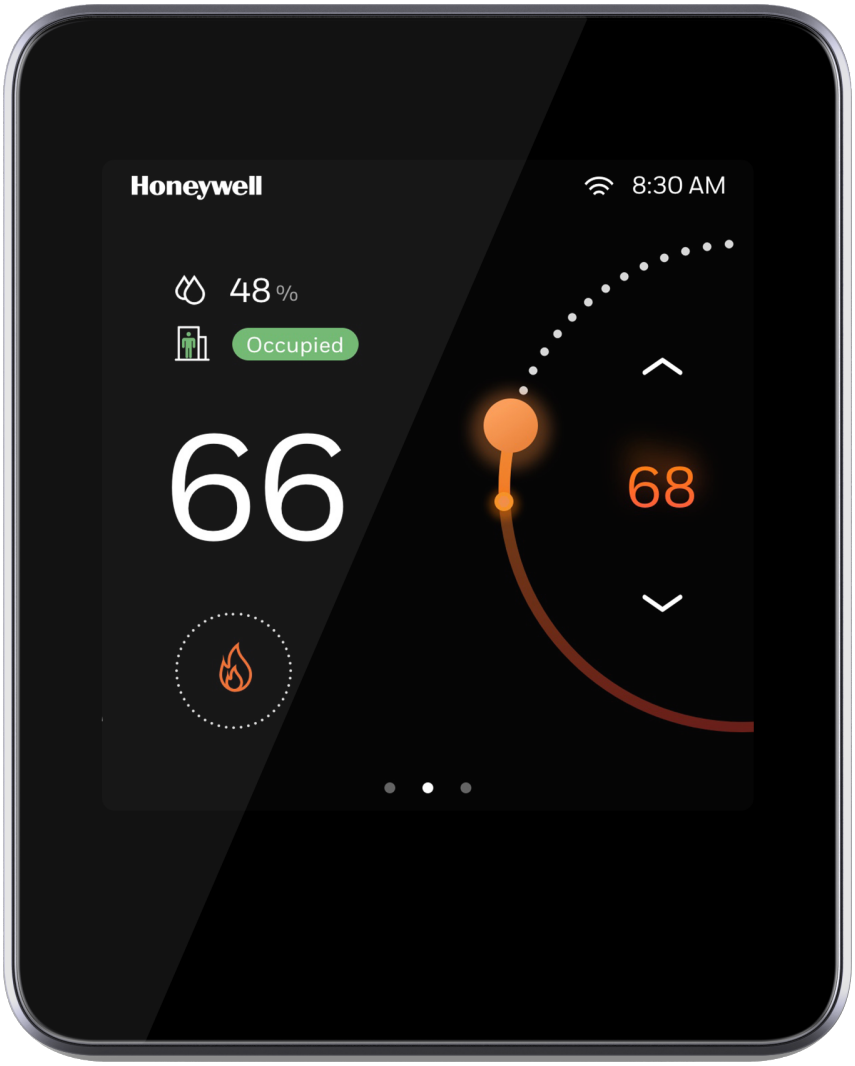
Honeywell

TC500A Thermostat

BACnet Integration Guide



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Waste Electrical and Electronic Equipment (WEEE)

WEEE: Waste Electrical and Electronic Equipment Directive	
	• At the end of the product life, dispose of the packaging and product in an appropriate recycling center. • Do not dispose of the device with the usual domestic refuse. • Do not burn the device.

FCC Part 15 compliant

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Regulation (EC) No 1907/2006

According to Article 33 of Reach Regulation, be informed that the substances listed below may be contained in these products above the threshold level of 0.1% by weight of the listed article.

Product/Part Code	Substance Name	CAS Number
Only TC500A-N / TC500A-W thermostat mainboard CBA, thermostat wall plate board PCBA	Lead	7439-92-1
	Lead oxide	1317-36-8

Important Safety Information and Installation Precautions

Read all instructions

Failure to follow all instructions may result in equipment damage or a hazardous condition. Read all instructions carefully before installing equipment.

When performing any work (installation, mounting, start-up), all manufacturer instructions and in particular the Mounting Instructions (31-00399M-02) are to be observed.

- TC500A Thermostat may be installed and mounted only by authorized and trained personnel.
- It is recommended that devices be kept at room temperature for at least 24 hours before applying power. This is to allow any condensation resulting from low shipping/storage temperatures to evaporate.
- Do not open TC500A Thermostat, as it contains no user-serviceable parts inside!
- Investigated according to United States Standard UL- 60730-1, and UL60730-2-9.
- Investigated according to Canadian National Standard(s) C22.2, No. 205-M1983 (CNL-listed).
- CE declarations according to LVD Directive 2014/35/EU and EMC Directive 2014/30/EU.
- Product standards are EN 60730-1 and EN 60730-2-9.
- TC500A Thermostat is Class B digital apparatus and complies with Canadian ICES-003.

Local codes and practices

Always install equipment in accordance with the National Electric Code and in a manner acceptable to the local authority having jurisdiction.



Electrostatic sensitivity

This product and its components may be susceptible to electrostatic discharge (ESD). Use appropriate ESD grounding techniques while handling the product. When possible, always handle the product by its non-electrical components.

High voltage safety test

Experienced electricians, at first contact, always assume that hazardous voltages may exist in any wiring system. A safety check using a known, reliable voltage measurement or detection device should be made immediately before starting work and when work resumes.

Lightning and high-voltage danger



Most electrical injuries involving low-voltage wiring result from sudden, unexpected high voltages on normally low voltage wiring. Low-voltage wiring can carry hazardous high voltages under unsafe conditions. Never install or connect wiring or equipment during electrical storms. Improperly protected wiring can carry a fatal lightning surge for many miles. All outdoor wiring must be equipped with properly grounded and listed signal circuit protectors, which must be installed in compliance with local, applicable codes. Never install wiring or equipment while standing in water.

Wiring and equipment separations



All wiring and controllers must be installed to minimize the possibility of accidental contact with other potentially hazardous and disruptive power and lighting wiring. Never place 24VAC or communications wiring near other bare power wires, lightning rods, antennas, transformers, or steam or hot water pipes. Never place wire in any conduit, box, channel, duct or other enclosure containing power or lighting circuits of any type. Always provide adequate separation of communications wiring and other electrical wiring according to code. Keep wiring and controllers at least six feet from large inductive loads (power distribution panels, lighting ballasts, motors, etc.). Failure to follow these guidelines can introduce electrical interference and cause the system to operate erratically.



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Safety Information as per EN60730-1

TC500A Thermostat is intended for commercial and residential environments.

TC500A Thermostat is an independently mounted electronic control system with fixed wiring.

TC500A Thermostat is used for the purpose of building HVAC control and is suitable for use only in non-safety controls for installation on or in appliances.

CHAPTER

1 INTRODUCTION

Topics covered

Scope of the document

Reference documents

Terms, Acronyms, and Abbreviations

TC500A BACnet objects and device properties for basic setup

Setting up BACnet MS/TP

Adding a thermostat to the BACnet network

Scope of the document

The BACnet Integration document contains information related to BACnet Objects and the properties of the thermostat that help engineers to integrate and configure the settings via a BACnet tool. It also contains wiring and installation of the thermostat.

Reference documents

- TC500A Commercial Thermostat User guide (31-00400M)
- TC500A Commercial Thermostat Datasheet (31-00398M)
- TC500A Commercial Thermostat Mounting instructions (31-00399M)
- TC500A Commercial Thermostat Quick start guide (31-00401M)
- TC500A Commercial Thermostat Pocket guide (31-00463M)
- TC500A Deco Plate Pocket guide (31-00457M)

Terms, Acronyms, and Abbreviations

Term, Acronym, Abbreviation	Definition
UI	Universal Input
UIO	Universal Input/Ouput
DO	Digital Output
Cfg	Configuration
BAS	Building Automation System
ni	Network Input
no	Network Output
NCi	Network Configuration

TC500A BACnet objects and device properties for basic setup

Table 1: Device properties for basic setup

Sl.No	Proxy Point Display Name	BACnet Object Type	Access	BACnet Object Instance ID
1	no_SpaceTemp	Analog Output	Read Only	18
2	no_SpaceHumidity	Analog Output	Read Only	19
3	no_SpaceCO2	Analog Output	Read Only	20
4	no_ReversingVlv	Binary Output	Read Only	16
5	no_RaTemp	Analog Output	Read Only	57
6	OaTemp_Display	Analog Output	Read Only	75
7	OaHum_Display	Analog Output	Read Only	76
8	no_DmprPos	Analog Output	Read Only	70
9	no_MaTemp	Analog Output	Read Only	14
10	no_HumActive	Binary Output	Read Only	9
11	no_FanStart	Binary Output	Read Only	19
12	no_EffTempMode	Multistate Output	Read Only	6
13	no_EffSp	Analog Output	Read Only	5
14	no_EffOccState	Multistate Output	Read Only	20
15	no_EffHeatSp	Analog Output	Read Only	3
16	no_EffCoolSp	Analog Output	Read Only	4
17	no_EconEn	Binary Output	Read Only	22
18	no_DehumAxtive	Binary Output	Read Only	8
19	no_DaTemp	Analog Output	Read Only	13
20	no_DaHumidity	Analog Output	Read Only	15
21	no_CtrlSpaceTemp	Analog Output	Read Only	67
22	no_BypassState	Binary Output	Read Only	1
23	no_ActiveHeatStages	Analog Output	Read Only	7
24	no_ActiveCoolStages	Analog Output	Read Only	11
25	no_ActiveCompHeatStages	Analog Output	Read Only	10
26	no_ActiveAuxHeatStages	Analog Output	Read Only	8
27	no_HeatCtrlOut	Analog Output	Read Only	9
28	ni_ApplicationMode	Multistate Value	Read Only	3
29	ni_NetSchCurrentState	Multistate Value	Read Only	1
30	ni_NetSchNextstate	Multistate Value	Read Only	2
31	ni_NetTUNCOS	Analog Value	Read Only	1
32	Cfg_Setpoints_UnOccHeatSp	Analog Value	Writable	9
33	Cfg_Setpoints_UnOccCoolSp	Analog Value	Writable	6
34	Cfg_Setpoints_StbyHeatSp	Analog Value	Writable	8
35	Cfg_Setpoints_StbyCoolSp	Analog Value	Writable	5

Table 1: Device properties for basic setup (Continued)

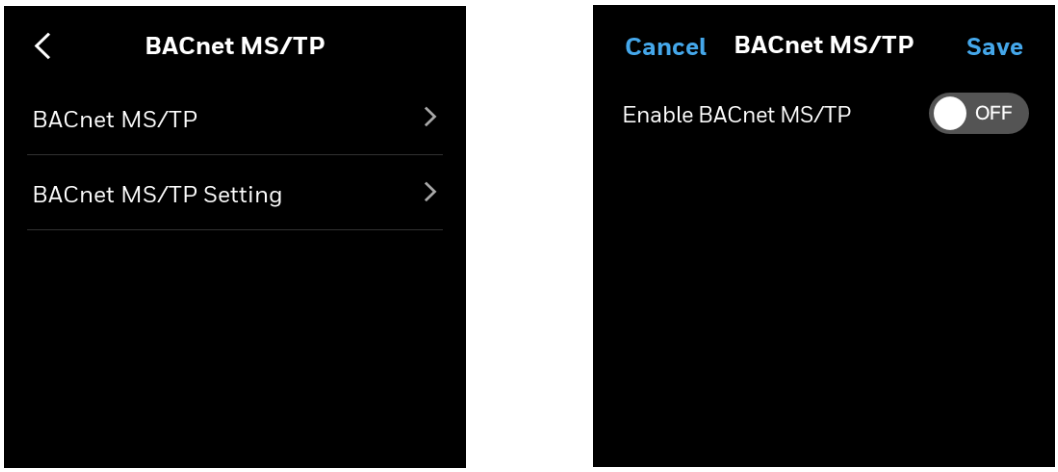
Sl.No	Proxy Point Display Name	BACnet Object Type	Access	BACnet Object Instance ID
36	Cfg_Setpoints_OccHeatlSp	Analog Value	Writable	7
37	Cfg_Setpoints_OccCoolSp	Analog Value	Writable	4
34	Alarm_UI_WtrFlwSts	Binary Input	Read Only	7
	Alarm_UI_SpcTemp	Analog Input	Read Only	12
	Alarm_UI_Shutdown	Binary Input	Read Only	6
	Alarm_UI_OccSens	Binary Input	Read Only	3
	Alarm_UI_OATemp	Analog Input	Read Only	5
	Alarm_UI_MATemp	Analog Input	Read Only	4
	Alarm_UI_DirtyFiler	Binary Input	Read Only	4
	Alarm_UI_DATemp	Analog Input	Read Only	6
	Alarm_UI_CO2Lvl	Analog Input	Read Only	7
35	Alarm_UI_AirFlwSts	Binary Input	Read Only	5
36	no_DO1	Binary Output	BACnet I/O point	74
37	no_DO2	Binary Output	BACnet I/O point	75
38	no_DO3	Binary Output	BACnet I/O point	76
39	no_DO4	Binary Output	BACnet I/O point	77
40	no_DO5	Binary Output	BACnet I/O point	78
41	no_DO6	Binary Output	BACnet I/O point	79
42	no_DO7	Binary Output	BACnet I/O point	80
43	no_DO8	Binary Output	BACnet I/O point	81
	AlarmPriority_WaterFlwPrf	Binary Output	Read Only	66
	AlarmPriority_UnknownTime	Binary Output	Read Only	92
	AlarmPriority_SuplyFan	Binary Output	Read Only	64
	AlarmPriority_HumSens	Multistate Output	Read Only	14
	AlarmPriority_DirtyFilter	Binary Output	Read Only	88
	AlarmPriority_Co2LvlHighLimit	Binary Output	Read Only	100

Setting up BACnet MS/TP

The BACnet MS/TP device can be configured while setting up the initial configuration of the thermostat (refer to the TC500A thermostat user guide - 31-00400M) or follow the instructions given below to set up the BACnet MS/TP connection of the thermostat.

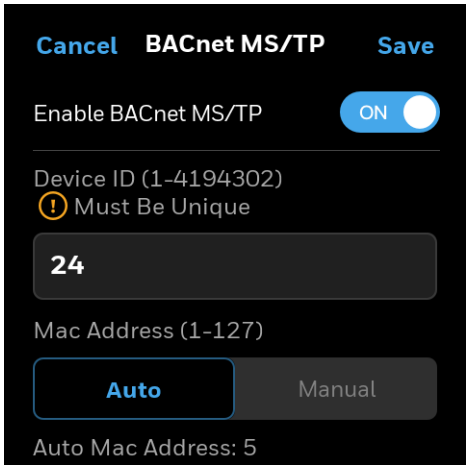
1. On the thermostat, Tap **Config** > **Connection** > **BACnet MS/TP**.
   The BACnet MS/TP page appears.

Fig 1. Enabling BACnet MS/TP



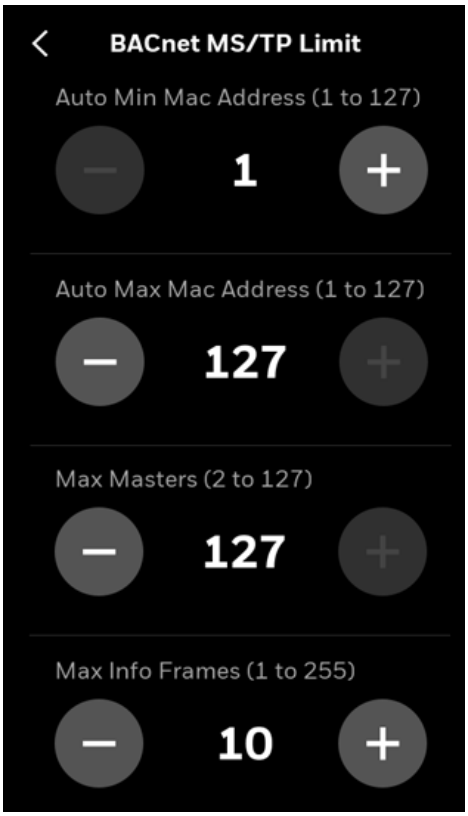
2. Tap BACnet MS/TP, enable the BACnet MS/TP, and tap **Save**.

Fig 2. Setting up the Device ID



3. Enter a unique Device ID for the thermostat. It should be different from other TC500A thermostats in the network system.
4. Auto-MAC addressing is enabled by default, Installer can also manually set a unique MAC address for the TC500A.
5. The device automatically adapts to the baud rate of the MS/TP network. You can also manually select the Baudrate.
6. To change the MS/TP setting, navigate back to BACnet MS/TP page and tap **BACnet MS/TP settings**.

Fig 3. Setting up the BACnet MS/TP Limits



7. Tap **SAVE**.

Notes:

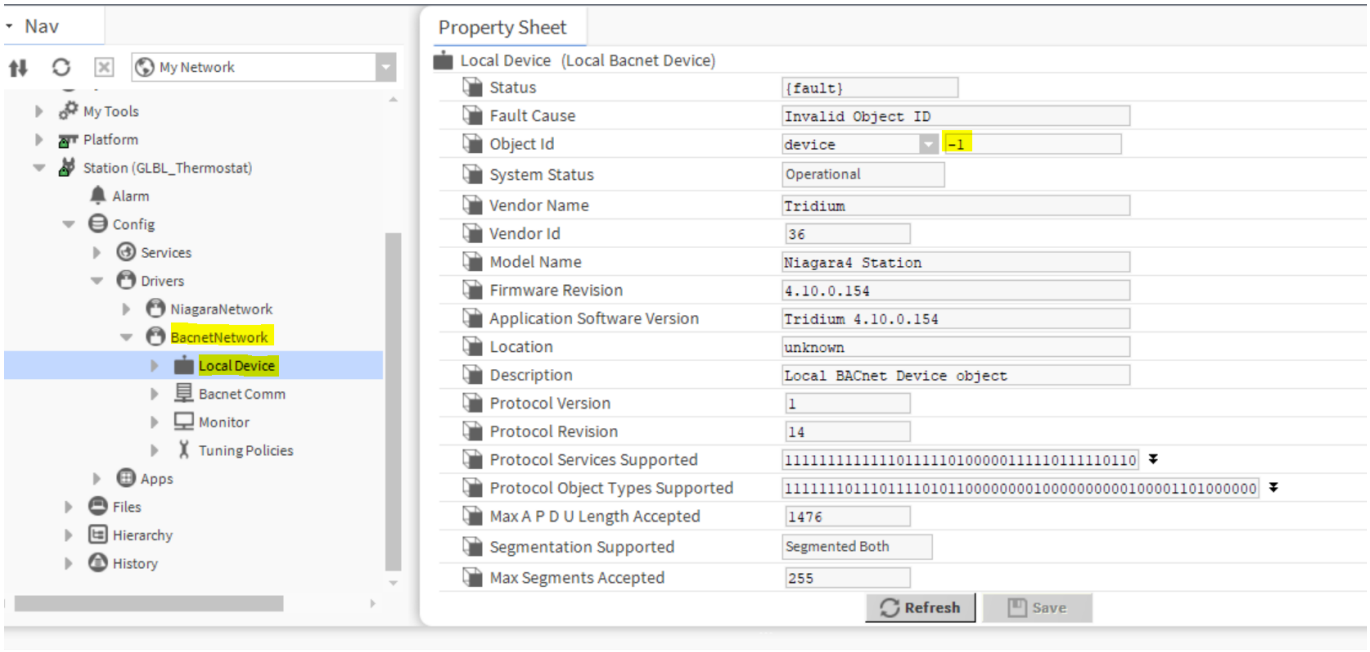
- TC500A doesn't simultaneously support BACnet IP and BACnet MS/TP. When switching the connection between BACnet IP and BACnet MS/TP, TC500A will give a prompt, then restart automatically.
- TC500A will try to adapt to the Baudrate of the MS/TP network in the first 4 minutes after startup or MS/TP is enabled. If no Baudrate could be determined, for example, there is a single device on the network, then TC500A will choose the default Baudrate of 76800. After that, the installer can manually change it to another value.

Adding a thermostat to the BACnet network

The following procedure explains adding the Global thermostat to a BACnet network using the Niagara 4 workbench.

