange	1=0-10V / 2=2-10V / 3=0-5V
DST Active Month	3	1	12	25	DSTactMon	1=January … 12=December
DST Active Week	1	0	4	26	DSTactWeek	1= First weekend of month … 5=5th weekend of month
DST Deactive Month	11	1	12	27	DSTdeactMon	1=January … 12=December
DST Deactive Week	0	0	4	28	DSTdeactWeek	1= First weekend of month … 5=5th weekend of month
Fan Override	0	0	2	29	FanOvrd	1=Auto / 2=OFF / 3=ON
Input 4 Mode	0	0	3	30	In4Mode	1=OFF / 2=Filter Sensor / 3=Schedule Override / 4=Water Intake Temperature for Water-To-Air mode
Fan Occupied Mode	4	0	4	31	FanOccSeq	1=OFF / 2=Intermittent HEAT / 3=Intermittent COOL / 4=Intermittent BOTH / 5=ON
Econo Control Mode	0	0	1	32	EcCtrlMode	1=Damper Position Control / 2=Supply Temperature Control
Econo Damper Speed	2	0	4	33	EcDampSpd	1=Slowest / 5=Fastest
Input 1 Mode	0	0	2	34	In1Mode	1=Outside Temperature / 2=Water Intake Temperature (Water to Air mode only) / 3=Alarm Input Mode (Water to Air VC1000 only)
Pressure Input Range	0	0	3	35	PrsRange	1= 0-1 inch H20 / 2=0-2.5 inch H20 / 3=0-2 inch H20 / 4=0-1.5 inch H20

BACnet
Heatpump Configuration Properties

BACnet Object Type: BinaryValue

Datatype: Enumerated

Name	Default	BACnet Object ID	BACnet Object Name	BACnet Notes
Analog Output 1 Reverse Acting	0	15	AO1RevAct	0=Normal / 1=Rev Acting
Analog Output 1 Pulsed	0	16	AO1Pulsd	0=Modulating / 1=Pulsing
Analog Output 1 Heat Mode	0	17	AO1HtMode	0=Proportionnal / 1=Differential
Rev Valve Mode	0	18	RevValMode	0=Powered when Cooling / 1=Powered when Heating
AddOn	0	19	AddOn	0=No Add On / 1=Yes Add On
Safety Seq En	0	20	SafeSeqEn	0=Disabled / 1=Enabled
AuxHeatON	0	21	AuxHeatOn	0=Auto / 1=Always use AuxHeat, forget compressor
Priority Mode	1	22	PrioMode	0=Auto / 1=Manual
Manual Priority	1	23	ManPrio	0=Heat / 1=Cool
MWUpEn	0	24	MWUpEn	0=OFF / 1=ON
Net StopBits	0	25	StBits1	0=1 Stop Bit / 1=2 Stop Bits
RJ45 StopBits	0	26	StBits2	0=1 Stop Bit / 1=2 Stop Bits
NumCompr	1	27	NumCompr	0 = 1 stage / 1 = 2 stages
UseEcono	0	28	UseEcono	0=No economizer / 1=Use Economizer
EconoComprOK	0	29	EcComprOK	0=Compressor disabled when economizer in use / 1=Compressor alternate setpoints enabled when economizer in use
DamperDir	0	30	DampDir	0=CCW / 1=CW
UseDST	1	31	UseDST	Automatically adjust for daylight savings time (0=NO / 1=YES)
WaterToAir	0	33	WaterToAir	0= Air-to-Air / 1= Water-To-Air
Enable Absolute Overrides	0	34	EnAbsOverr	0=Overrides are protected by limits and timing delays / 1=Overrides obey the users commands absolutely (no protection - use at own risk)
Math Unoccupied Mode	0	35	MathUnocMode	0=Averaging math functions are replaced with Max Demand during unoccupied mode / 1=No change to math functions during unoccupied mode
Pressure Input Voltage Range	0	36	PrsVoltRng	0=0-5VDC / 1=1-5VDC

Cooling Priority Low Stage Only	0	37	PrioLoOnly	When set to 1, cooling priority zones cannot activate the second stage of cooling
Ignore Proor of Fan	0	38	IgnPrfFan	0=Proof of Fan Required for Auxiliary Heat / 1=Auxiliary Heat does not require proof of fan