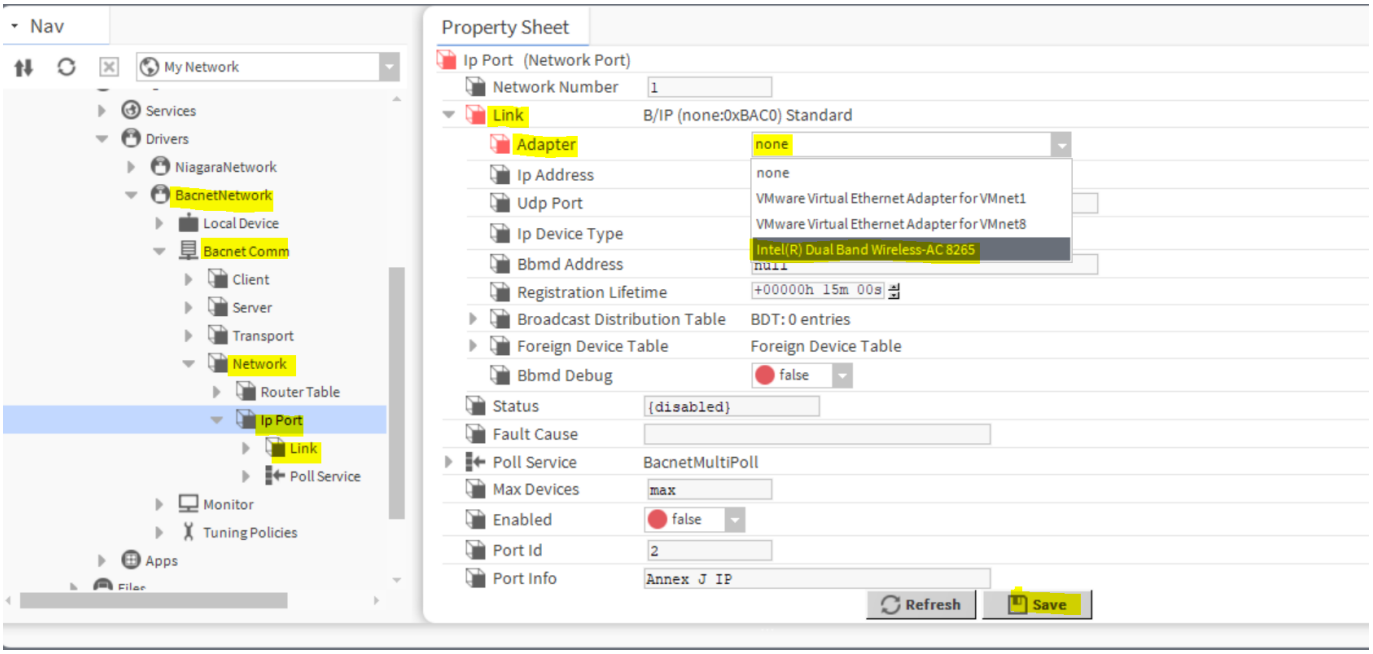
1. In the Niagara 4 workbench, create a new Station.
2. To configure the BACnet device, click **Station** > **Config** > **Drivers** > **BACnetNetwork** > **Local Device** in the Nav view.
   The property sheet of the local BACnet device appears on the right pan.

Fig 4. Local Device Property Sheet – Change Object ID



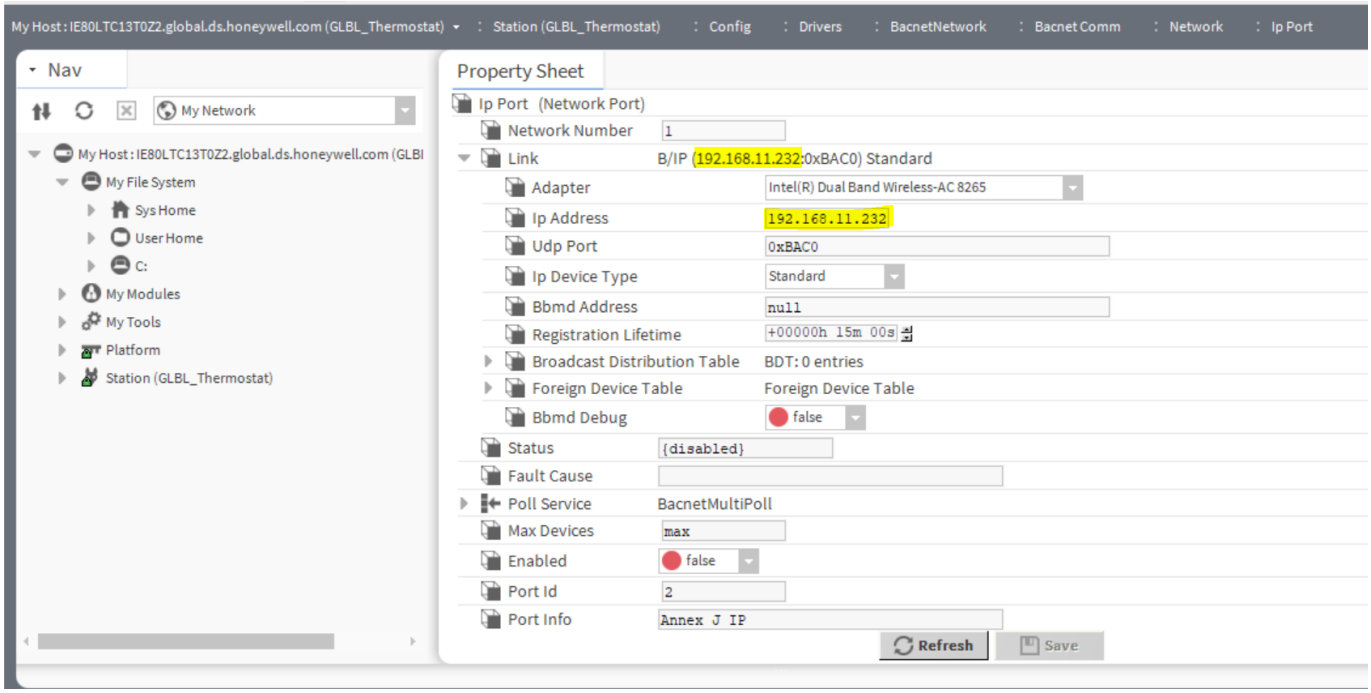
3. On the property sheet, change the **Object Id** to any other number instead of **-1** and click **Save**.
4. In the Nav view, click **BACnet Comm** > **Network** > **Ip Port** > **Link.**
   The property sheet of the IP port page appears.

Fig 5. Selecting the Adapter Type



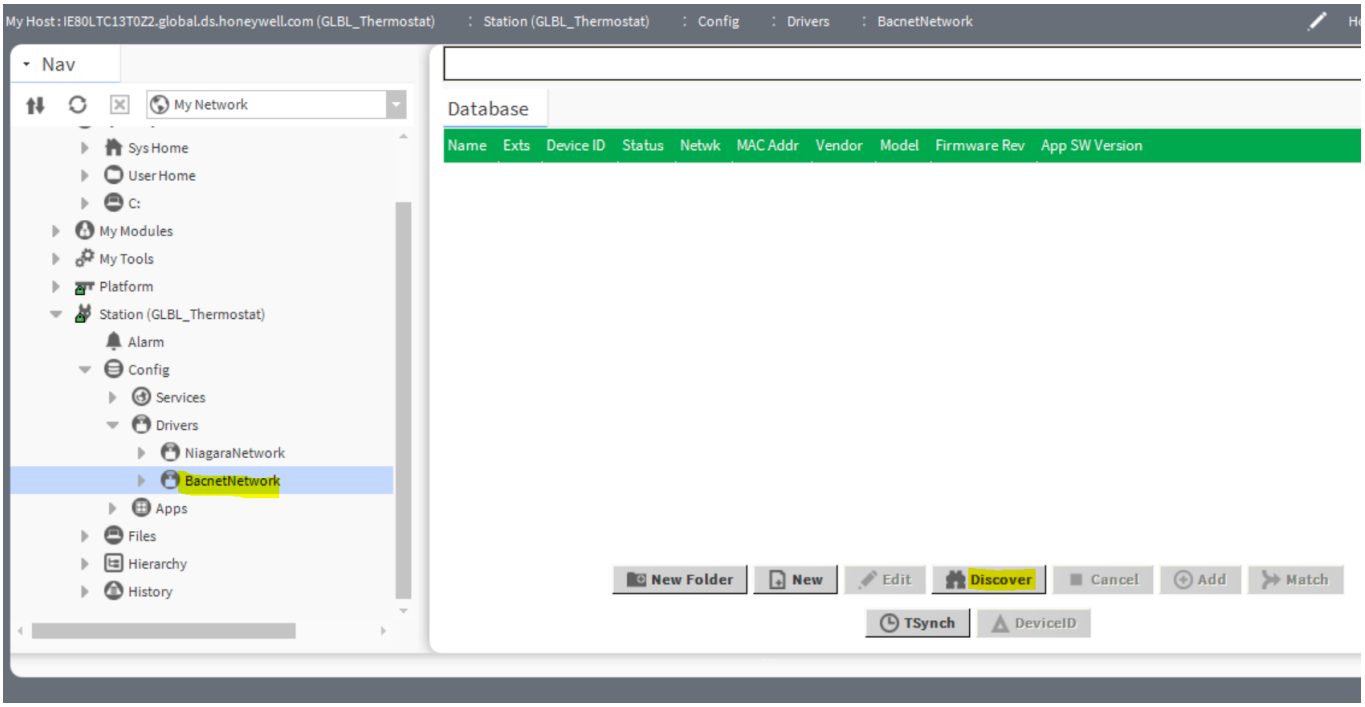
5. Select the Adapter type as **Intel®Dual Band Wireless-AC 8265** from the drop-down list instead of **none**.
6. Click **Save**.
7. Connect the laptop and TC500A thermostat to the same Wi-Fi (either with mobile data or Wi-Fi). Both laptop and the thermostat should be in the same network range.
8. On the property sheet of the IP port page, set the **Enabled** field to **true**.
9. In the Nav view, right-click **Link**, and select **Action** > **Query for Adapters**.
   The Query For Adapters dialog appears, click **Yes**.
   The IP address of the thermostat is automatically detected and appears on the property page.

Fig 6. Assigning the IP Address



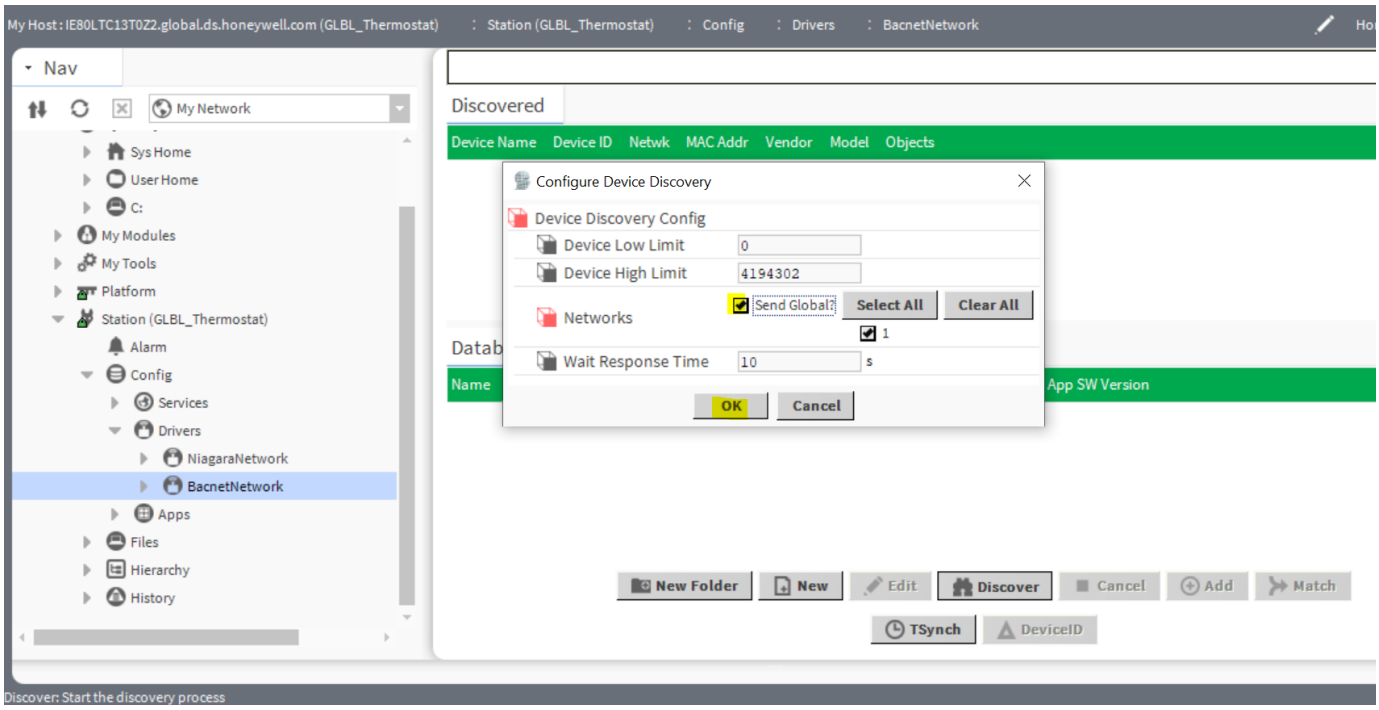
10. In the Nav view, double click on the **BACnetNetwork**.
    The BACnet network discovery page appears.

Fig 7. Device Discovery Page



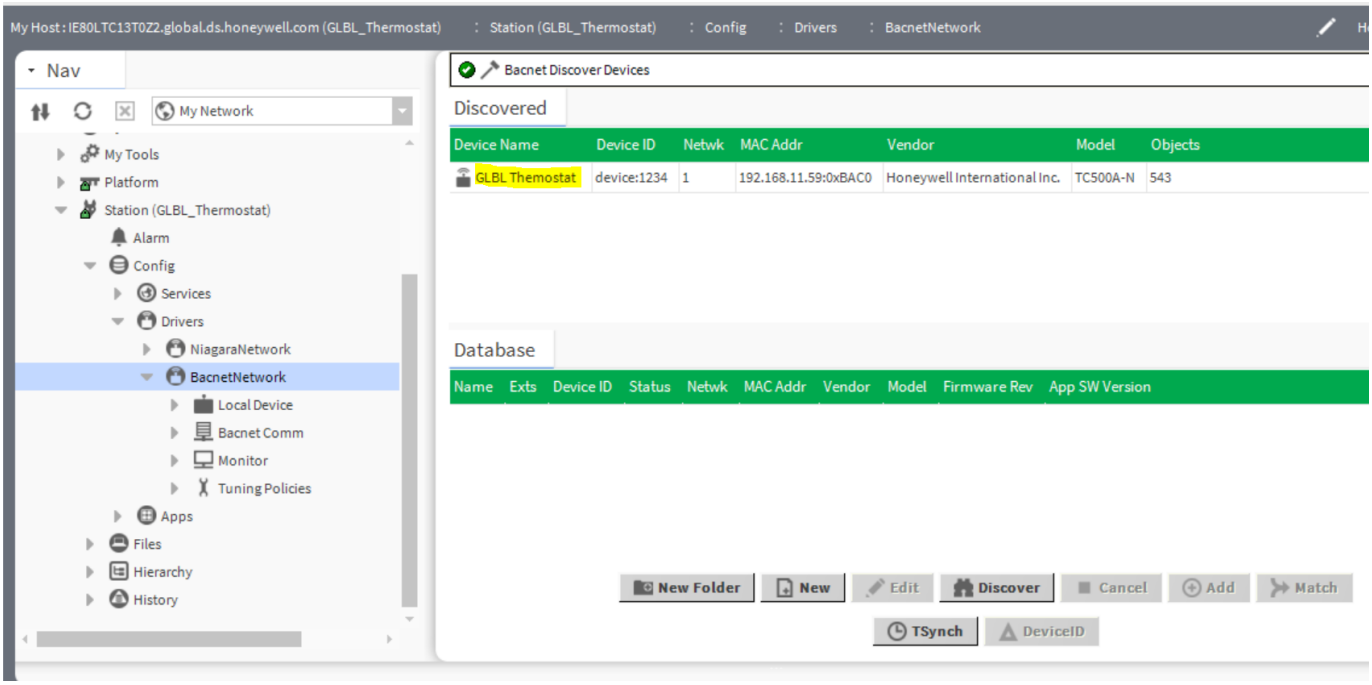
11. Click **Discover.**
    The Configure Device Discovery page appears.

Fig 8. Configuring the Discovered Device



12. Select **Send Global** checkbox and click **OK**.
    The thermostat appears on the Discovery page.

Fig 9. Adding the Discovered Device



13. Select the thermostat, click **Add,** and select the **Type** as **BACnet Device** from the drop-down list.
    The added thermostat appears on the Nav view under BACnetNetwork.

CHAPTER

2 WIRING AND INSTALLATION

Topics covered

Power supply guidelines and requirements

RS485 Interface cable Type

Thermostat powered by separate transformer

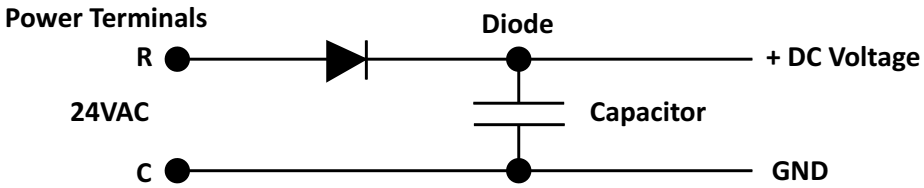
Thermostat powered by public transformer

Power supply guidelines and requirements

The thermostat uses 24VAC power from a UL Listed Class-2 24VAC transformer (not provided in the kit). It also uses a half-wave rectifier to convert the AC power supply to onboard power. This enables multiple devices with half-wave power supplies to be powered from a single, grounded transformer.

Warning: Half wave devices and full wave devices must not use the same AC transformer.

You must maintain wiring polarity. Failure to do so can result in equipment damage. If the HVAC equipment has an internal circuit board that is powered by the same transformer that will power the Thermostat, verify that it is NOT full wave.



Power supply wire sizing

Long power supply wiring runs require selecting the wire gauge appropriately. If the wire gauge is inadequate the increased resistance and associated voltage drop may result in insufficient voltage supply to the Thermostat. The recommended wire gauge guidelines are as follows.

Min. Load = 4VA (all DOs OFF, No Sylk sensor).

If 18-20AWG wire is used for R, C, RC terminal,

Max. Load = 4A, 96VA (all DOs ON).

If 22AWG wire is used for R, C, RC terminal

Max. Load = 3A, 72VA (all DOs ON).

If R-Rc power jumper is not removed, then G, W1, W2, W3, Y1, Y2, Y3 are powered from the Thermostat's transformer. Minimum load includes Thermostat and analog outputs at full load (Max. 10V voltage output with 2Kohms load).

Every relay output is N.O. (Normally Open) contacts with a maximum switch rating of 24VAC @1A (24VA). The allowed maximum load is 96VA, which assumes all 8 relay output loads are powered from the controller transformer. Actual power requirements depend on connected loads.

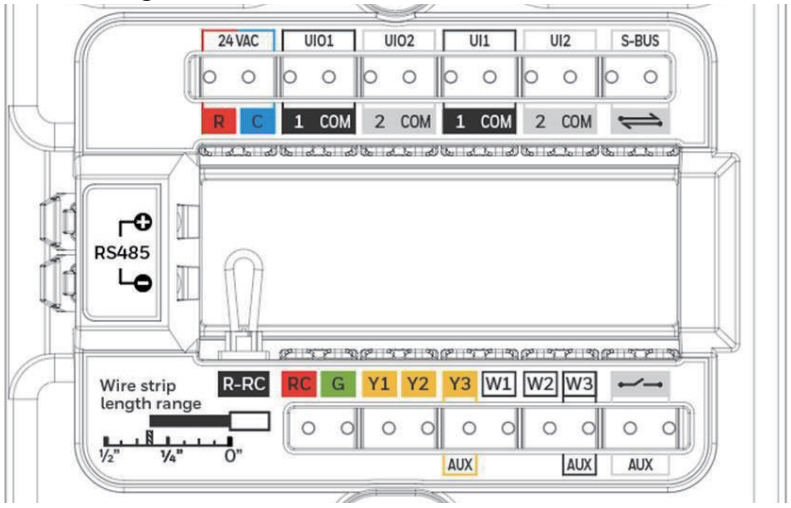
IMPORTANT

Transformer sizing should never exceed the maximum UL Class 2 rating.

The 24VAC secondary leads are not interchangeable. Once a lead connects to the GND terminal, it is the grounded lead. Observe and maintain polarity for subsequent connections. The GND terminal provides a reference ground for the circuit board and communications wiring. Use 18 AWG cable for best results.

Terminal Identification

Fig 10. Thermostat Terminal Identification



Warning: DO NOT wire the thermostat to line voltage.

Remove R to RC jumper only for 2 transformer systems

Table 2. Terminal identification

Terminal	Label	Connection
24VAC	R	24VAC power from heating Class 2 transformer
	C	24VAC common (Neutral). For 2 transformer systems, use common wire from the cooling transformer
UIO1	1	Universal input/output
	COM	Common
UIO2	2	Universal input/output
	COM	Common
UI1	1	Universal input
	COM	Common
UI2	2	Universal input
	COM	Common
Sylk	⇌	Sylk bus, master, power output
	⇌	Sylk bus, master, power output
RS485	+	BACnet Communications (BACnet/MSTP A)
	–	BACnet Communications (BACnet/MSTP B)
	R-RC	Jumper between R and RC for single transformer system, remove the jumper in two transformer system.

Table 2. Terminal identification (Continued)

Terminal	Label	Connection
24VAC	RC	24VAC power from cooling Class 2 transformer
	G	Fan
	Y1	Relay output, Compressor contactor (stage1)
	Y2	Relay output, Compressor contactor (stage2)
	Y3	Relay output, Compressor contactor (stage3)/Configurable Output
	W1	Relay output, Heat (stage1)
	W2	Relay output, Heat (stage2)
	W3	Relay output, Heat (stage3)/Configurable Output
Aux		Relay dry contact, Aux-1
		Relay dry contact, Aux-2

Wiring the wallplate

All wiring must comply with local electrical codes and ordinances. Supports 18-22 AWG (0.5-0.75mm2). Solid wire is recommended.Follow equipment manufacturer wiring instructions when available. A letter code is located near each terminal for identification.

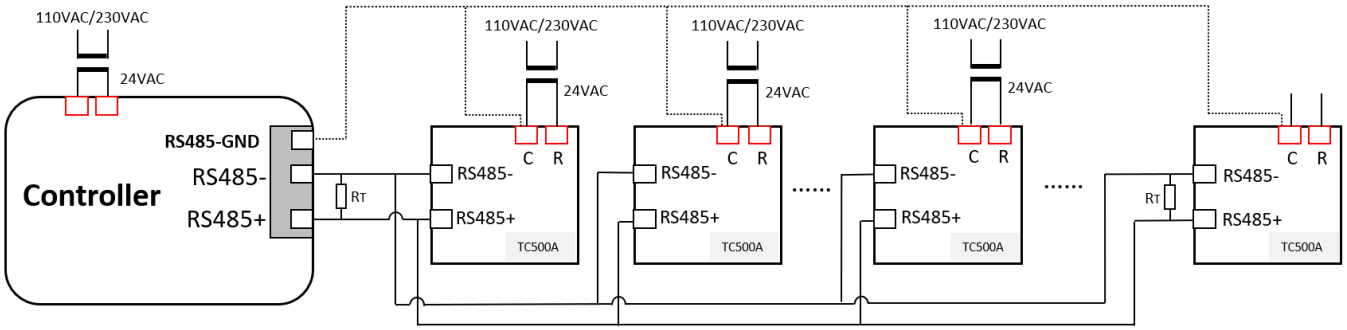
RS485 Interface cable Type

One or two pairs (depending on the application) of twisted pairs complying with EIA485 standard (level IV,22AWG,solid core, non-shielded). e.g., J-Y-Y 2*2*0.8 or shielded wire.

An MSTP EIA-485 network shall use shielded twisted pairs cable with a characteristic impedance between 100 and 130 ohms. Distributed capacitance between conductors shall be less than 100 pF per meter(30 pF per foot). Distributed capacitance between conductors and shield shall be less than 200 pF per meter.

Thermostat powered by separate transformer

Fig 11. Thermostat Powered by Separate Transformer



TC500As are connected to controller powered by separate Transformer.

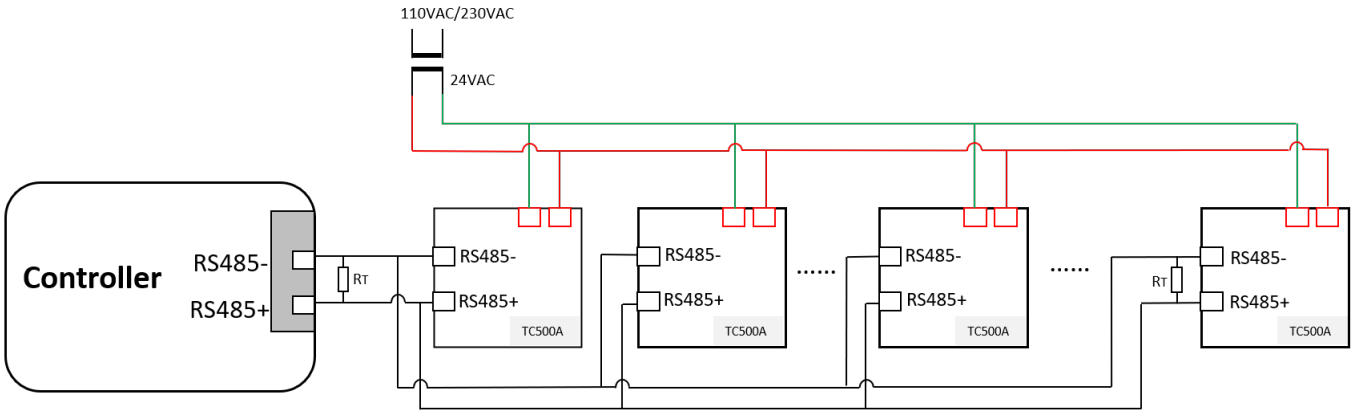
If TC500A's GND(C port) is connected to earth, the connection style must comply with the requirement in the case of sharing a public power transformer.

If any device in the net is connected to earth or not electrically isolated, connecting the C wire to the corresponding device's RS485 GND is recommended.

If shielding is used, the shielding of each individual bus segment should be separately connected at one end to the earth.

Thermostat powered by public transformer

Fig 12. Thermostat Powered by Public Transformer



TC500As are connected to controller and if TC500As share a public transformer, please make sure the 24VAC power wires are connected to TC500A in same sequence, as showed in the diagram, the Red wire is connected to C port and Green wire is connected to R port. Incorrect connection style can cause short circuit.

If the controller shares the power transformer with TC500A, the connection style depends on the power design of controller and please consult the technical support to avoid short circuit.

If any device in the net is connected to earth or not electrically isolated, connecting the C wire to the corresponding device's RS485 GND is recommended.

If shielding is used, the shielding of each individual bus segment should be separately connected at one end to the earth.

CHAPTER

3 I/O CONFIGURATION

Topics covered

Terminal input/output

Terminal configuration

Terminal input characteristics configuration

Sylk devices

Space temperature & Humidity sensor inputs

Terminal input/output

Table 3: Terminal input/output

Terminal	Point Name	BACnet Point Type	Access	BACnet Object Instance ID	Description
UI1	ni_UI1	Analog Input	Read Only	8	Universal Input shared to network.
UI2	ni_UI2	Analog Input	Read Only	9	Universal Input shared to network.
UIO1	ni_UIO1	Analog Input	Read Only	10	Universal Input shared to network.
	no_UIO1	Analog Output	Writable	64	Universal Output shared to network.
UIO2	ni_UIO2	Analog Input	Read Only	11	Universal Input shared to network.
	no_UIO2	Analog Output	Writable	63	Universal Output shared to network.
DO1	no_DO1	Binary Output	Writable	74	Digital Output shared to network.
DO2	no_DO2	Binary Output	Writable	75	Digital Output shared to network.
DO3	no_DO3	Binary Output	Writable	76	Digital Output shared to network.
DO4	no_DO4	Binary Output	Writable	77	Digital Output shared to network.
DO5	no_DO5	Binary Output	Writable	78	Digital Output shared to network.
DO6	no_DO6	Binary Output	Writable	79	Digital Output shared to network.
DO7	no_DO7	Binary Output	Writable	80	Digital Output shared to network.
DO8	no_DO8	Binary Output	Writable	81	Digital Output shared to network.

Terminal configuration

Table 4: Terminal configuration

Note: All points are writable.				
Terminal	**Default**	**BACnet Point Type**	**BACnet Object Instance ID**	**Options**
Cfg_UI1	**1** = None	Multistate Value	24	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 10 =WtrFlwSts 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 11 = Space Temp Sensor, 12 = FiltPres
Cfg_UI1_Ext	**1** = None	Analog Value	293	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 10 =WtrFlwSts 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 11 = Space Temp Sensor, 17 = PckEconFault, 18 = WindowOpen, 19= Return Air Sensor, 20=Leak Detect/Drain Pan Sensor

Table 4: Terminal configuration (Continued)

Note: All points are writable.				
Terminal	**Default**	**BACnet Point Type**	**BACnet Object Instance ID**	**Options**
Cfg_UI2	**1** = None	Multistate Value	25	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 10 = WtrFlwSts 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 11 = Space Temp Sensor, 12 = FiltPres
Cfg_UI2_Ext	**1** = None	Analog Value	294	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 10 =WtrFlwSts 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 11 = Space Temp Sensor, 17 = PckEconFault, 18 = WindowOpen, 19= Return Air Sensor, 20= Leak Detect/Drain Pan Sensor
Cfg_UIO1	**1** = None	Multistate Value	26	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 10 = Fan Speed Control, 11 = WtrFlwSts 12 = Space Temp Sensor
Cfg_UIO1_Ext	**1** = None	Analog Value	295	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 10 = Fan Speed Control, 11 = WtrFlwSts, 12 = Space Temp Sensor, 17 = PckEconFault, 18 = WindowOpen, 19= Return Air Sensor, 20=CO2Output, 21 = Cooling Control, 23 = Leak Detect/Drain Pan Sensor, 24 = Modulating Heat
Cfg_UIO2	**1** = None	Multistate Value	27	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 11 = WtrFlwSts 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 10 = Heating Control, 12 = Space Temp Sensor
Cfg_UIO2_Ext	**1** = None	Analog Value	296	1 = None, 2 = Occupancy Sensor, 3 = Dirty Filter, 4 = Air Flow Status, 5 = Shutdown, 6 = Mixed Air Sensor, 7 = Outside Air Sensor, 8 = Discharge Air Sensor, 9 = CO2 Sensor, 10 = Heating Control, 11 = WtrFlwSts, 12 = Space Temp Sensor (TR21), 17 = PckEconFault, 18 = WindowOpen, 19 = Return Air Sensor, 20=CO2Output, 21=Purge Output, 22=Cooling Control, 23 = Leak Detect/Drain Pan Sensor, 24 = Modulating Heat
Cfg_DO1	**2** = Fan Command	Multistate Value	28	1= None, 2=Fan Command, 3 = RTU/FCU Fan High Speed Command

Table 4: Terminal configuration **(Continued)**

Note: All points are writable.				
Terminal	**Default**	**BACnet Point Type**	**BACnet Object Instance ID**	**Options**
Cfg_DO2	**2** = Heating Stage1 Command	Multistate Value	29	2 = Heating Stage1 Command, FCU 4 Pipe Dual Coil Heating On/Off Valve, FCU 4 Pipe Dual Coil Heating Floating Open Command - User can't configure this command
Cfg_DO3	**2** = Heating Stage2 Command	Multistate Value	30	2 = Heating Stage2 Command, FCU 4 Pipe Dual Coil Heating Floating Close Command -User can't configure this command
Cfg_DO4	**1** = None	Multistate Value	31	1 = None, 2 = Heating Stage3 Command, 3 = Heat Pump Reversing Valve Command, 4 = Fan Low Speed Command, 5 = Occupancy Status, 6 = Dehumidification Command, 7 = Humidification Command, 8 = Purge Command,9=Exhaust Fan1 Command, 10 = Exhaust Fan2 Command, 11= FCU Fan Medium Speed Command, 12 = Cooling Stage4 Command
Cfg_DO5	**2** = Cooling / Compressor Stage1 Command	Multistate Value	32	2 = Cooling / Compressor Stage1 Command, FCU 2 Pipe Single Coil Cooling/Heating On/Off Valve, FCU 2 Pipe Single Coil Cooling/Heating Floating Open Command, FCU 4 Pipe Dual Coil Cooling On/Off Valve, FCU 4 Pipe Dual Coil Cooling Floating Open Command - User can't configure this command
Cfg_DO6	**2** = Cooling / Compressor Stage2 Command	Multistate Value	33	2 = Cooling / Compressor Stage2 Command, FCU 2 Pipe Single Coil Cooling/Heating Floating Close Command, FCU 4 Pipe Dual Coil Cooling Floating Close Command User can't configure this command
Cfg_DO7	**1** = None	Multistate Value	34	1 = None, 2 = Cooling / Compressor Stage3 Command, 3 = Econ Min Damper Command, 4 = Fan Low Speed Command, 5 = Occupancy Status, 6 = Dehumidification Command, 7 = Humidification Command, 8 = Purge Command, 9=Exhaust Fan1 Command, 10= Exhaust Fan2 Command, 11=FCU Fan Medium Speed Command
Cfg_DO8	**1** = None	Multistate Value	35	1 = None, 2 = Econ Min Damper Command, 3 = Fan Low Speed Command, 4 = Occupancy Status, 5 = Dehumidification Command, 6 = Humidification Command, 7 = Purge Command, 8=Spare, 9=Exhaust Fan1 Command, 10= Exhaust Fan2 Command, 11=FCU Fan Medium Speed Command, 12=Cooling Stage4 Command

Terminal input characteristics configuration

Table 5: Terminal input characteristics configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_OccSensChar	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	31	Occupancy sensor input characteristics selection
Cfg_DirtyFilterChar	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	32	Dirty filter input characteristics selection
Cfg_AirFlwStsChar	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	33	Airflow status input characteristics selection
Cfg_ShutdownChar	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	34	Shutdown input characteristics selection
Cfg_MASensChar	**0** = NTC 20K **1** = NTC 10K	**0** = NTC 20K	Binary Value	137	Mixed air Temperature Sensor characteristics selection
Cfg_MASensChar1	**1** = NTC10K type II 2= NTC10K type III **3** = NTC20K	**3** = NTC 20K	Multistate Value	501	Temperature Sensor characteristics selection
Cfg_OASensChar	**0** = NTC 20K **1** = NTC 10K	**0** = NTC 20K	Binary Value	138	Outdoor air Temperature Sensor characteristics selection
Cfg_OASensChar1	**1** = NTC10K type II 2= NTC10K type III **3** = NTC20K	**3** = NTC 20K	Multistate Value	502	Temperature Sensor characteristics selection
Cfg_DASensChar	**0** = NTC 20K **1** = NTC 10K	**0** = NTC 20K	Binary Value	139	Discharge air Temperature Sensor characteristics selection
Cfg_DASensChar1	**1** = NTC10K type II 2= NTC10K type III **3** = NTC20K	**3** = NTC 20K	Multistate Value	503	Temperature Sensor characteristics selection
Cfg_RASensChar	**0** = NTC 20 K **1** = NTC 10 K Type II	**0** = NTC 20K	Binary Value	180	Return air Temperature Sensor characteristics selection
Cfg_RASensChar1	**1** = NTC10K type II 2= NTC10K type III **3** = NTC20K	**3** = NTC 20K	Multistate Value	504	Temperature Sensor characteristics selection

Table 5: Terminal input characteristics configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_SpcSensChar	**1** = NTC 10 K Type II **2** = NTC 10 K Type III **3** = NTC 20 K	**3** = NTC 20K	Multistate Value	372	Space Temperature Sensor characteristics selection
Cfg_FiltPresChar	**0** = 0-5 InWC **1** = 0.2.5 InWC	**0** = NTC 20K	Binary Value	155	Filter Pressure Characteristics selection
Cfg_CompCurSensMaxAmps	0~9999 Amps	10 Amps	Analog Value	220	Comp Current Sensor Maximum Range
Cfg_FanCurSensMaxAmps	0~9999 Amps	10 Amps	Analog Value	221	Fan Current Sensor Maximum Range
Cfg_WindowOpenChar	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	175	Window open characteristic
Cfg_WaterFlwStsChar	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	383	Proof of Water Flow Sensor characteristic

Sylk devices

Table 6: Sylk devices

Note: All points are read-only.					
Sylk Address	**Use**	**Name**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
2	Remote Wall Module	no_SylkAddr2Temp	Analog Value	223	TR40-H-CO2: Temperature, Humidity, and/or CO2. (May also use models TR40, TR40-H, TR40-CO2, TR40-H-CO2)
		no_SylkAddr2Hum		224	
		no_SylkAddr2CO2		225	
3	Remote Wall Module	no_SylkAddr3Temp	Analog Value	226	TR40: Temperature
4	Remote Wall Module	no_SylkAddr4Temp	Analog Value	227	TR40: Temperature
5	Remote Wall Module	no_SylkAddr5Temp	Analog Value	228	TR40: Temperature
6	Remote Wall Module	no_SylkAddr6Temp	Analog Value	229	TR120: Temperature and Humidity
		no_SylkAddr6Hum		230	
8	Outdoor Air Enthalpy Sensor	no_SylkAddr8Temp	Analog Value	231	C7400S Outdoor Air Sensor, Temperature and Humidity
		no_SylkAddr8Hum		232	
9	Return Air Enthalpy Sensor	no_SylkAddr9Temp	Analog Value	233	C7400S Return Air Sensor, Temperature and Humidity
		no_SylkAddr9Hum		234	
10	Discharge Air Enthalpy Sensor	no_SylkAddr10Temp	Analog Value	235	C7400S Discharge Air Sensor, Temperature and Humidity
		no_SylkAddr10Hum	Analog Value	236	
12	Mixed Air Enthalpy Sensor	no_SylkAddr12Temp	Analog Value	237	C7400S Mixed Air Sensor, Temperature
12	Mixed Air Enthalpy Sensor	no_SylkAddr12Hum	Analog Value	773	C7400S Mixed Air Sensor, Humidity

Space temperature & Humidity sensor inputs

Table 7: Space temperature and Humidity sensor inputs

Key	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
InternalTempSens	Nan	Analog Input	Read Only	16	This point represents the actual Temperature value computed from the internal temperature sensor. If this is modified, the modified value will affect the control logic if the local/multi sensor configuration is used for control. Modifying this value will not suppress the internal Temperature sensor alarms.
InternalHumSens	Nan	Analog Input	Read Only	17	This point represents the actual huidity value computed from the internal humidity sensor. If this is modified, the modified value will affect the control logic if the local/multi sensor configuration is used for control. Modifying this value will not suppress the internal humidity sensor alarms.

CHAPTER

4 APPLICATION CONFIGURATION

Topics covered

Fan configuration

Exhaust fan configuration

Fan coil (FCU) configuration

Cooling configuration

Heating configuration

Dehumidification configuration

Humidification configuration

Heat pump configuration

Economizer configuration

Filter configuration

Fan configuration

Table 8: Fan configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanType	**1** = Single Speed **2** = Two Speed **3** = Multiple Speed **4** = Variable Speed	**1** = Single Speed	Multistate Value	12	Fan can be configured as single speed, Multi fan, 2 speed or as a variable speed fan.
Cfg_FanMode	**1** = Continuous **2** = Auto **3** = FanCirculate	**1** = Continuous	Multistate Value	89	Fan Mode of operation config by user & supervisor.
Cfg_FanRunOnCoolDelay	0 to 300 sec	0 sec	Analog Value	39	Fan run on time after all cooling stages and economizer stage turns off.
Cfg_FanRunOnHeatDelay	0 to 300 sec	90 sec	Analog Value	40	Fan run on time after all heating stages turns off.
Cfg_FanOnHeat	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	10	Disable: Supply fan controlled by external duct thermostat during heat mode. Enable: Supply fan controller by digital output during heat mode.
Cfg_FanCirculate_FanOnTimePercent	0 to 100%	35%	Analog Value	253	When Fan circulate mode is enabled, based on this config, the fan will run for so much time in an hour. Eg. If 35%, the fan will run for ~20 mins every hour.
Cfg_FanSpeed_VentMode	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	14	Fan speed selection for vent mode.

Table 8: Fan configuration **(Continued)**

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanSpeed_CmprCoolSingle	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	15	Fan speed selection for Compressor/ Cooling single stage mode.
Cfg_FanSpeed_CmprCoolMulti	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	16	Fan speed selection for Cooling/ Compressor Multiple Stages.
Cfg_FanSpeed_HeatSingle	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	17	Fan speed selection for Heating/Aux Heat Single Stage.
Cfg_FanSpeed_HeatMulti	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	18	Fan speed selection for Heating/Aux Heat Multiple Stages.
Cfg_FanSpeed_PurgeMode	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	90	Fan speed selection for Purge mode.
Cfg_FanMinSpeed_ModHeat	0 to 100%	40%	Analog Value	83	Not Used. Fan minimum speed selection for modulating heat (Variable Speed)- Retained for Backward compatibility.
Cfg_FanMaxSpeed_ModHeat	0 to 100%	40%	Analog Value	84	Not Used Fan maximum speed selection for modulating heat (Variable Speed) Retained for Backward compatibility.