BACnet
Heatpump Network Variables

BACnet Object Type: Analog Value

Datatype: Real

Name	BACnet Object ID	BACnet Object Name	BACnet Writable	BACnet Units	BACnet Notes
Outside Temp	1	OutTmp	TRUE	62 (celcius)	
Return Temp	2	RetTmp	TRUE	62 (celcius)	
Supply Temp	3	SupTmp	TRUE	62 (celcius)	
Zone Temp	4	ZoneTmp	TRUE	62 (celcius)	
Heat SP	5	HeatSP	TRUE	62 (celcius)	
Cool SP	6	CoolSP	TRUE	62 (celcius)	
Pressure	7	Press	TRUE	58 (inches H2O)	
Demand	8	Demand	FALSE	98 (percent)	
Math1	9	Math1	FALSE	98 (percent)	
Math2	10	Math2	FALSE	98 (percent)	
Math3	11	Math3	FALSE	98 (percent)	
Math4	12	Math4	FALSE	98 (percent)	
Math5	13	Math5	FALSE	98 (percent)	
Analog Heating	14	AnHeat	TRUE	98 (percent)	Set to 255 to remove override
Bypass Pos	15	BypassPos	TRUE	98 (percent)	Set to 255 to remove override
EconoPos	16	EconoPos	TRUE	98 (percent)	Set to 255 to remove override
Water Supply Temp	17	WtrSupTmp	TRUE	62 (celcius)	
Econo Target	116	EconTarg	FALSE	62 (celcius)	The target supply temperature of the economizer (only valid if Control Mode is set to Suppply Control).

BACnet
Heatpump Network Variables

BACnet Object Type: BinaryValue

Datatype: Enumerated

Name	BACnet Object ID	BACnet Object Name	BACnet Writable	BACnet Notes
Occupancy Input	1	Occup	TRUE	0=OFF / 1=ON (Can only be written to when BV2 is set to Manual)
Auto Occupancy	2	AutoOcc	TRUE	0=Manual (BV1 can be written to), 1=Auto (Internal schedule used)
Unocc Override	3	UnoccOvr	TRUE	0=AUTO / 1=Activate override from unoccupied mode
Fan Proof	4	FanPrf	TRUE	0=AUTO / 1=PROOF OF FAN
Filter State	5	Filter	FALSE	0=OK / 1=DIRTY
Alarm State	6	Alarm	FALSE	0=OK / 1=ALARM
Fan Action	7	FanAct	FALSE	0=FAN COMMANDED OFF / 1= FAN 0=FAN COMMANDED OFF / 1= FAN COMMANDED ON
Compressor1	8	Compr1	FALSE	0=OFF / 1=ON
Compressor2	9	Compr2	FALSE	0=OFF / 1=ON
Rev Valve	10	RevValve	FALSE	0=COOLING / 1=HEATING
Auxiliary Heating	11	AuxHeat	FALSE	0=AUX HEAT OFF / 1=AUX HEAT ON
MWUp Active	12	MWUpAct	FALSE	0=MORNING WARMUP PERIOD NOT ACTIVE / 1=MORNING WARMUP PERIOD ACTIVE
OutOverride1 Active	13	OutOvr1Act	FALSE	0=OVERRIDE OFF / 1=OVERRIDE ON
OutOverride2 Active	14	OutOvr2Act	FALSE	0=OVERRIDE OFF / 1=OVERRIDE ON

BACnet
Heatpump Network Variables

BACnet Object Type: MultiState Value

Datatype: Unsigned Integer

Name	BACnet Object ID	BACnet Object Name	BACnet Writable	BACnet Notes
Heatpump Status	1	HPState	FALSE	1=FAN_OFF / 2=VENTILATING / 3=COOLING / 4=HEATPUMP / 5=EMERGENCY / 6=AUXILIARY / 7=OUT5_ONLY / 8=SAFETYMODE
Heatpump Override	2	HPOvrd	TRUE	1=AUTO / 2=COMPR_OFF / 3=COMPR1_HEAT / 4=COMPR1_COOL / 5=COMPR2_HEAT / 6=COMPR2_COOL