Table 8: Fan configuration **(Continued)**

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanSpeed_DefaultMode	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	19	Fan speed selection for Default mode.
Cfg_FanSpeed_Speed1	40 to 100%	100%	Analog Value	64	Fan speed 1
Cfg_FanSpeed_Speed2	40 to 100%	100%	Analog Value	65	Fan speed 2
Cfg_FanSpeed_Speed3	40 to 100%	100%	Analog Value	66	Fan speed 3
Cfg_FanSpeed_Speed4	40 to 100%	100%	Analog Value	67	Fan speed 4
Cfg_FanSpeed_Speed5	40 to 100%	100%	Analog Value	68	Fan speed 5
Cfg_FanSpeed_Speed6	40 to 100%	100%	Analog Value	69	Fan speed 6
Cfg_FanSpeed_EconomizerMode	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	258	Fan speed selection for Econ mode.
Cfg_MultipleFanSpeed_ModHeat	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	370	Multiple Fan speed selection for Mod Heat Control mode ModHeatOut – (2-Speed) Speed1-Two Speed Low (50%) Speed2-Two Speed High (100%) Speed1 to 6 for Multiple Speed selection

Table 8: Fan configuration **(Continued)**

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_MultipleFanSpeed_ModCool	**1** = Speed1 **2** = Speed2 **3** = Speed3 **4** = Speed4 **5** = Speed5 **6** = Speed6	**1** = Speed1	Multistate Value	371	Multiple Fan speed selection for Mod Cool Control mode ModCoolOut –(2-Speed) Speed1-Two Speed Low (50%) Speed2-Two Speed High (100%) Speed1 to 6 for Multiple Speed selection
Cfg_VarSpeedFan_CoolMinSpeed	0 to 100%	20%	Analog Value	1468	Minimum Fan speed Setpoint for New Variable Speed Fan during Conventional Cooling Mode.
Cfg_VarSpeedFan_CoolMaxSpeed	0 to 100%	100%	Analog Value	1469	Minimum Fan speed Setpoint for New Variable Speed Fan during Conventional Cooling Mode.
Cfg_VarSpeedFan_HeatMinSpeed	0 to 100%	10%	Analog Value	1473	Minimum Fan speed Setpoint for New Variable Speed Fan during Conventional Heating Mode.
Cfg_VarSpeedFan_HeatMaxSpeed	0 to 100%	50%	Analog Value	1474	Maximum Fan speed Setpoint for New Variable Speed Fan during Conventional Cooling Mode.
Cfg_VarSpeedFan_PurgeSpeed	0 to 100%	100%	Analog Value	1472	Purget speed Setpoint for New Variable Speed Fan
Cfg_VarSpeedFan_VentSpeed	0 to 100%	20%	Analog Value	1470	Vent speed Setpoint for New Variable Speed Fan
Cfg_VarSpeedFanType	**1** = 0-10V **2** = 2-10V	**2** = 2-10V	Multistate Value	373	Variable Fan Speed Type characteristics selection

Exhaust fan configuration

Table 9: Exhaust fan configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Econ_EXH1Sp	0 to 100%	50%	Analog Value	1483	Exhaust Fan1 Damper Pos Setpoint for Single Fan Speed
Cfg_Econ_EXH2Sp	0 to 100%	75%	Analog Value	1484	Exhaust Fan2 Damper Pos Setpoint for Single Fan Speed
Cfg_Econ_EXH1SpL	0 to 100%	65%	Analog Value	1485	Exhaust Fan1 Damper Pos Setpoint for Multiple Fan Speed Low and Two Speed Low
Cfg_Econ_EXH1SpH	0 to 100%	50%	Analog Value	1486	Exhaust Fan1 Damper Pos Setpoint for Multiple Fan Speed High and Two Speed High
Cfg_Econ_EXH2SpM	0 to 100%	60%	Analog Value	1487	Exhaust Fan1 Damper Pos Setpoint for Variable Fan Speed Medium
Cfg_Econ_EXH2SpL	0 to 100%	80%	Analog Value	1488	Exhaust Fan2 Damper Pos Setpoint for Multiple Fan Speed Low and Two Speed Low
Cfg_Econ_EXH2SpH	0 to 100%	75%	Analog Value	1489	Exhaust Fan2 Damper Pos Setpoint for Multiple Fan Speed High and Two Speed High
Cfg_Econ_EXH2SpM	0 to 100%	78%	Analog Value	1490	Exhaust Fan2 Damper Pos Setpoint for Multiple Fan Speed Medium

Fan coil (FCU) configuration

Table 10: Fan coil (FCU) configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanCoilType	**1**=2 Pipe **2**=4 Pipe Dual	**2**= 4 Pipe Dual	Multistate Value	575	Fan Coil (FCU) Type selection 1 = 2 Pipe Single Coil 2 = 4 Pipe Dual Coil

Table 10: Fan coil (FCU) configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanCoilHtgType	**1**=None **2**=OnOff **3**=Mod **4**=Floating	**2**=OnOff	Multistate Value	576	Fan Coil (FCU) Heating Type selection
Cfg_FanCoilClgType	**1**=None **2**=OnOff **3**=Mod **4**=Floating	**2**=OnOff	Multistate Value	577	Fan Coil (FCU) Cooling Type selection
Cfg_FanCoilHtgDriveType	**1**=Direct **2**=Reverse	**1**=Direct	Multistate Value	578	Fan Coil (FCU) Heating Valve Drive Type for Floating Actuator 1=DirectCW 2=ReverseCCW
Cfg_FanCoilClgDriveType	**1**=Direct **2**=Reverse	**1**=Direct	Multistate Value	579	Fan Coil (FCU) Cooling Valve Drive Type for Floating Actuator 1=DirectCW 2=ReverseCCW
Cfg_FanCoilHtgDriveTime	0 to 240 sec	90 sec	Analog Value	1721	Fan Coil (FCU) Heating Valve Drive Time for Floating Actuator
Cfg_FanCoilClgDriveTime	0 to 240 sec	90 sec	Analog Value	1722	Fan Coil (FCU) Cooling Valve Drive Time for Floating Actuator
Cfg_FanCoilTwoPipeSingleCoil	**1**=Heating Only **2**=Cooiling Only	**1**=Heating Only	Multistate Value	580	Fan Coil (FCU) Two Pipe Single Valve Type selection
Cfg_FanCoilSupTempHtgSp	75 to 180 °F (24 to 82 °C)	85 °F (29.4 °C)	Analog Value	1723	Fan Coil (FCU) SupplyTemp heating Sp
Cfg_FanCoilSupTempHtgOffsetSp	0 to 90 Δ°F (0 to 50 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	1731	Fan Coil (FCU) SupplyTemp heating Offset Sp
Cfg_FanCoilSupTempClgSp	40 to 80 °F (4.5 to 26.5 °C)	55 °F (12.7 °C)	Analog Value	1724	Fan Coil (FCU) SupplyTemp Cooling Sp
Cfg_FanCoilSupTempClgOffsetSp	0 to 40 Δ°F (0 to 22 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	1732	Fan Coil (FCU) SupplyTemp Cooling Offset Sp
Cfg_FanCoilTwoSpeedType	**1**=Multiple outputs at a time **2**=Single output at a time	**1**=Multiple outputs at a time	Multistate Value	581	Fan Coil (FCU) Two Speed Type Selection (Low/High)
Cfg_FanCoilThreeSpeedtype	**1**=Serial **2**=Parallel	**1**=Serial	Multistate Value	582	Fan Coil (FCU) Three Speed Type Selection (Low/Med/High)

Table 10: Fan coil (FCU) configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanCoilManualSpeedSel	**1**=Auto **2**=Low **3**=Medium **4**=High **5**=Off	**1**=Auto	Multistate Value	583	Fan Coil (FCU) Manual Speed Type Selection
Cfg_FanCoilDATSpEnSwitch	**0**=Off **1**=On	**0**=Off	Boolean Value	454	Fan Coil (FCU) Discharge Air Setpoint Control Enable Switch
Cfg_FanCoilClgFloatingSyncEn	**0**=SyncOff **1**=SyncOn	**1**=SyncOn	Boolean Value	462	Fan Coil (FCU) Floating Clg Valve Sync Enable during Midnight (For e.g. Mon to Sun-00.00 to 00.05p.m)
Cfg_FanCoilHtgFloatingSyncEn	**0**=SyncOff **1**=SyncOn	**1**=SyncOn	Boolean Value	453	Fan Coil (FCU) Floating Htg Valve Sync Enable during Midnight (For e.g. Mon to Sun-00.00 to 00.05p.m)
Cfg_FanCoilDATCtr_CoolTr	0 to -30 Δ°F (0 to 16.5 Δ°C)	6 Δ°F (3.3 Δ°C)	Analog Value	1733	Fan Coil (FCU) SupplyTemp Cooling PID Control Proportional Band Sp
Cfg_FanCoilDATCtr_CoolIt	0 to 5000 sec	600 sec	Analog Value	1734	Fan Coil (FCU) SupplyTemp Cooling PID Control Integral Time Sp
Cfg_FanCoilDATCtr_CoolDt	0 to 3000 sec	0 sec	Analog Value	1735	Fan Coil (FCU) SupplyTemp Cooling PID Control Derivative Time Sp
Cfg_FanCoilDATCtr_HeatTt	0 to -30 Δ°F (0 to 16.5 Δ°C)	6 Δ°F (3.3 Δ°C)	Analog Value	1736	Fan Coil (FCU) SupplyTemp Heating PID Control Proportional Band Sp
Cfg_FanCoilDATCtr_HeatIt	0 to 5000 sec	600 sec	Analog Value	1737	Fan Coil (FCU) SupplyTemp Heating PID Control Integral Time Sp
Cfg_FanCoilDATCtr_HeatDr	0 to 3000 sec	0 sec	Analog Value	1738	Fan Coil (FCU) SupplyTemp Heating PID Control Derivative Time Sp
Cfg_FanCoilTwoSpeedVentMode	**1**=Low **2**=High	**1**=Low	Multistate Value	585	Fan Coil (FCU) Two Speed Type Vent Mode Selection
Cfg_FanCoilThreeSpeedVentMode	**1**=Low **2**=Medium **3**=High	**2**=Medium	Multistate Value	586	Fan Coil (FCU) Three Speed Type Vent Mode Selection

Table 10: Fan coil (FCU) configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_FanCoilDrainPanSrChar	**0**=DIRECT **1**=REVERSE	**0**=DIRECT	Binary Value	455	FCU CHWV Leak Detector/ Drain Pan Sensor characteristics
Cfg_FanCoilOnOffHtgVlvChar	**0**=DIRECT **1**=REVERSE	**0**=DIRECT	Binary Value	458	FCU 2Pipe Single/4Pipe Dual Heating Valve characteristics
Cfg_FanCoilOnOffClgVlvChar	**0**=DIRECT **1**=REVERSE	**0**=DIRECT	Binary Value	459	FCU 2Pipe Single/4Pipe Dual Cooling Valve characteristics

Cooling configuration

Table 11: Cooling configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Cool_CoolType	**1** = 1 Stage **2** = 2 Stages **3** = 3 Stages **4** = None	**2** = 2 Stages	Multistate Value	13	Cooling Type selection. The number of compressor stages used for cooling or heat pump heating / cooling stages.
Cfg_Equip_CoolType	**1** = 1 Stage **2** = 2 Stages **3** = 3 Stages **4** = None	**2** = 2 Stages	Multistate Value	366	Conventional Cool equipment type
Cfg_Cool_Tr	**0** = Auto 1 to 30 **Δ**°F (0.5 to 16.5 **Δ**°C)	**0** = Auto	Analog Value	41	Cooling Throttling Range
Cfg_Cool_It	0 to 5000 sec	2500 sec	Analog Value	42	Cooling Integral Time 0 = disable (i.e. proportional only)
Cfg_Cool_Dt	0 to 3000 sec	0 sec	Analog Value	43	Cooling Derivative Time
Cfg_Cool_CPH	2 to 20 CPH	3 CPH	Analog Value	44	Cooling System Response
Cfg_Cool_MinOnTime	0 to 300 sec	120 sec	Analog Value	45	Cooling Stage Minimum on Time
Cfg_Cool_MinOffTime	0 to 300 sec	60 sec	Analog Value	82	Cooling Stage Minimum Off Time
Cfg_Cool_CoolLockoutSp	-40 to 120 °F (-40 to 48.5 °C)	35 °F (1.6 °C)	Analog Value	46	Outside Air Cooling Lockout Setpoint
Cfg_Cool_DischLoLimSp	-40 to 60 °F (-40 to 15.5 °C)	45 °F (7.2 °C)	Analog Value	47	Discharge Air Temperature Low Limit Setpoint
Cfg_Cool_ModClEnMinOut	AV1476-AV1478 (default 2 - 10V)	20% of range (3.6V with the default 2 - 10V min and max)	Analog Value	1461	Minimum output voltage when modulating cool is enabled
Cfg_Mod_StgCl1En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	377	Use stage 1 as cool enable when configured for modulating cool
Cfg_ModCoolMin_Output	0-9V	2V	Analog Value	1476	Minimum voltage on cooling output (Zero)

Table 11: Cooling configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ModCoolMax_Output	1-10V	10V	Analog Value	1478	Maximum voltage on cooling output
Cfg_ModCoolInitialAtFull Op	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	385	Enable to initialize modulating cooling call at full output for 60 seconds
Cfg_ModCoolFullOpCycle Time	**1** = None **2** = 30Min **3** = 60Min **4** = 90Min **5** = 120Min	**1** = None	Multistate Value	374	Selection will return the modulating cooling output to full output for 60 seconds at the selected interval as long as the cooling call is active.
Cfg_ModCoolAction	**0 =** Direct **1 =** Reverse	**0** = Direct	Binary Value	381	Modulating Cool Polarity selection- Applicable only for Multiple fan Speed Selection
Cfg_Cool_EnableOATLock out	Disable=**0** Enable=**1**	Enable=**1**	Binary Value	467	Users can enable or disable the cool outdoor air temperature lockout function through the HMI.

Heating configuration

Table 12: Heating configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Heat_HeatType	**1** = 1 Stage **2** = 2 Stages **3** = 3 Stages **4** = None	**2** = 2 Stages	Multistate Value	20	Heating Type selection. The number used for gas or electric heat. For heat pump, these are the auxiliary heat stages.
Cfg_Equip_HeatType	**1** = None **2** = Staged **3** = Modulating	**2** = Stages	Multistate Value	21	Conventional Heat equipment type
Cfg_Heat_Tr	**0** = Auto 1 to 30 **Δ**°F (0.5 to 16.5 **Δ**°C)	**0** = Auto	Analog Value	54	Heating Throttling Range.
Cfg_Heat_It	0 to 5000 sec	2500 sec	Analog Value	55	Heating Integral Time 0 = disable (i.e. proportional only).
Cfg_Heat_Dt	0 to 3000 sec	0 sec	Analog Value	56	Heating Derivative Time.
Cfg_Heat_CPH	2 to 20 CPH	6 CPH	Analog Value	57	Heating System Response.
Cfg_Heat_MinOnTime	0 to 300 sec	120 sec	Analog Value	58	Heating Stage Minimum on Time.
Cfg_Heat_MinOffTime	0 to 300 sec	60 sec	Analog Value	59	Heating Stage Minimum Off Time
Cfg_Heat_HeatLockoutSp	40 to 120 °F (4.5 to 48.5 °C)	65 °F (18.3 °C)	Analog Value	60	Outside Air Heating Lockout Setpoint
Cfg_Heat_DischHiLimSp	65 to 140 °F (18.5 to 60 °C)	140 °F (60 °C)	Analog Value	61	Discharge Air Temperature High Limit Setpoint
Cfg_Heat_ModHtEnMinOut	AV1475 - AV1477 (default 2 -10V)	20% of range (3.6V with the default 2 - 10V min and max)	Analog Value	96	Minimum output voltage when modulating heat is enabled
Cfg_Mod_StgHt1En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	35	Use stage 1 as heat enable when configured for modulating heat
Cfg_Heat_FuelType	**1** = Standard Efficiency Gas **2** = High Efficiency Gas **3** = Oil **4** = Electric	**1** = Standard Efficiency Gas	Multistate Value	87	Fuel Type selection. Based on the fuel type the default CPH will vary. For Electric default CPH is 9, for other it is 6 CPH

Table 12: Heating configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ModHeatMin_Output	0-9V	2V	Analog Value	1475	Minimum voltage on heating output (zero)
Cfg_ModHeatMax_Output	1-10V	10V	Analog Value	1477	Maximum voltage on heating output
Cfg_ModHeatAction	**0** = Direct **1** = Reverse	**0** = Direct	Binary Value	380	Modulating Heat Polarity selection Applicable only for Multiple fan Speed Selection
Cfg_Heat_EnableOATLockout	Disable = **0** Enable = **1**	Enable = **1**	Binary Value	464	Users can enable or disable the heat outdoor air temperature lockout function through the HMI

Dehumidification configuration

Table 13: Dehumidification configuration

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Dehum_SpaceRHHighLimit	0% RH to 100% RH	65% RH	Analog Value	48	Space Relative Humidity (RH) High Limit setpoint.
Cfg_Dehum_MinOnTimeOpEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	12	Minimum on Time Operation Enable
Cfg_Dehum_MinOnTime	240 to 1200 sec	600 sec	Analog Value	49	Dehumidify Extended Cooling Minimum on Time
Cfg_Dehum_MinOnDelay	0 to 60 Mins	20 Mins	Analog Value	98	Dehumidification Minimum ON time
Cfg_Dehum_StageReHeatOpEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	133	Staged Reheat Operation Enable

Humidification configuration

Table 14: Humidification configuration

Note: All points are writable.					
Key	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Hum_SpaceRHLowLimit	0% RH to 100% RH	35% RH	Analog Value	62	Space Relative Humidity (RH) Low Limit setpoint.
Cfg_Hum_MinOnDelay	0 to 60 Mins	20 Mins	Analog Value	99	Humidification Minimum ON time.

Heat pump configuration

Table 15: Heat pump configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_HeatPmp_CngOvrRelayType	**0** = EnergOnCool **1** = EnergOnHeat	**0** = EnergOnCool	Binary Value	13	Heat Pump Change Over Relay - Energize on Cooling (O) - Energize on Heating (B)
Cfg_HeatPmp_AuxHeatLockoutSp	30 to 120 °F (-1 to 48.5 °C)	65 °F (18.3 °C)	Analog Value	50	Auxiliary OAT High Heat Lockout
Cfg_HeatPmp_CompLockoutSp	0 to 70 °F (-17.5 to 21 °C)	30 °F (-1 °C)	Analog Value	51	Heat Pump Compressor OAT Low Lockout
Cfg_HeatPmp_AuxHeatDroop	0 to 10 Δ°F (0 to 5.5 Δ°C)	1 Δ°F (0.5 Δ°C)	Analog Value	52	Auxiliary Heating Droop
Cfg_HeatPmp_AuxHeatRampFactor	0.0 to 100.0	2	Analog Value	53	Auxiliary Heating Recovery Ramp Factor.
Cfg_HeatPmp_ComfortMode	**0** = Saving **1** = Comfort	**0** = Saving	Binary Value	14	Decides the Auxiliary and compressor Heating operation
Cfg_HeatPmp_UpStgTmr	30 to 960 Mins	0 Min	Analog Value	215	Up stage timer value.
Cfg_AuxiliaryHeat_EnableOATLockout	Disable = **0** Enable = **1**	Enable = **1**	Binary Value	466	Users can enable or disable the auxiliary heat outdoor air temperature lockout function through the HMI.
Cfg_Compressor_EnableOATLockout	Disable = **0** Enable = **1**	Enable = **1**	Binary Value	465	Users can enable or disable the compressor outdoor air temperature lockout function through the HMI.

Economizer configuration

Table 16: Internal Economizer configuration

Note: All points are writable.					
Key	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Econ_EconomizerType	**1** = None **2** = External **3** = Internal	**1** = None	Multistate Value	22	Economizer Type. If Economizer Type is internal, then please refer the following points
Cfg_CO2_SensorType	**0** = 0-10 Vdc **1** = 2-10Vdc	**1**=2-10 Vdc	Binary Value	179	External Economizer CO2 Sensor Input Voltage Range
Cfg_CO2_SensorZero	0 to 500 ppm	0 ppm	Analog Value	349	External Economizer CO2 Sensor Zero Selection @min. sensor voltage output.
Cfg_CO2_SensorSpan	0 to 5000ppm	2000 ppm	Analog Value	350	External Economizer CO2 Sensor Span
Cfg_CO2Output	**0** = 0-10 Vdc **1** = 2-10 Vdc	**1**=2-10 Vdc	Binary Value	181	External Economizer CO2 Output Type
Cfg_Econ_FreeCoolSelect	**1** = Fixed Drybulb **2** = Differential Drybulb **3** = Fixed Enthalpy **4** = Differential Enthalpy	**1** = Fixed Drybulb	Multistate Value	84	Internal Economizer Free Cooling Criteria Selection
Cfg_Econ_DrybulbSp	48 to 80 °F (9 to 26.5 °C)	63 °F (17.2 °C)	Analog Value	196	Internal Economizer Drybulb Temperature setpoint below which the free cooling can be enabled 1
Cfg_Econ_EnthCurveSel	ES1, ES5, ES3, ES4, ES5	ES3	Multistate Value	94	Choice of enthalpy curve for free cooling available when using Fixed Enthalpy 3
For Single Fan Speed Cfg_Econ_MinDamperPos	0 to 100%	30%	Analog Value	320	Minimal Damper Position of Single Fan Speed (1-Speed fan), when DCV is enabled.
For Two Fan Speed Cfg_ Econ_MinDamperPosLow	0 to 100%	50%	Analog Value	321	Minimal Damper Position of Fan Low Speed (2-Speed fan), when DCV is enabled.
For Two Fan Speed Cfg_ Econ_MinDamperPos	0 to 100%	30%	Analog Value	320	Minimal Damper Position of Fan High Speed (2-Speed fan), when DCV is enabled.
For Three Fan Speed Cfg_Econ_MinDamperPosLow	0 to 100%	50%	Analog Value	321	Minimal Damper Position of Fan Low Speed (Multi-Speed fan), when DCV is enabled.
For Three Fan Speed Cfg_Econ_MinDamperPosMed	0 to 100%	40%	Analog Value	322	Minimal Damper Position of Fan Medium Speed (Multi-Speed fan), when DCV is enabled.

Table 16: Internal Economizer configuration

Note: All points are writable.					
Key	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
For Three Fan Speed Cfg_Econ_MinDamperPos	0 to 100%	30%	Analog Value	320	Minimal Damper Position of Fan High Speed (Multi-Speed fan), when DCV is enabled.
Cfg_Econ_ShutdownDamperPos	1 or 2	1	Multistate Value	96	**1**=Close, **2**=Open Damper Position in Shutdown mode
Cfg_Econ_FreezeProtDamperPos	1 or 2	2	Multistate Value	95	**1**=Close, **2**=Min Damper Position in Freeze Protection mode
Cfg_Econ_MaTempSetPt	38 to 70 °F (3.5 to 21 °C)	53 °F (11.6 °C)	Analog Value	201	Mixed air temperature setpoint
Cfg_Econ_MaLoTempSetPt	35 to 65 °F (2 to 18 °C)	45 °F (7.2 °C)	Analog Value	204	Mixed air low limit for Freeze Protection
Cfg_Econ_MechCoolingDelay	0 to 20min	20min	Analog Value	327	Time delay between damper position reach full open and Fan go to high speed TO first stage mechanical cooling turning on
Cfg_MaTThresholdValue	1 to 5 Δ°F (1 to 2.5 Δ°C)	3 Δ°F (1.6 Δ°C)	Analog Value	1466	MAT Threshold Value for FDD Enhancement logic
Cfg_DmprDelayTime	0 to 500 sec	300 sec	Analog Value	1467	Damper Time Delay to detect Mechanically Disconnect of Actuator

Filter configuration

Table 17: Filter configuration

Key	Range	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
Cfg_Filt_HiLimit	0~5 InWC	2.0 InWC	Analog Value	Writable	222	High Limit Alarm Point.

CHAPTER

5 COMMON CONFIGURATION

Topics covered

Equipment configuration

Standby configuration

Control configuration

Multi-sensor configuration

Occupancy setpoints configuration

Recovery setpoint configuration

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Thermostat configurations

Time syncing for the Niagara tool

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Sensor calibration configuration

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Sylk actuator configuration

Delta T Configuration

Auto demand response configuration

Demand control ventilation configuration (Internal Economizer)

Purge function

Window open configuration

Alarms

Space temperature alarm configuration

Discharge temperature alarm configuration

Equipment configuration

Table 18: Equipment configuration

Name	Range	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
Cfg_Equip_EquipType	**1** = Conv **2** = ASHP **3** = WSHP	**1** = Conv	Multistate Value	Writable	7	Heat Pump. Type selection • Conventional • Air Source Heat Pump (ASHP) • Water Source Heat Pump (WSHP)

Standby configuration

Table 19: Standby configuration

Name	Range	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
Cfg_Stdby_OccSts	**0** = Unoccupied **1** = Occupied	**0** = Unoccupied	Binary Value	Writable	36	Standby occupancy status

Control configuration

Table 20: Control configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Control_MainSensor	**1** = Local Temp/ Hum **2** = Remote Temp/ Hum **3** = Multi Temp/ Hum	**1** = Local Temp/ Hum	Multistate Value	9	Temperature/ Humidity sensor selection.
Cfg_Control_PowerupDelay	0-300 sec	10 sec	Analog Value	14	Initial delay to start control after power cycle.
Cfg_Control_SmokeMode	**1** = No Override **2** = Shutdown **3** = Pressurize **4** = Depressurize	**1** = No Override	Multistate Value	10	When Smoke Monitor state is on, the unit operates as configured through smoke mode

Multi-sensor configuration

Table 21: Multi-sensor configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ZoneMultiSens_Control	**1** = Avg **2** = Min **3** = Max **4** = Smart	**1** = Avg	Multistate Value	130	Main control sensor configuration
Cfg_ZoneMultiSens_Sens1_Wt	0 to 10 (0 = Disable)	10	Analog Value	33	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 1 is the local on-board temperature sensor.
Cfg_ZoneMultiSens_Sens2_Wt	0 to 10 (0 = Disable)	10	Analog Value	34	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 2 is the remote TR40 Sylk temperature sensor with Addr 2.
Cfg_ZoneMultiSens_Sens3_Wt	0 to 10 (0 = Disable)	10	Analog Value	35	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 3 is the remote TR40 Sylk
Cfg_ZoneMultiSens_Sens4_Wt	0 to 10 (0 = Disable)	10	Analog Value	36	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 4 is the remote TR40 Sylk
Cfg_ZoneMultiSens_Sens5_Wt	0 to 10 (0 = Disable)	10	Analog Value	37	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 5 is the remote TR40 Sylk
Cfg_ZoneMultiSens_Sens6_Wt	0 to 10 (0 = Disable)	10	Analog Value	219	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 6 is the remote TR120 Sylk temperature sensor with Addr 6. Refer Sensor1 for weighing calculation.

Table 21: Multi-sensor configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ZoneMultiHumSens_Control	**1** = Avg **2** = Min **3** = Max **4** = Smart	**1** = Avg	Multistate Value	77	Humidity sensor configuration.
Cfg_ZoneMultiSens_HumSens1_Wt	0 to 10 (**0** = Disable)	**10** = Enabled	Analog Value	181	Weighted avg allows individual sensors to have more influence on the avg calculation. Sensor 1 is the on-board Humidity sensor. Zone humidity sensor weighting. 0 = Sensor is disabled and not included in average, min, and max calculations. 1 to 10 = Sensor is enabled. If sensor has a valid reading, the sensor is included in average, min, and max calculations. $Weighted\ Average = \frac{W1*H1+W2*H2+W3*H3+W4*H4}{W1+W2+W3+W4}$ W1 to w4 are weights of sensor1 to sensor6 respectively. H1 to H4 are humidity values of sensor1 to sensor6 respectively.
Cfg_ZoneMultiSens_HumSens2_Wt	0 to 10 (**0** = Disable)	**10** = Enabled	Analog Value	180	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 2 is the remote TR40 Sylk humidity sensor with Addr 2. Refer Sensor1 for weighing calculation.
Cfg_ZoneMultiSens_HumSens6_Wt	0 to 10 (**0** = Disable)	**10** = Enabled	Analog Value	218	A weighted average allows individual sensors to have more influence on the average calculation. Sensor 6 is the remote TR120 Sylk humidity sensor with Addr 6. Refer Sensor1 for weighing calculation.

Occupancy setpoints configuration

Table 22: Occupancy setpoints configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Setpoints_OccCoolSp	40 to 120 °F (4.5 to 48.5 °C)	76 °F (24.4 °C)	Analog Value	4	Occupied Cooling Setpoint
Cfg_Setpoints_StbyCoolSp	40 to 120 °F (4.5 to 48.5 °C)	80°F (26.7 °C)	Analog Value	5	Standby Cooling Setpoint
Cfg_Setpoints_UnOccCoolSp	40 to 120 °F (4.5 to 48.5 °C)	85°F (29.4 °C)	Analog Value	6	Unoccupied Cooling Setpoint
Cfg_Setpoints_OccHeatSp	40 to 120 °F (4.5 to 48.5 °C)	68°F (20 °C)	Analog Value	7	Occupied Heating Setpoint
Cfg_Setpoints_StbyHeatSp	40 to 120 °F (4.5 to 48.5 °C)	65°F (18.3 °C)	Analog Value	8	Standby Heating Setpoint
Cfg_Setpoints_UnOccHeatSp	40 to 120 °F (4.5 to 48.5 °C)	55°F (12.8°C)	Analog Value	9	Unoccupied Heating Setpoint

Recovery setpoint configuration

Table 23: Recovery setpoint configuration

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Recovery_MaxCoolRampRate	0 to 20 Δ°F/hr (0 to 11 Δ°C/hr)	6 Δ°F/hr (3.3 Δ°C/hr)	Analog Value	18	Maximum Cooling Setpoint Ramp
Cfg_Recovery_MinCoolRampRate	0 to 20 Δ°F/hr (0 to 11 Δ°C/hr)	2 Δ°F/hr (1.1 Δ°C/hr)	Analog Value	16	Minimum Cooling Setpoint Ramp
Cfg_Recovery_MaxCoolRampTemp	-40 to 120 °F (-40 to 48.5 °C)	70 °F (21.1°C)	Analog Value	17	Outdoor air temperature at the maximum cool setpoint ramp.
Cfg_Recovery_MinCoolRampTemp	-40 to 120 °F (-40 to 48.5 °C)	90 °F (32.2°C)	Analog Value	15	Outdoor air temperature at the minimum cool setpoint ramp.

Table 23: Recovery setpoint configuration

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Recovery_MaxHeatRampRate	0 to 36 Δ°F/hr (0 to 20 Δ°C/hr)	8 Δ°F/hr (4.4 Δ°C/hr)	Analog Value	22	Maximum Cooling Setpoint Ramp
Cfg_Recovery_MinHeatRampRate	0 to 36 Δ°F/hr (0 to 20 Δ°C/hr)	2 Δ°F/hr (1.1 Δ°C/hr)	Analog Value	20	Minimum Cooling Setpoint Ramp
Cfg_Recovery_MaxHeatRampTemp	-40 to 120 °F (-40 to 48.5 °C)	60 °F (15.5 °C)	Analog Value	21	Outdoor air temperature at the maximum heat setpoint ramp.
Cfg_Recovery_MinHeatRampTemp	-40 to 120 °F (-40 to 48.5 °C)	0 °F (-17.8 °C)	Analog Value	19	Outdoor air temperature at the minimum heat setpoint ramp.

Demand shift setpoints configuration

Table 24: Demand shift setpoints configuration

Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**Access**	**BACnet Object Instance ID**	**Description**
Cfg_DemandLimCtl_TempDiffSp	0 to 10 Δ°F (0 to 5.5 Δ°C)	3 Δ°F (1.7 Δ°C)	Analog Value	Writable	38	Demand limit temperature differential Setpoint
Cfg_Thermostat_AdjStPt	-30 to 30 Δ°F (-16.5 to 16.5 Δ°C)	0 Δ°F (0 Δ°C)				

Thermostat configurations

Table 25: Thermostat configurations

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Thermostat_SysSwitch	**1** = Auto **2** = Cool **3** = Heat **4** = EmergHeat **5** = Off	**1** = Auto	Multistate Value	8	The system switch may be used by the contractor or occupant to change the operation of the Unit.
Cfg_Thermostat_SystemChangeOver	**0** = Auto **1** = Manual	**0** = Auto	Binary Value	157	Based on the selection of this point, the SystemSwitch options would be limited. If Auto, Auto mode will be available. If Manual, Auto mode would not be available
Cfg_Thermostat_SystemConfig	**1** = off/heat **2** = off/cool **3** = off/cool/heat **4** = off/Auto/cool/heat **5** = off/Auto/cool/heat/Em heat	**5** = off/Auto/cool/heat/Em heat	Multistate Value	36	To limit available user configurable options
Cfg_Thermostat_BypOverrideTime	**0** - 1080 Mins	180 Mins	Analog Value	10	Thermostat Bypass Override Time
Cfg_Thermostat_MinCoolSp	50 to 99 °F (10 to 37 °C)	50 °F (10 °C)	Analog Value	12	Minimum Cool Setpoint of Thermostat
Cfg_Thermostat_MaxHeatSp	40 to 90 °F (4.5 to 32 °C)	90 °F (32.2 °C)	Analog Value	13	Maximum Heat Setpoint of Thermostat
Cfg_Thermostat_Deadband	2 Δ°F to 9 Δ°F (1 to 5 Δ°C)	3 Δ°F (1.6 Δ°C)	Analog Value	101	Temperature differential between heat and cool setpoint
Cfg_Thermostat_HtAdjStPt	-30 to 30 Δ°F (-16.5 to 16.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	257	Temporary heat setpoint adjustment from User or from the supervisor
Cfg_Thermostat_ClAdjStPt	-30 to 30 Δ°F (-16.5 to 16.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	256	Temporary cool setpoint adjustment from User or from the supervisor
Cfg_Thermostat_TempOffSpLimit	0 Δ°F to 30 Δ°F (0 to 16.5 Δ°C)	30 Δ°F (16.6 Δ°C)	Analog Value	102	This point is used to limit the range of user adjustable setpoint
Cfg_Thermostat_TstUnitSel	**0**=Imperial **1**=Metric	**0**=Imperial	Binary Value	136	Thermostat unit definition (Imperial/Metric)

Table 25: Thermostat configurations (Continued)

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Thermostat_Override	**0** = Normal **1**=Override	**0** = Normal	Binary Value	135	Thermostat override. This point will not be saved over power cycle & will reset to default value upon loss of power
Cfg_Thermostat_CommUnitSel	Fahrenheit = **0** Celsius = **1**	Fahrenheit = **0**	Binary Value	2060	Users can switch the value in base point to Celsius or Fahrenheit

Time syncing for the Niagara tool

The TC500A thermostat requires local host time syncing in the Niagara WEBs-N4 tool.

To time sync the thermostat

Step 1. On the Niagara tool, under **BACnet network** > **Local Device** > **AX Property Sheet view**, expand the Time Synchronization Recipients property.

Step 2. Right click and select **Actions** > **addElement**. An addElement edit box opens. You may need to resize it.

Step 3. Select the double-down arrows by the device-1 to open the edit screen.

Step 4. Select device from the second pull-down and enter the device ID for the TC-500 in the final entry (“500” in this example).

Step 5. Select **OK**.

Step 6. Change the default Time Synchronization, as desired.

DHCP

The IP scheme can be configured to use DHCP, but the Wi-Fi router / IP network will configure it to reserve a specific, permanent pre-assigned IP address for the TC500. The TC500 MAC address is visible on the TC500 under System Status > Network Status. Once the DHCP reserves the IP address, the TC500 will connect to this IP address.

Sensor calibration configuration

Table 26: Sensor calibration configuration

Note: All points are writable.						
Sylk Address	**Name**	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
NA	Cfg_LocalSensCalOffset_Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	23	Local internal Temperature sensor calibration offset
NA	Cfg_LocalSensCalOffset_Hum	-10% RH to 10% RH	0	Analog Value	103	Local internal humidity sensor calibration offset
2	Cfg_SylkCalOffset_SylkBus2Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	24	TR40_2/ TR-21 Temperature calibration offset.This is common offset point if Remote sensor is configured.
2	Cfg_SylkCalOffset_SylkBus2RH	-10% RH to 10% RH	0	Analog Value	25	TR40_2 Humidity calibration offset
2	Cfg_SylkCalOffset_SylkBus2CO2	-100 ppm to 100 ppm	0	Analog Value	100	TR40_2 CO2 calibration offset
3	Cfg_SylkCalOffset_SylkBus3Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	26	TR40_3 Temperature calibration offset
4	Cfg_SylkCalOffset_SylkBus4Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	27	TR40_4 Temperature calibration offset
5	Cfg_SylkCalOffset_SylkBus5Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	28	TR40_5 Temperature calibration offset
6	Cfg_SylkCalOffset_SylkBus6Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	216	TR120_6 Temperature calibration offset
6	Cfg_SylkCalOffset_SylkBus6RH	-10% RH to 10% RH	0	Analog Value	217	TR120_6 Humidity calibration offset
8	Cfg_SylkCalOffset_SylkBus8Temp	-10 to 10 Δ°F (-5.5 to 5.5 Δ°C)	0 Δ°F (0 Δ°C)	Analog Value	29	C7400S Outdoor Air Temperature calibration offset
8	Cfg_SylkCalOffset_SylkBus8RH	-10% RH to 10% RH	0	Analog Value	30	C7400S Outdoor Air Humidity calibration offset

Table 26: Sensor calibration configuration **(Continued)**

Note: All points are writable.						
Sylk Address	**Name**	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
9	Cfg_SylkCalOffset_SylkBus9Temp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	137	C7400S Return Air Temperature calibration offset
9	Cfg_SylkCalOffset_SylkBus9RH	-10% RH to 10% RH	0	Analog Value	214	C7400S Return Air Humidity calibration offset
10	Cfg_SylkCalOffset_SylkBus10Temp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	31	C7400S Discharge Air Temperature calibration offset
10	Cfg_SylkCalOffset_SylkBus10RH	-10% RH to 10% RH	0	Analog Value	32	C7400S Discharge Air Humidity calibration offset
12	Cfg_SylkCalOffset_SylkBus12Temp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	138	C7400S Mixed Air Temperature calibration offset
12	Cfg_SylkCalOffset_SylkBus12RH	-10% RH to 10% RH	0	Analog Value	771	C7400S Mixed Air Humidity calibration offset
NA	Cfg_UISensCalOffset_DATemp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	185	Universal Input Discharge Air Temperature calibration offset
NA	Cfg_UISensCalOffset_OATemp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	186	Universal Input Outdoor Air Temperature calibration offset
NA	Cfg_UISensCalOffset_MATemp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	187	Universal Input Mixed Air Temperature calibration offset.
NA	Cfg_UISensCalOffset_RATemp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	427	Universal Input Return Air Temperature calibration offset
NA	Cfg_UISensCalOffset_SpcTemp	-10 to 10 **Δ**°F (-5.5 to 5.5 **Δ**°C)	0 **Δ**°F (0 **Δ**°C)	Analog Value	1464	Universal Input Space Temperature calibration offset
NA	Cfg_UISensCalOffset_CO2Lvl	-100 ppm to 100 ppm	0	Analog Value	188	Universal Input CO2 calibration offset

Sylk sensor configuration

Table 27: Sylk sensor configuration

Note: All points are writable.						
Sylk Address	**Name**	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
2	Cfg_Sylk_SylkBus2En	**1** = Disable **2** = TempOnly **3** = Temp&Hum **4** = Temp, Hum & CO2 **5** = Temp & CO2	**1** = Disable	Multistate Value	85	Sylk Bus addr-2 device enable/ disable. Sylk Device Type: TR40THCO2
3	Cfg_Sylk_SylkBus3En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	147	Sylk Bus addr-3 device enable/ disable. Device Type: TR40
4	Cfg_Sylk_SylkBus4En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	148	Sylk Bus addr-4 device enable/ disable. Device Type: TR40
5	Cfg_Sylk_SylkBus5En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	149	Sylk Bus addr-5 device enable/ disable. Device Type: TR40
6	Cfg_Sylk_SylkBus6En	**1** = Disable **2** = TempOnly **3** = Temp&Hum	**1** = Disable	Multistate Value	86	Sylk Bus addr-6 device enable/ disable. Device Type: TR120H/ TR75E
8	Cfg_Sylk_SylkBus8En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	151	Sylk Bus addr-8 device enable/ disable. Device Type: C7400
9	Cfg_Sylk_SylkBus9En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	152	Sylk Bus addr-9 device enable/ disable. Device Type: C7400
10	Cfg_Sylk_SylkBus10En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	153	Sylk Bus addr-10 device enable/ disable. Device Type: C7400
11	Cfg_Sylk_SylkBus11En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	178	Sylk Bus addr-11 device enable/ disable. Device Type: MS3103J Sylk Actuator
12	Cfg_Sylk_SylkBus12En	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	154	Sylk Bus addr-12 device enable/ disable. Device Type: C7400

Sylk actuator configuration

Table 28 Sylk actuator configuration

Note: All points are writable.						
Sylk Address	**Name**	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
11	Cfg_SylkBus11TravelTime	30 sec to 180 sec	90 sec	Analog Value	301	Stroke Time required to travel from Full close to Fully Open position. During test mode, this travel time will be set 30 sec by default.
11	Cfg_SylkBus11Testmode	**0** = OFF **1** = ON	30 sec	Analog Value	331	During Test mode, the Sylk actuator travel time will be set 30 sec. Test Mode On=30 sec Test Mode Off=90 sec (Adj.)
11	Cfg_Sylk11CalibrTrigger	**0** = Calib Off **1** = Calib On	**1** = Calib On	Boolean Value	221	Sylk Actuator Calibration Trigger. If it changes from false to true will trigger actuator calibration (ON/OFF)

Delta T Configuration

Table 29 Delta T configuration

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_StagedHeatEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	246	Delta-T On/ OFF switch for heating stage of Conv. Equip or Aux heating stage of Heat Pump
Cfg_HeatStage1Min	5 to 146 Δ°F (3 to 81 Δ°C)	40 Δ°F (22.2 Δ°C)	Analog Value	955	Heating Stage-1 Heating Min Setpoint
Cfg_HeatStage1Max	9 to 150 Δ°F (5 to 83 Δ°C)	60 Δ°F (33.3 Δ°C)	Analog Value	956	Heating Stage-1 Heating Max Setpoint
Cfg_HeatStage1Delay	5 Min - 60 Mins	5 Mins	Analog Value	957	Heating Stage-1 Alert Delay Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_HeatStage2Min	5 to 146 Δ°F (3 to 81 Δ°C)	40 Δ°F (22.2 Δ°C)	Analog Value	958	Heating Stage-2 Heating Min Setpoint
Cfg_HeatStage2Max	9 to 150Δ°F (5 to 83 Δ°C)	60 Δ°F (33.3 Δ°C)	Analog Value	959	Heating Stage-2 Heating Max Setpoint
Cfg_HeatStage2Delay	5 Min - 60 Mins	5 Mins	Analog Value	960	Heating Stage-2 Alert Delay Setpoint
Cfg_HeatStage3Min	5 to 146 Δ°F (3 to 81 Δ°C)	40 Δ°F (22.2 Δ°C)	Analog Value	961	Heating Stage-3 Heating Min Setpoint
Cfg_HeatStage3Max	9 to 150 Δ°F (5 to 83 Δ°C)	60 Δ°F (33.3 Δ°C)	Analog Value	962	Heating Stage-3 Heating Max Setpoint
Cfg_HeatStage3Delay	5 Min - 60 Mins	5 Mins	Analog Value	963	Heating Stage-3 Alert Delay Setpoint
Cfg_StagedCoolEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	247	Delta-T On/OFF switch for cooling stage of Conv. equip or compressor cooling stage of Heat Pump.
Cfg_CoolStage1Min	5 to 146 Δ°F (3 to 81 Δ°C)	16 Δ°F (8.8 Δ°C)	Analog Value	964	Cooling Stage-1 Cooling Min Setpoint
Cfg_CoolStage1Max	9 to 150 Δ°F (5 to 83 Δ°C)	24 Δ°F (13.3 Δ°C)	Analog Value	965	Cooling Stage-1 Cooling Max Setpoint
Cfg_CoolStage1Delay	5 Min - 60 Mins	7 Mins	Analog Value	966	Cooling Stage-1 Alert Delay Setpoint
Cfg_CoolStage2Min	5 to 146 Δ°F (3 to 81 Δ°C)	16 Δ°F (8.8 Δ°C)	Analog Value	967	Cooling Stage-2 Cooling Min Setpoint
Cfg_CoolStage2Max	9 to 150 Δ°F (5 to 83 Δ°C)	24 Δ°F (13.3 Δ°C)	Analog Value	968	Cooling Stage-2 Cooling Max Setpoint
Cfg_CoolStage2Delay	5 Min - 60 Mins	7 Mins	Analog Value	969	Cooling Stage-2 Alert Delay Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_CoolStage3Min	5 to 146 ΔºF (3 to 81 ΔºC)	16 ΔºF (8.8 ΔºC)	Analog Value	970	Cooling Stage-3 Cooling Min Setpoint
Cfg_CoolStage3Max	9 to 150 ΔºF (5 to 83 ΔºC)	24 ΔºF (13.3 ΔºC)	Analog Value	971	Cooling Stage-3 Cooling Max Setpoint
Cfg_CoolStage3Delay	5 - 60 Mins	7 Mins	Analog Value	972	Cooling Stage-3 Alert Delay Setpoint
Cfg_CoolStage4Min	5 to 146 ΔºF (3 to 81 ΔºC)	16 ΔºF (8.8 ΔºC)	Analog Value	1739	Cooling Stage-4 Cooling Min Setpoint
Cfg_CoolStage4Max	9 to 150 ΔºF (5 to 83 ΔºC)	24 ΔºF (13.3 ΔºC)	Analog Value	1740	Cooling Stage-4 Cooling Max Setpoint
Cfg_CoolStage4Delay	5 Min - 60 Mins	7 Mins	Analog Value	1741	Cooling Stage-4 Alert Delay Setpoint
Cfg_ComprHeatEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	248	Delta-T On/OFF switch for compressor heating stage of Heat Pump.
Cfg_ComprHeatStage1Min	5 to 146 ΔºF (3 to 81 ΔºC)	16 ΔºF (8.8 ΔºC)	Analog Value	973	Heating Stage-1 Heating/Cooling Min Setpoint
Cfg_ComprHeatStage1Max	9 to 150 ΔºF (5 to 83 ΔºC)	24 ΔºF (13.3 ΔºC)	Analog Value	974	Heating Stage-1 Heating/Cooling Max Setpoint
Cfg_ComprHeatStage1Delay	5 - 60 Mins	5 Mins	Analog Value	975	Heating/Cooling Stage-1 Alert Delay Setpoint
Cfg_ComprHeatStage2Min	5 to 146 ΔºF (3 to 81ΔºC)	16 ΔºF (8.8 ΔºC)	Analog Value	976	Heating/Cooling Stage-2 Heating Min Setpoint
Cfg_ComprHeatStage2Max	9 to 150 ΔºF (5 to 83ΔºC)	24 ΔºF (13.3 ΔºC)	Analog Value	977	Heating/Cooling Stage-2 Heating Max Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ComprHeatStage2Delay	5 - 60 Mins	5 Mins	Analog Value	978	Heating/ Cooling Stage-2 Alert Delay Setpoint
Cfg_ComprHeatStage3Min	5 to 146 Δ°F (3 to 81 Δ°C)	16 Δ°F (8.8 Δ°C)	Analog Value	979	Heating/ Cooling Stage-3 Heating Min Setpoint
Cfg_ComprHeatStage3Max	9 to 150 Δ°F (5 to 83 Δ°C)	24 Δ°F (13.3 Δ°C)	Analog Value	980	Heating/ Cooling Stage-3 Heating Max Setpoint
Cfg_ComprHeat3Delay	5 - 60 Mins	5 Mins	Analog Value	981	Heating/ Cooling Stage-3 Alert Delay Setpoint
Cfg_ModHeatEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	249	Delta-T On/ OFF switch for modulating heating equip., either Conv. Or Aux Heating of Heat Pump.
Cfg_ModHeatMin	5 to 146 Δ°F (3 to 81 Δ°C)	40 Δ°F (22.2 Δ°C)	Analog Value	986	Modulating Heating Min Setpoint
Cfg_ModHeatMax	9 to 150 Δ°F (5 to 83 Δ°C)	60 Δ°F (33.3 Δ°C)	Analog Value	987	Modulating Heating Max Setpoint
Cfg_ModHeatDelay	5 - 60 Mins	5 Mins	Analog Value	988	Modulating Heating Alert Delay Setpoint
Cfg_ModHeatMinOuput	0%- 100 %	20%	Analog Value	989	Modulating Heating Min Output percentage to enable Delta T
Cfg_ModulatingCoolEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	250	Delta-T On/ OFF switch for modulating cooling equipment
Cfg_ModCoolMin	5 to 146 Δ°F (3 to 81 Δ°C)	16 °F (8.8 °C)	Analog Value	982	Modulating Cooling Min Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ModCoolMax	9 to 150 Δ°F (5 to 83 Δ°C)	24 Δ°F (13.3 Δ°C)	Analog Value	983	Modulating Cooling Max Setpoint
Cfg_ModCoolDelay	5 - 60 Mins	5 Mins	Analog Value	984	Modulating Cooling Alert Delay Setpoint
Cfg_ModCoolMinOuput	0%- 100%	20%	Analog Value	985	Modulating Cooling Min Output percentage to enable Delta T
Cfg_StagedHeatMATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	133	Staged Heating MAT Enable
Cfg_StagedHeatMATempLimitMin	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	35 Δ°F (19.5 Δ°C)	Analog Value	990	Staged Heating MAT Min Setpoint
Cfg_StagedHeatMATempLimitMax	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	120 Δ°F (66.5 Δ°C)	Analog Value	991	Staged Heating MAT Max Setpoint
Cfg_StagedHeatMARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	134	Staged Heating MA RH Enable
Cfg_StagedHeatMARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	992	Staged Heating MA RH Min Setpoint
Cfg_StagedHeatMARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	993	Staged Heating MA RH Max Setpoint
Cfg_StagedHeatOATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	135	Staged Heating OAT Enable
Cfg_StagedHeatOATempLimitMin	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	-50 Δ°F (-27.5 Δ°C)	Analog Value	994	Staged Heating OAT Min Setpoint
Cfg_StagedHeatOATempLimitMax	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	140 Δ°F (77.5 Δ°C)	Analog Value	995	Staged Heating OAT Max Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_StagedHeatOARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	136	Staged Heating OA RH Enable
Cfg_StagedHeatOARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	996	Staged Heating OA RH Min Setpoint
Cfg_StagedHeatOARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	997	Staged Heating OA RH Max Setpoint
Cfg_StagedCoolMATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**0** = Off	Binary Value	137	Staged Cooling MAT Enable
Cfg_StagedCoolMATempLimitMin	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	35 Δ°F (19.5 Δ°C)	Analog Value	998	Staged Cooling MAT Min Setpoint
Cfg_StagedCoolMATempLimitMax	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	120 Δ°F (66.5 Δ°C)	Analog Value	999	Staged Cooling MAT Max Setpoint
Cfg_StagedCoolMARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	138	Staged Cooling MA RH Enable
Cfg_StagedCoolMARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	1000	Staged Cooling MA RH Min Setpoint
Cfg_StagedCoolMARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	1001	Staged Cooling MA RH Max Setpoint
Cfg_StagedCoolOATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**0** = Off	Binary Value	139	Staged Cooling OAT Enable
Cfg_StagedCoolOATempLimitMin	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	-50 Δ°F (-27.5 Δ°C)	Analog Value	1002	Staged Cooling OAT Min Setpoint
Cfg_StagedCoolOATempLimitMax	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	140 Δ°F (77.5 Δ°C)	Analog Value	1003	Staged Cooling OAT Max Setpoint
Cfg_StagedCoolOARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**0** = Off	Binary Value	140	Staged Cooling OA RH Enable

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_StagedCoolOARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	1004	Staged Cooling OA RH Min Setpoint
Cfg_StagedCoolOARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	1005	Staged Cooling OA RH Max Setpoint
Cfg_CmprHeatMATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**0** = Off	Binary Value	149	CompressorHeat Heating MAT Enable
Cfg_CmprHeatMATempLimitMin	35 to 120 **Δ**°F (19.5 to 66.5 **Δ**°C)	35 **Δ**°F (19.5 **Δ**°C)	Analog Value	1022	CompressorHeat Heating MAT Min Setpoint
Cfg_CmprHeatMATempLimitMax	35 to 120 **Δ**°F (19.5 to 66.5 **Δ**°C)	120 **Δ**°F (66.5 **Δ**°C)	Analog Value	1023	CompressorHeat Heating MAT Max Setpoint
Cfg_CmprHeatMARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	150	CompressorHeat Heating MA RH Enable
Cfg_CmprHeatMARHLimitMin	0 - 100% RH	0% RH	Analog Value	1024	CompressorHeat Heating MA RH Min Setpoint
Cfg_CmprHeatMARHLimitMax	0 - 100% RH	100% RH	Analog Value	1025	CompressorHeat Heating MA RH Max Setpoint
Cfg_CmprHeatOATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**0** = Off	Binary Value	256	CompressorHeat Heating OAT Enable
Cfg_CmprHeatOATempLimitMin	-50 to 140 **Δ**°F (-45.5 °C to 60 **Δ**°C)	-50 **Δ**°F (-27.5 **Δ**°C)	Analog Value	1026	CompressorHeat Heating OAT Min Setpoint
Cfg_CmprHeatOATempLimitMax	-50 to 140 **Δ**°F (-27.5 to 77.5 **Δ**°C)	140 **Δ**°F (77.5 **Δ**°C)	Analog Value	1027	CompressorHeat Heating OAT Max Setpoint
Cfg_CmprHeatOARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	254	CompressorHeat Heating OA RH Enable

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_CmprHeatOARHLimitMin	0 - 100% RH	0% RH	Analog Value	1028	CompressorHeat Heating OA RH Min Setpoint
Cfg_CmprHeatOARHLimitMax	0 - 100% RH	100 %RH	Analog Value	1029	CompressorHeat Heating OA RH Max Setpoint
Cfg_ModHeatMATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Multistate Value	141	Mod Heating MAT Enable
Cfg_ModHeatMATempLimitMin	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	35 Δ°F (19.5 Δ°C)	Analog Value	1006	Mod Heating MAT Min Setpoint
Cfg_ModHeatMATempLimitMax	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	120 Δ°F (66.5 Δ°C)	Analog Value	1007	Mod Heating MAT Max Setpoint
Cfg_ModHeatMARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	142	Mod Heating MA RH Enable
Cfg_ModHeatMARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	1008	Mod Heating MA RH Min Setpoint
Cfg_ModHeatMARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	1009	Mod Heating MA RH Max Setpoint
Cfg_ModHeatOATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAlll	**1** = NoLimits	Binary Value	143	Mod Heating OAT Enable
Cfg_ModHeatOATempLimitMin	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	-50 Δ°F (-27.5 Δ°C)	Analog Value	1010	Mod Heating OAT Min Setpoint
Cfg_ModHeatOATempLimitMax	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	140 Δ°F (77.5 Δ°C)	Analog Value	1011	Mod Heating OAT Max Setpoint
Cfg_ModHeatOARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	144	Mod Heating OA RH Enable
Cfg_ModHeatOARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	1012	Mod Heating OA RH Min Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_ModHeatOARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	1013	Mod Heating OA RH Max Setpoint
Cfg_ModCoolMATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	145	Mod Cooling MAT Enable
Cfg_ModCoolMATempLimitMin	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	35 Δ°F (19.5 Δ°C)	Analog Value	1014	Mod Cooling MAT Min Setpoint
Cfg_ModCoolMATempLimitMax	35 to 120 Δ°F (19.5 to 66.5 Δ°C)	120 Δ°F (66.5 Δ°C)	Analog Value	1015	Mod Cooling MAT Max Setpoint
Cfg_ModCoolMARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	146	Mod Cooling MA RH Enable
Cfg_ModCoolMARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	1016	Mod Cooling MA RH Min Setpoint
Cfg_ModCoolMARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	1017	Mod Cooling MA RH Max Setpoint
Cfg_ModCoolOATempLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	147	Mod Cooling OAT Enable
Cfg_ModCoolOATempLimitMin	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	-50 Δ°F (-27.5 Δ°C)	Analog Value	1018	Mod Cooling OAT Min Setpoint
Cfg_ModCoolOATempLimitMax	-50 to 140 Δ°F (-27.5 to 77.5 Δ°C)	140 Δ°F (77.5 Δ°C)	Analog Value	1019	Mod Cooling OAT Max Setpoint
Cfg_ModCoolOARHLimitEn	**1** = NoLimits **2** = MinLimit_MaxNoLimit **3** = MinNoLimit_MaxLimit **4** = MinLimit,MaxLimitAll	**1** = NoLimits	Binary Value	148	Mod Cooling OA RH Enable
Cfg_ModCoolOARHLimitMin	0 - 100 %RH	0 %RH	Analog Value	1020	Mod Cooling OA RH Min Setpoint
Cfg_ModCoolOARHLimitMax	0 - 100 %RH	100 %RH	Analog Value	1021	Mod Cooling OA RH Max Setpoint

Table 29 Delta T configuration (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_RunWithHum	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	251	Delta T Run With Humidification Point
Cfg_RunWithDehum	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	252	Delta T Run With De-Humidification Point
Cfg_DeltaTInitialConfig	0-255	255	Analog Value	255	Delta T Initial Configuration point to turn ON/OFF from HMI

Auto demand response configuration

Table 30 Auto demand response configuration

Note: All points are writable.					
Name	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_DRSwitch	True/False	0	Boolean Value	254	Configuration to turn on/off DR function on device
Cfg_DRHiOffset	3 to 10 **Δ**°F (2 to 5.5 **Δ**°C)	5 **Δ**°F (2.7 **Δ**°C)	Analog Value	1047	Configuration of DR setpoint offset for Simple Event with High level
Cfg_DRMoOffset	2 to 9 **Δ**°F (1.5 to 5 **Δ**°C)	4 **Δ**°F (2.2 **Δ**°C)	Analog Value	1465	Configuration of DR setpoint offset for Simple Event with Moderate level
Cfg_DRLoOffset	1 to 8 **Δ**°F (1 to 4 **Δ**°C)	3 **Δ**°F (1.6 **Δ**°C)	Analog Value	1048	Configuration of DR setpoint offset for Simple Event with Low level
Cfg_DRDefaultOption	Delta =**1** Absolute=**2**	Delta =**1**	Multistate Value	258	Configuration of default response to DR event, apply setpoint offset or absolute setpoints value
Cfg_DRDefaultOffset	0 to 10 **Δ**°F (0 to 5.5 **Δ**°C)	4 **Δ**°F (2.2 **Δ**°C)	Analog Value	1049	Configuration of default DR setpoint offset
Cfg_DRDefaultHtSp	40 to 90 °F (4.5 to 32 °C)	60 °F (15.5 °C)	Analog Value	1050	Configuration of default DR Heat setpoint
Cfg_DRDefaultClSp	50 to 99 °F (10 to 37 °C)	82 °F (27.7 °C)	Analog Value	1051	Configuration of default DR Cool setpoint

Table 30 Auto demand response configuration

Note: All points are writable.					
Name	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_DRMaxClSp	50 to 99 °F (10 to 37 °C)	85 °F (29.4 °C)	Analog Value	1052	Configuration of Maximum Cool Setpoint allowed during active DR event

Demand control ventilation configuration (Internal Economizer)

Table 31 Demand control ventilation (Internal Economizer)

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_DCV_CtrlEn	**0**=Disable **1**=Enable	**0** = Disable	Binary Value	144	Demand control ventilation logic enable point.
Cfg_DCV_VentMinPosHigh	0 % - 100 %	6%	Analog Value	205	Demand control ventilation OA damper minimum position for highest fan speed.
Cfg_DCV_VentMaxPosHigh	0% - 100%	30%	Analog Value	206	Demand control ventilation OA damper maximum position for highest fan speed.
Cfg_DCV_VentMinPosMid	0% - 100%	8 %	Analog Value	504	Demand control ventilation OA damper minimum position for medium fan speed.
Cfg_DCV_VentMaxPosMid	0 % - 100 %	40%	Analog Value	311	Demand control ventilation OA damper maximum position for medium fan speed.
Cfg_DCV_VentMinPosLow	0 % - 100 %	10%	Analog Value	207	Demand control ventilation OA damper minimum position for lowest fan speed.
Cfg_DCV_VentMaxPosLow	0 % - 100 %	50%	Analog Value	208	Demand control ventilation OA damper maximum position for lowest fan speed.
Cfg_DCV_CO2SetPt	500 to 2000 ppm	1000 ppm	Analog Value	209	CO2 threshold with +200 ppm throttling range.
Cfg_DCV_ThrottlingRange	0 to 400 ppm	200 ppm	Analog Value	213	CO2 dead band from the setpoint.(Display purpose only do not consider for calculation)
Cfg_Co2Output_Override	**0**-Disable **1**-Enable	**0** = Disable	Binary Value	259	Enhanced purge using DCV CO2 input on external economizer. Enabling will override CO2 Sensor Output to 10 Vdc during purge event.

Purge function

Table 32 Purge function

Key	Options / Range	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
Cfg_PurOutput	**0** = 0-10V **1** = 2-10V	**0** = 0-10V	Binary Value	Writable	258	Purge Control Output
Cfg_Purge_CtrlEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	Writable	172	Purge Function enable point
Cfg_Purge_Pos	0 to 100%	30	Analog Value	Writable	334	Purge Mode Damper Position Setpoint. Applicable to economizer version 2.7.5.4.

Window open configuration

Table 33 Window open configuration

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_WindowOpnSetng	**1** = Switch to Unoccupied Mode **2** = Turn off HVAC System **3** = Do nothing	**1** = Switch to Unoccupied Mode	Multistate Value	91	Window open sensor settings.
Cfg_WindowOpnDelay	1 to 60 Mins	5 Mins	Analog Value	297	Window open sensor on delay.

Alarms

Table 34 Alarms

Note: All points are writable, except Gui_Alarm_SylkActuatorFail.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_CO2Alarm_LvlHighLim	400 to 2000 ppm	1100 ppm	Analog Value	291	This is a user configurable point shown in HMI/ Supervisor/ mobile app which determines the high limit after which the CO2 alarm will be generated.
Cfg_Alarm_SupplyFanAlarm Config	Bit 0 False – Don't turn off Heat/Cool Outputs when alarm is triggered. Bit 0 True – Turn off Heat/Cool Outputs when alarm is triggered	Bit 0 True – Turn off Heat/ Cool Outputs when alarm is triggered	Analog Value	192	The user shall decide whether to enable or disable heating/ cooling outputs when supply fan is in alarm condition.

Table 34 Alarms

Note: All points are writable, except Gui_Alarm_SylkActuatorFail.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_Alarm_TempSensAlarm Config	Bit 0 False – Don't turn off Heat/Cool Outputs when alarm is triggered. Bit 0 True – Turn off Heat/Cool Outputs when alarm is triggered	Bit 0 True – Turn off Heat/ Cool Outputs when alarm is triggered	Analog Value	193	The user shall decide whether to enable or disable heating/ cooling outputs when temperature sensor is in alarm condition.
Gui_Alarm_SylkActuatorFail	1 to 6	1	Multistate output	99	Sylk Actuator Failure Alarms. 1-No Error, 2=Under Voltage, 3-Over Voltage, 4-Stall, 5- Over Voltage & Stall, 6- Under Voltage & Stall. (Display purpose only do not consider for calculation)
Cfg_AlarmConfig_ CHWDrainPanSrAlarm	**1**=TurnOffCoolOuputs, **2**=PopUpOnHomeScreen **4**=Acknowledged **8**=TurnOffHeatOutputs **16** = TurnOffFanOutputs Bit 0=False- Don't turn off Cool Outputs when Pan Sr alarm is triggered Bit 0=True-Turn off Cool Outputs when Pan Sr alarm is triggered Bit 1=False- Don't Pop Up Heat/Cool Outputs on Home screen when Pan Sr alarm is triggered	**2**=PopUp OnHome Screen	Multistate Value	574	The user shall decide whether to enable Conventional/ASHP/ WSHP/Fancoil configuration for the leak detector/Pan Alarm alarm. TurnOffCoolOuputs=1 means use bit 0 to store the flag of turn off cool ouputs, 2=PopUpOnHomeScreen means use bit1 to store the flag of popup screen, 4=Acknowledged means use bit2 to store the flag of Acknowledge,

Table 34 Alarms

Note: All points are writable, except Gui_Alarm_SylkActuatorFail.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
	Bit 1=True-Pop Up Heat/Cool Outputs on Home screen when Pan Sr alarm is triggered Bit 2=False- Acknowledge button can click when Pan Sr alarm is triggered Bit 2=True Acknowledge button can't Click Indicates that the user already knows when Pan Sr alarm is triggered Bit 3=False- Don't turn off Heat Outputs when Pan Sr alarm is triggered Bit 3=True-Turn off Heat Outputs when Pan Sr alarm is triggered Bit 4=False- Don't turn off Heat Outputs when Pan Sr alarm is triggered Bit 4=True-Turn off Heat Outputs when Pan Sr alarm is triggered Bit 5=False- Don't turn off fan Outputs in the ventilation mode when Pan Sr alarm is triggered Bit 5=True-Turn off fan Outputs in the ventilation mode when Pan Sr alarm is triggered				8=TurnOffHeatOutputs means use bit3 to store the flag of turn off heat ouputs, 16 = TurnOffFanOutputs means use bit4 to store the flag of turn off fan outputs in the ventilation mode

Space temperature alarm configuration

Table 35 Space temperature alarm configuration

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_SpcAlarm_TempHighLim	100 to 150 °F (38 to 65.5 °C)	90 °F (32.2 °C)	Analog Value	254	This is a user configurable point shown in HMI, Supervisor, mobile app which determines the high limit after which the space temp alarm will be generated.
Cfg_SpcAlarm_TempLowLim	0 to 60 °F (-17.5 to 15.5 °C)	45 °F (7.2 °C)	Analog Value	255	This is a user configurable point shown in HMI, Supervisor, mobile app which accepts the low limit after which the space temp alarm will be generated.

Discharge temperature alarm configuration

Table 36 Discharge temperature alarm configuration

Note: All points are writable.					
Key	**Options / Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_DaTAlarm_TempHighLim	70 to 180 °F (21.5 to 82 °C)	140 °F (60 °C)	Analog Value	332	This is a user configurable point shown in HMI, Supervisor, mobile app which determines the high limit after which the Discharge temp alarm will be generated.
Cfg_DATAlarm TempLowLim	35 to 65 °F (2 to 18 °C)	45 °F (7.2 °C)	Analog Value	333	This is a user configurable point shown in HMI, supervisor, mobile app which accepts the low limit after which the Discharge temp alarm will be generated.

CHAPTER

6 NETWORK INPUTS

Topics covered

Fail detect

Tunning Policy

User non-configurable network inputs

User configurable network inputs

Sylk sensor proxy inputs

Configuration points for Point sharing

Fail detect

Network fail detect is used to detect when a network input has not been updated from the network for a period. When the network input has not been updated after about 5 minutes, the network input will return to a default value, typically 'Invalid'. The Fail detect is enabled when configured for the network variable and the network input is bound using a network tool. For the Global thermostat controller, the Fail detect for each network input is enabled based on the information given in this chapter.

Some network inputs are desired to have the Fail detect enabled when they are not bound using a network tool. This is useful for sharing sensor data across multiple controllers using the Global thermostat gateway which allows the control to fall back to a predetermined action when the network input has not been updated after a period (e.g. communication is lost). A configuration flag called FDWhenNotBound allows the network input to provide fail detection when it is not bound. For the Global thermostat controller, FDWhenNotBound for each network input is enabled based on the table below.

Fail Detect Enable: This is the time until the IRM controller is notified of a failure on this point.

True: If the parameter has not received an update from the IRM network source in the Fail detect time, then an alarm is generated, and the Present Value is set to Invalid.

Fail Detect Fall back Value Select: Fail Detect Fixed Value Define the value that should be set to 'Out' (when failure is detected), if the Fail Detect 'Enable' is True and the Fail Detect 'Fallback Value' is set to "Fixed Value". The Fail Detect only works if "In" is NULL and Fail. Detect 'Enable' is set to true.

'Update Rate' - Update interval in seconds within which 'Present Value' should get written over BACnet periodically. 'Present Value' not written within this interval will result in failure and 'Out' will be set with the value as configured in 'Fallback Value'.

Fallback Value:

- "InvalidValue" - 'Out' is set as NULL,
- "LastknownGoodValue" - If the last 'Out' value was not NULL then 'Out' is retained as it is, otherwise, the value from the 'Default Value' parameter goes to Out.
- "FixedValue" - "Fail Detect Fixed Value" value goes to 'Out'. 'Enable' - Set it to true to enable the Fail detection feature.
- Note - This feature enables monitoring of periodic updates of a function block over the network.

Fail Detect Delay: Fail detect time depends on the update rate configured.

False: False means the object retains the last value that was written to it until an IRM network source changes it or the IRM controller has a power outage or reset

Tunning Policy

It defines the rules for evaluating both write requests, which is to writable proxy points, as well as the acceptable "freshness" of read requests that result from polling. It includes standard tuning policy properties and additional properties related to client-side usage of the BACnet Subscribe COV service.

Note: If the controller supports COV, it is recommended to use this feature, it will optimize the bandwidth of the controller. IRMNX controller supports up to 20 points for COV. Since there a is a limitation in the Niagara framework on the COV feature, it is recommended to configure only up to 20 points and the rest of the points for polling. IrmBacnet Device comes with default IRM Tuning policy which enables COV feature. Whenever you perform BacnetNetwork discover for IrmBahnet device tool automatically create IrmTuningPolicy.

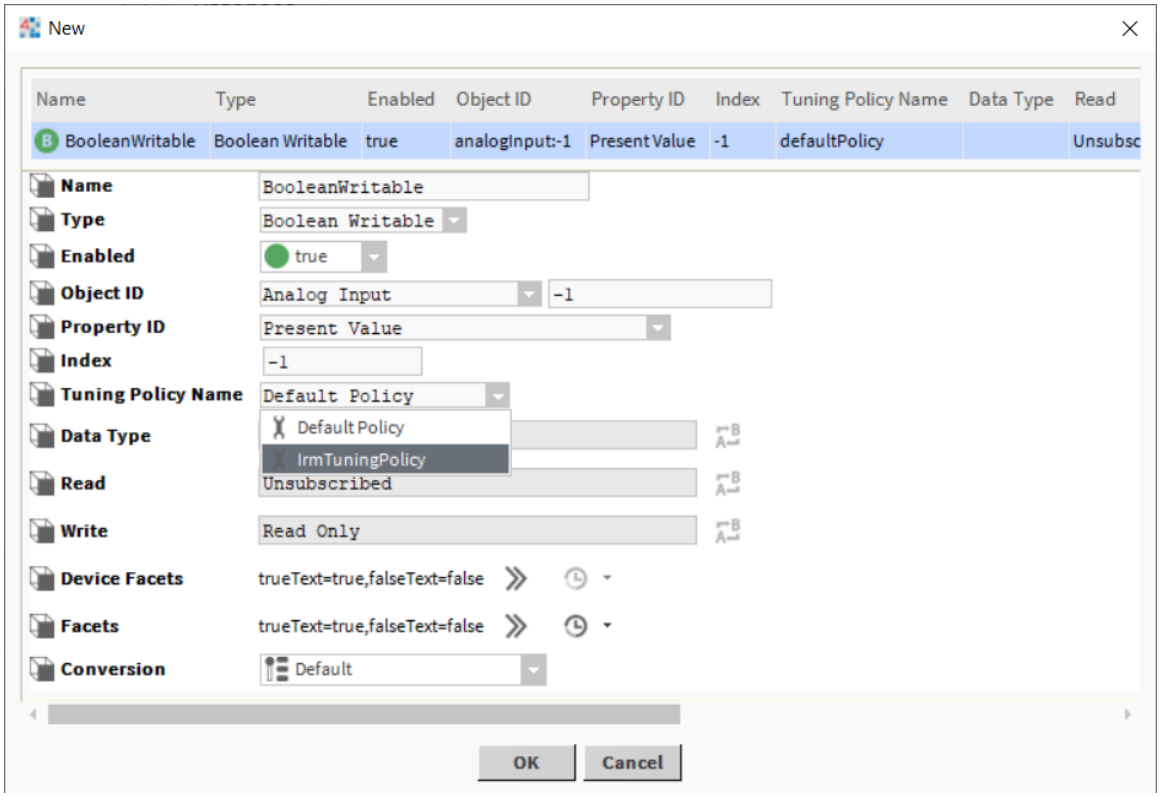
It is recommended to categories critical and less critical points, based on that you can assign the policy to all the different points. So that the critical points can be polled more frequently, and less critical points can be polled less frequently, this configuration helps to optimize the bandwidth.

To assign a policy

Step 1. Add points from the IRM point discovery manager.

Step 2. While configuring the point, assign the tuning policy from the drop-down list.

Fig 13. Adding IRM Tuning Policy



Another way to access these properties is by expanding **BacnetNetwork** > **Tuning Policies** or double-clicking **Default Policy**.

Fig 14. Tuning Policy - Default Policy

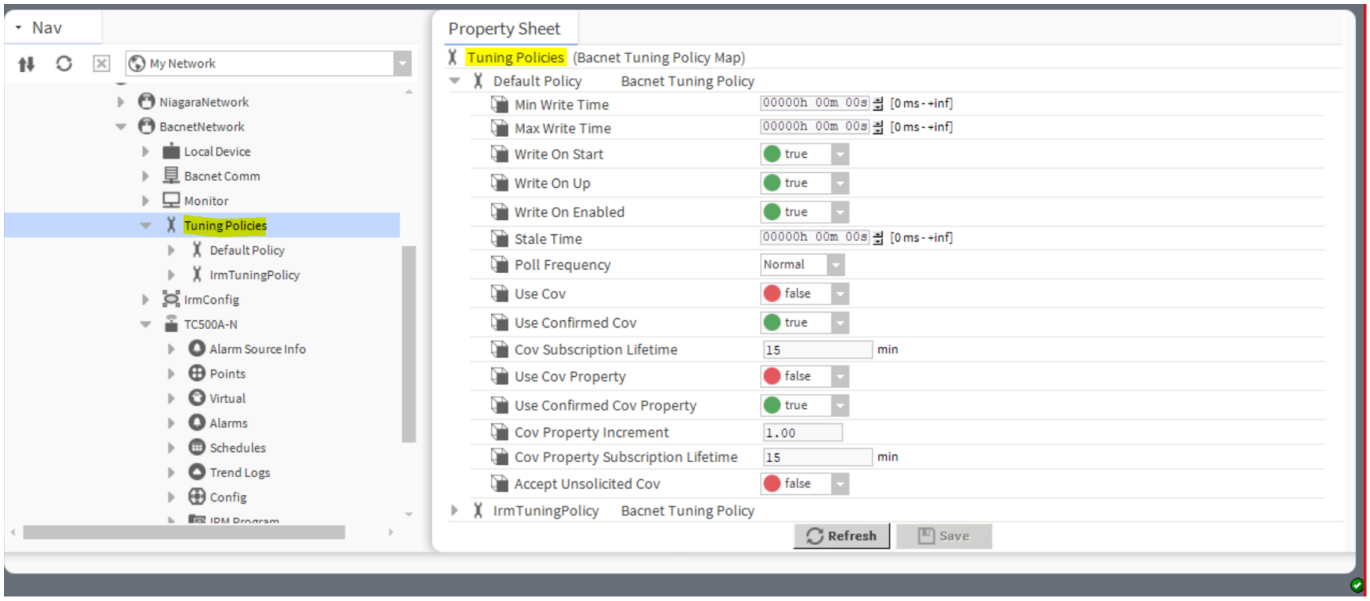
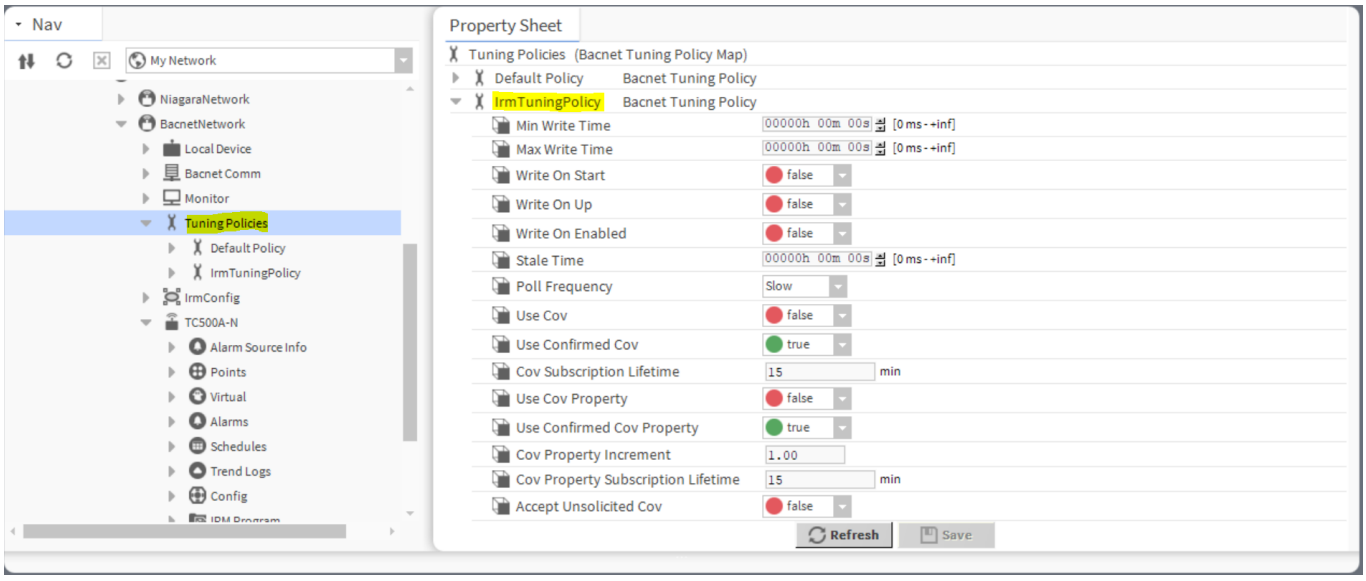


Fig 15. Tuning Policy Property Sheet



User non-configurable network inputs

Table 37 User non-configurable network inputs

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
ni_NetSchCurrentState	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = No Override	**5** = No Override	Multistate Value	1	Current Schedule State from Network.
ni_BypassState	**0**=Disable **1**=Enable	**0** = Disable	Binary Value	1	Net Bypass Input to enable Bypass Timer
ni_BypassValue	>=0	0	Analog Value	2	Bypass Value to enable Bypass Time
ni_DemandLimitControlEn	**0** = Normal **1**=DLCEnable	**0** = Normal	Binary Value	2	Demand Limit Control (DLC) input to limit the htg/ clg demand.
ni_OccupancySensorState	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = No Override	**5** = No Override	Multistate Value	6	Network Occupancy Sensor State
ni_OutdoorTemp	-40 to 150°F (-40 to 65.5 °C)	NA	Analog Value	89	This point is considered for Network point sharing of Outside Temperature sensor.
ni_OutdoorHum	0% RH to 100% RH	NA	Analog Value	194	This point is considered for Network point sharing of Outside Humidity sensor.
ni_OutdoorEnthalpy	0 to 100 BTU/lb	NA	Analog Value	339	This point is considered for Network point sharing of OA Enthalpy
ni_OutdoorDewpoint	0 to 100 °F	NA	Analog Value	340	This point is considered for Network point sharing of OA Dewpoint
ni_RaEnthalpy	0 to 100 BTU/lb	NA	Analog Value	341	This point is considered for Network point sharing of RA Enthalpy
ni_RaDewpoint	0 to 100 °F (-17.5 to 37.5 °C)	NA	Analog Value	342	This point is considered for Network point sharing of RA Dewpoint
ni_DROptOut	**0** = Normal **1** = OptOut	**0** = Normal	Binary Value	256	Network input to command thermostat to opt-out current active DR event-6241
ni_ServiceExhaustFan1Cmd	**0** = CmdOff **1** = CmdOn	**0** = CmdOff	Binary Value	390	Network input to command Exhaust Fan1-4620

Table 37 User non-configurable network inputs (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
ni_ServiceExhaustFan2Cmd	**0** = CmdOff **1** = CmdOn	**0** = CmdOff	Binary Value	391	Network input to command Exhaust Fan2-4621
ni_ShutdownState	**0** = Normal **1** = Shutdown	**0** = Normal	Binary Value	4	This point is considered for Network point sharing Shutdown input from Network.
ni_SmokeMonitorstate	**0** = Normal **1** = Smoke	**0** = Normal	Binary Value	5	Smoke Detector Network Input
ni_SpaceCO2	0-2000 ppm	NA	Analog Value	81	This point is considered for Network point sharing of Space CO2 Value.
ni_SpaceRH	0% RH to 100% RH	NA	Analog Value	80	This point is considered for Network point sharing of Space RH Value.
ni_SpaceTemp	-40 to 200°F (-40 to 93 °C)	NA	Analog Value	104	This point is considered for Network point sharing of Space Temperature Value.
ni_WSHPEnableState	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	25	This point is considered for Network point sharing of water source heat pump enable network input.
ni_WSHPEnableValue	>=0	0	Analog Value	88	This point is considered for Network point sharing of water source heat pump water flow available
ni_OccupancySensor	**1** = Occupied **0** = Unoccupied	Null	Binary Value	158	This point is considered for Network point sharing of Network occupancy sensor
ni_OccManCom	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = No Override	**5**=No Override	Multistate Value	4	Network Occupancy Manual Override Command.
ni_EmergencyHVACOverride	**1** = Normal **2** = Pressurize **3** = Depressurize **4** = Purge **5** = Shutdown	**1** = Normal	Multistate Value	5	Network emergency override to override the system operation manually. This point allows the TSTAT control to be overridden into an Emergency Mode (Normal/ Pressurize,Depressurize,Purge,Shutdown). If this point is not mapped it defaults to the “Normal' state.

Table 37 User non-configurable network inputs (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
ni_ApplicationMode	**1** = Auto **2** = Heat **3** = Cool **4** = Emergency Heat **5** = Fan Only **6** = Off	**1** = Auto	Multistate Value	3	Effective application mode from network. This value will not be persisted over power cycle.
ni_ServiceModeEn	**0** = No Override **1** = Service	**0** = No Override	Binary Value	6	Service Mode network input to facilitate installer during commissioning/ maintenance to shutdown all equipment.
ni_ServiceFan	**1** = Off **2** = On (Hi) **3** = Low **4** = Medium	**1** = Off	Multistate Value	23	Fan type configuration network input when service mode is enabled.
ni_ServiceFanSpeed	0 to 100%	0%	Analog Value	85	Fan speed configuration network input when service mode is enabled.
ni_ServiceCompStage1	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	16	Compressor Stage 1 configuration network input when service mode is enabled.
ni_ServiceCompStage2	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	17	Compressor Stage 2 configuration network input when service mode is enabled.
ni_ServiceCompStage3	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	18	Compressor Stage 3 configuration network input when service mode is enabled.
Ni_ServiceCoolStage4	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	463	Conventional Cool Stage 4 configuration network input when service mode is enabled.
ni_ServiceHeatStage1	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	19	Heating Stage 1 configuration network input when service mode is enabled.
ni_ServiceHeatStage2	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	20	Heating Stage 2 configuration network input when service mode is enabled.

Table 37 User non-configurable network inputs (Continued)

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
ni_ServiceHeatStage3	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	21	Heating Stage 3 configuration network input when service mode is enabled.
ni_ServiceHeatCtrl	0 to 100%	0%	Analog Value	86	Modulating Heating control configuration network input when service mode is enabled.
ni_ServiceCoolCtrl	0 to 100%	0 %	Analog Value	1152	Modulating Cooling control configuration network input when service mode is enabled.
ni_ServiceRevVlvCmd	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	22	Reversing valve configuration network input when service mode is enabled.
ni_ServiceSimpleDehCmd	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	23	Dehumudification configuration network input when service mode is enabled.
ni_ServiceSimpleHumCmd	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	24	Humidification configuration network input when service mode is enabled.
ni_ServiceEconomizerCmd	**0** = Cmd Off **1** = Cmd On	**0** = Cmd Off	Binary Value	141	Economizer command when service mode is enabled
ni_ServiceOccStatusCmd	**0** = UnOcc **1** = Occ	**0** = UnOcc	Binary Value	140	Occupancy Status command when service mode is enabled
ni_ServiceOaDmprCtrl	0 to 100%	0%	Analog Value	212	Outside air damper position when service mode is enabled.
ni_ServiceCO2OutputCmd	**0** = 0-10 Vdc **1** = 2-10 Vdc	**1** = 2-10 Vdc	Binary Value	220	Co2 Output Command when service mode is enabled
ni_ServicePurgeOutputCmdDO	**0** = 0-10 Vdc **1** = 2-10 Vdc	**1** = 2-10 Vdc	Binary Value	221	Purge Enhanced Binary Output Command when service mode is enabled
ni_ServicePurgeOP2-10V	0 % - 100 %	0 %	Analog Value	859	Purge Enhanced 2-10V Output Command when service mode is enabled
ni_DeviceLock	**0** = Idle **1** = GUI **2** = Network	**0**=Idle	Analog Value	195	Device lock point used to lock BACnet device input to prevent thermostat GUI from making changes.
ni_SylkBus11Cmd	0 % - 100 %	0 %	Analog Value	338	Outside air damper position during network shared value

User configurable network inputs

Table 38: User configurable network inputs

Key	Options / Range	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
ni_mstpClearErr	**1** = True **0** = False	**0** = False	Binary Value	Writable	174	This point is used to clear the network output mstpheadercrc and mstpdatacrc errors (Handled in firmware)

Sylk sensor proxy inputs

Table 39: Sylk sensor proxy inputs

Name	Default Value	BACnet Point Type	Access	BACnet Object Instance ID	Description
ni_SylkAddr2Temp	nan	Analog Value	Writable	238	Network Temp override for sylk addr-2
ni_SylkAddr2Hum	nan	Analog Value	Writable	239	Network Hum override for sylk addr-2
ni_SylkAddr2CO2	nan	Analog Value	Writable	240	Network CO2 override for sylk addr-2
ni_SylkAddr3Temp	nan	Analog Value	Writable	241	Network Temp override for sylk addr-3
ni_SylkAddr4Temp	nan	Analog Value	Writable	242	Network Temp override for sylk addr-4
ni_SylkAddr5Temp	nan	Analog Value	Writable	243	Network Temp override for sylk addr-5
ni_SylkAddr6Temp	nan	Analog Value	Writable	244	Network Temp override for sylk addr-6
ni_SylkAddr6Hum	nan	Analog Value	Writable	245	Network Hum override for sylk addr-6
ni_SylkAddr9Temp	nan	Analog Value	Writable	248	Network Temp override for sylk addr-9
ni_SylkAddr9Hum	nan	Analog Value	Writable	249	Network Hum override for sylk addr-9
ni_SylkAddr10Temp	nan	Analog Value	Writable	250	Network Temp override for sylk addr-10
ni_SylkAddr10Hum	nan	Analog Value	Writable	251	Network Hum override for sylk addr-10
ni_SylkAddr12Temp	nan	Analog Value	Writable	246	Network Temp override for sylk addr-12
ni_SylkAddr12Hum	nan	Analog Value	Writable	772	Network Hum override for sylk addr-12

Notes:

- For overriding OaTemp & OaHum Sylk Sensor values, please use ni_OutdoorTemp (Analog Value – 89) & ni_OutdoorHum (Analog Value – 194).
- Ni_ points used in a Niagra based system need to have a periodic write by using a Tuning policy with a maxWriteTime=1 min.

Configuration points for Point sharing

Table 40 Configuration points for point sharing

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_NetOccSenFailDetEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	159	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetOccSenFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	262	Network Fail Detection Fall back value
Cfg_NetOccSenFailFxdVal	**1** = Occupied **0** = Unoccupied	**0** = Unoccupied	Binary Value	160	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetOccSenFailDetDly	0 sec to 3600 sec	600 sec	Analog Value	263	Network Fail Detection delay in seconds
Cfg_NetOATFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	163	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetOATFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	270	Network Fail Detection Fall back value
Cfg_NetOATFailFxdVal	-40 to 150°F (-40 to 65.5 °C)	nan	Analog Value	272	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetOATFailDetDly	0 to 3600 sec	600 sec	Analog Value	271	Network Fail Detection delay in seconds
Cfg_NetOAHumFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	162	Network Fail Detection will be enabled only if network point is considered for sharing

Table 40 Configuration points for point sharing

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_NetOAHumFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	267	Network Fail Detection Fall back value
Cfg_NetOAHumFailFxdVal	0% RH to 100% RH	nan	Analog Value	269	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetOAHumFailDetDly	0 to 3600 sec	600 sec	Analog Value	268	Network Fail Detection delay in seconds
Cfg_NetShtdwnFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	164	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetShtdwnFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	273	Network Fail Detection Fall back value
Cfg_NetShtdwnFailFxdVal	**0** = Normal **1** = Shutdown	**0** = Normal	Binary Value	165	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetShtdwnFailDetDly	0 to 3600 sec	300 sec	Analog Value	274	Network Fail Detection delay in seconds
Cfg_NetSpceCO2FailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	166	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetSpceCO2FailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	275	Network Fail Detection Fall back value
Cfg_NetSpceCO2FailFxdVal	0 to 2000 ppm	nan	Analog Value	277	Applicable only if Network Fail Fall back value is configured to Fixed value (2)

Table 40 Configuration points for point sharing

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_NetSpceCO2FailDetDly	0 to 3600 sec	300 sec	Analog Value	276	Network Fail Detection delay in seconds
Cfg_NetSpceRHFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	167	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetSpceRHFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	278	Network Fail Detection Fall back value
Cfg_NetSpceRHFailFxdVal	0% RH to 100% RH	nan	Analog Value	280	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetSpceRHFailDetDly	0 to 3600 sec	300 sec	Analog Value	279	Network Fail Detection delay in seconds
Cfg_NetSpceTmpFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	168	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetSpceTmpFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	281	Network Fail Detection Fall back value
Cfg_NetSpceTmpFailFxdVal	-40 to 140°F (-40 to 60 °C)	nan	Analog Value	283	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetSpceTmpFailDetDly	0 to 3600 sec	300 sec	Analog Value	282	Network Fail Detection delay in seconds
Cfg_NetWSHPEnStFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	169	Network Fail Detection will be enabled only if network point is considered for sharing

Table 40 Configuration points for point sharing

Note: All points are writable.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
Cfg_NetWSHPEnStFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	284	Network Fail Detection Fall back value
Cfg_NetWSHPEnStFailFxdVal	**0** = Disable **1** = Enable	**0** = Disable	Binary Value	170	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetWSHPEnStFailDetDly	0 to 3600 sec	900 sec	Analog Value	285	Network Fail Detection delay in seconds
Cfg_NetWSHPEnValFailDetEn	**0** = Disable **1** = Enable	**1** = Enable	Binary Value	171	Network Fail Detection will be enabled only if network point is considered for sharing
Cfg_NetWSHPEnValFailFalbck	**0** = InvalidValue (Null) **1** = LastKnownGoodValue **2** = FixedValue	**0** = InvalidValue (Null)	Analog Value	286	Network Fail Detection Fall back value
Cfg_NetWSHPEnValFailFxdVal	0% - 100%	nan	Analog Value	287	Applicable only if Network Fail Fall back value is configured to Fixed value (2)
Cfg_NetWSHPEnValFailDetDly	0 to 3600 sec	600 sec	Analog Value	288	Network Fail Detection delay in seconds

CHAPTER

7 NETWORK OUTPUTS

Topics covered

General network outputs

Note: *All display points starts with prefix "no_xxx". Where "xxx" is the actual point name. Overriding these points over BACnet will have no effect in the actual logic. These are meant to be used only as display points.*

General network outputs

Note: *Demand Control Ventilation will be supported from the next release.*

Table 41: General network outputs

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_LocalOccSensState	**1** = Occupied **2** = Unoccupied **3** = Unused	**3** = Unused	Multistate Value	1	Network Output to show Local Occupancy sensor state. The controller "Local Occupancy sensor state is determined by two inputs: - "Local Occupancy Sensor" - Typically a physical UI point share point from zone controller "Network Input Occupancy Sensor" - Typically a share point from zone controller
no_EffOccSensState	**1** = Occupied **2** = Unoccupied **3** = Unused	**3** = Unused	Multistate Value	2	Network Output to show Effective Occupancy sensor state
no_EffOccState	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = Null	**5** = Null	Multistate Value	20	Network Output to show Effective occupancy state.
no_ManualOverride	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = Null	**5** = Null	Multistate Value	4	Network Output to do Manual Override

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_BypassState	**0** = No Bypass **1** = Bypass	**0** = No Bypass	Binary Output	1	Network Output to show the Bypass State. The Bypass state Often referred to as after-hours mode. The controller has an override button that allows occupants to trigger a timed occupancy (bypass) mode during unoccupied hours.
no_BypassValue	0-100	Null	Analog Output	1	Network Output to show Bypass Value output. 0=No Bypass, 100=Bypass.
no_OccupancyState	**0** = Unoccupied **1** = Occupied	**0** = Unoccupied	Binary Output	3	Network Output to show the System is in occupied/ unoccupied state.
no_SmokeMode	**1** = No Override **2** = Shutdown **3** = Pressurize **4** = Depressurize	**1** = No Override	Multistate Value	5	Network Output to show current smoke mode state.
no_SystemDisable	**0** = Normal **1**= Disable	**0** = Normal	Binary Output	4	Network Output to disable the system.
no_ServiceMd	**0** = Disable **1** = Enable	**0** = Disable	Binary Output	5	Network Output to enable the Service mode
no_EffDlcShift	0 to 10 Δ°F (0 to 5.5 Δ°C)	Null	Analog Output	2	Network Output to show Effective Demand Limit Shift.

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_EffHeatSp	40 to 120 °F (4.5 to 48.5 °C)	Null	Analog Output	3	Network Output to show Effective Heating Setpoint
no_EffCoolSp	40 to 120 °F (4.5 to 48.5 °C)	Null	Analog Output	4	Network Output to show Effective Cooling Setpoint
no_EffSp	40 to 120 °F (4.5 to 48.5 °C)	Null	Analog Output	5	Network Output to show Effective Setpoint
no_EffTempMode	**1** = Cool Mode **2** = Reheat Mode **3** = Heat Mode **4** = Emergency Heat **5** = Off	**5** = Off	Multistate Value	6	Network Output to show Effective Temperature Mode
no_SetpointSts	**1** = Occupied **2** = Unoccupied **3** = Temporary **4** = Standby	**1**= Occupied	Multistate Value	7	When the setpoint is adjusted by user, no_setpointsts shifts to 'Temporary'. When the setpoint is not adjusted it will represent the current system state until next scheduled event or override time-out.
no_EffAuxHeatSetpoint	40 to 120 °F (4.5 to 48.5 °C)	Null	Analog Output	6	Network Output to show Effective auxiliary heat setpoint.
no_IsFanOnly	**0** = Normal **1**= Fan Only	**0** = Normal	Binary Output	7	Network Output to enabled/ disabled Fan Only mode.

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_DehumActive	**0** = Inactive **1** = Active	**0**= Inactive	Binary Output	8	Network Output to Active/ Inactive Dehumidificati on mode.
no_HumActive	**0** = Inactive **1** = Active	**0**= Inactive	Binary Output	9	Network Output to Active/ Inactive Humidification mode.
no_IsHeatDisable	**0** = Enable **1** = Disable	**0** = Enable	Binary Output	10	Network Output to enable/ disable the heat mode.
no_IsAuxHeatDisable	**0** = Enable **1** = Disable	**0** = Enable	Binary Output	11	Network Output to enable/ disable the auxiliary heat mode
no_IsCompHeatDisable	**0** = Enable **1** = Disable	**0** = Enable	Binary Output	12	Network Output to enable/ disable the compressor heat mode
no_ActiveHeatStages	0-3 Stages	0 Stage	Analog Output	7	Network Output to show Active heat Stages
no_ActiveAuxHeatStages	0-2 Stages	0 Stage	Analog Output	8	Network Output to show Active auxiliary heat stages
no_HeatCtrlOut	0 to 100%	0%	Analog Output	9	Network Output to show Modulating Heat Output
no_ActiveCompHeatStages	0-3 Stages	0 Stage	Analog Output	10	Network Output to show Active compressor Stages
no_DaHilimit	**0** = Normal **1** = HiLimit	**0** = Normal	Binary Output	13	Network Output to show Discharge Air High Limit output

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_CompDaHilimit	**0** = Normal **1** = HiLimit	**0** = Normal	Binary Output	14	Network Output to show Compressor Discharge Air High Limit output
no_IsCoolDisable	**0** = Enable **1** = Disable	**0** = Enable	Binary Output	15	Network Output to enabled/ disabled Cooling.
no_ActiveCoolStages	0-3 Stages	0 Stage	Analog Output	11	Network Output to show Active cool Stages
no_ReversingVlv	**0** = Close **1** = Open	**0**=Close	Binary Output	16	Network Output to close/open Reversing Valve Output.
no_CoolCtrlOut	0 % - 100 %	0 %	Analog Output	131	Modulating CoolOutput
no_CompDaLolimit	**0** = Normal **1** = LoLimit	**0** = Normal	Binary Output	17	Network Output to limit Compressor Discharge Air Low Limit output
no_EconDmprMinCmd	**0** = Disable **1** = Enable	**0** = Disable	Binary Output	18	Econ Min Command Auxiliary Output to Econ module.
no_FanStart	**0** = Off **1** = On	**0** = Off	Binary Output	19	Network Output to command Fan start
no_FanSpd	0 to 100%	0%	Analog Output	12	Network Output to control Analog Fan speed output
no_FanHiSpd	**0** = Off **1** = On	**0** = Off	Binary Output	20	Network Output to command Fan high speed
no_FanLoSpd	**0** = Off **1** = On	**0** = Off	Binary Output	21	Network Output to command Fan low speed

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_FanMedSpd	**0** = Off **1** = On	**0** = Off	Binary Output	507	Network Output to command Fan medium speed
no_DaTemp	-40 to 200 °F (2 to 93 °C)	Null	Analog Output	13	Discharge Air Temp
no_DaHumidity	0-100 %	Null	Analog Output	15	Discharge Air Humidity
no_MaTemp	-40 to 150 °F (4.5 to 65.5 °C)	Null	Analog Output	14	Mixed Air Temp
no_RaTemp	-40 to 150 °F (4.5 to 65.5 °C)	Null	Analog Output	57	Return Air Temp
no_OaTemp	-40 to 150 °F (-40 to 65.5 °C)	Null	Analog Output	16	This point is considered for Network point sharing of Outside Air Temp
no_OaHumidity	0-100 %	Null	Analog Output	17	This point is considered for Network point sharing of Outside Air Humidity
no_SpaceTemp	-40 to 140°F (-40 to 60 °C)	Null	Analog Output	18	This point is considered for Network point sharing of Space Temperature
no_SpaceHumidity	0 to 100%	Null	Analog Output	19	This point is considered for Network point sharing of Space Humidity
no_SpaceCO2	0-2000 ppm	Null	Analog Output	20	This point is considered for Network point sharing of Space CO2

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_VOCLevel	NA	Null	Analog Output	66	This point is considered for Network point sharing of Volatile Organic Compound Level
no_EconEn	**0** = Disable **1** = Enable	**0** = Disable	Binary Output	22	Network Output to disable/ enable Economizer output
no_ApplicationCommandMode	**1** = StartupWait **2** = Heat **3** = Cool **4** = Off **5** = EmgHt **6** = SmkEmg **7** = Freeze Protect **8** = Service Mode **9** = FanOnly	**4** = Off	Multistate Value	8	Gives out the current application mode
no_Fan_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	22	Outputs the actual run time of Fan.
no_HeatStg1_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	27	Outputs the actual run time of heating stage 1
no_HeatStg2_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	28	Outputs the actual run time of heating stage 2
no_HeatStg3_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	29	Outputs the actual run time of heating stage 3
no_HeatCtrl_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	30	Outputs the actual run time of heating control.
no_CoolCtrl_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	132	Outputs the actual run time of cooling control.

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_CompStg1_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	31	Outputs the actual run time of comp stage 1
no_CompStg2_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	32	Outputs the actual run time of comp stage 2
no_CompStg3_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	58	Outputs the actual run time of comp stage 3
no_CoolStg4_RunTimeAccumulate	0-270737 Hours	0 Hours	Analog Output	252	Outputs the actual run time of Conventional Cool Stage 4
no_ConvHeatTermLdOut	0 ~ -160%	0	Analog Output	59	Conventional heating terminal load output
no_AuxHeatTermLdOut	0 ~ -160%	0	Analog Output	60	Auxiliary heating terminal load output
no_CompTermLdOut	0 ~ 160%	0	Analog Output	61	Compressor terminal load output
no_TermLdOut	-200 to +200 %	0	Analog Output	85	Common terminal load output for heating and cooling demand level.
no_EffSchCurrentState	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = No Override	**5** = No Override	Multistate Value	18	Current Schedule State to Network.
no_EffSchNextState	**1** = Occupied **2** = Unoccupied **3** = Bypass **4** = Standby **5** = No Override	**5** = No Override	Multistate Value	19	Next Schedule State to Network.

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_EffTUNCOS	0-11520 Mins	0 Mins	Analog Output	62	TUNCOS is the difference between the future change in event & current event in minutes to the network.
no_BypassRemTime	1080 – 0 Mins	1080 Mins	Analog Output	65	This point gives out the exact remaining time for the bypass to reset once the system is in override condition.
no_CtrlSpaceTemp	-40 to 140°F (-40 to 60 °C)	Null	Analog Output	67	Control Space Temperature output (Only for testing purpose).
no_RecoveryStatus	**0** = Normal **1** = Recovery	**0** = Normal	Binary Output	82	This point gives out when the system is in recovery mode.
no_ModEconEn	**0** = Enabled **1** = Disabled	Nan	Binary Output	83	This point gives the status of modulating economizer. (Display purpose only do not consider for calculation)
no_ModEconValue	0~100	Null	Analog Output	68	Mod Econ Value output. 0 = Econ disabled, 100 = Econ enabled. (Display purpose only do not consider for calculation)

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_DCVEn	**0** = Enabled **1** = Disabled	Null	Binary Output	84	This point gives the status of demand control ventilation logic. (Display purpose only do not consider for calculation)
no_DCVValue	0~100	Null	Analog Output	69	DCV Value output. 0=DCV disabled, 100= DCV enabled
no_MaLoLimActive	**0** = Inactive **1**= Active	**0** = Inactive	Binary Output	85	Status of mixed air low limit control logic
no_IsFreeCoolAvailable	**0** = Not Available **1** = Available	**0** = Not Available	Binary Output	86	This point gives the status whether free cooling is available or not.
no_IsEconomizing	**0** = False **1** = True	**0** = False	Binary Output	87	This point gives the status whether the control loop is economizing.
no_OaDmprPos	0~100%	Null	Analog Output	70	This point gives out the outside air damper position based on the control logic
no_CompCurSens	0~100 Amps	Null	Analog Output	71	This point gives out the Comp Current Sensor value from the terminal input.
no_FanCurSens	0~100 Amps	Null	Analog Output	72	This point gives out the Fan Current Sensor value from the terminal input.

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_CompDATemp	-22 to 230 °F (-30 to 110 °C)	Null	Analog Output	73	This point gives out the Comp DA Temperature value from the terminal input.
no_OccupancySensor	**1** = Occupied **0** = Unoccupied	Null	Binary Output	94	This point is considered for Network point sharing of Occupancy sensor status of terminal
no_ShutdownState	**0** = NoOvrd **1** = Shutdown	Null	Binary Output	95	This point is considered for Network point sharing of shutdown state of terminal
no_WSHPEnableState	**0** = Disable **1** = Enable	Null	Binary Output	96	This point is considered for Network point sharing of water source heat pump state through Waterflow status
no_WSHPEnableValue	0 to 100	Null	Analog Output	97	This point is considered for Network point sharing of water source heat pump state through Waterflow status
no_PurgeState	**0** = Disable **1** = Enable	Null	Binary Output	98	This point gives current state of Purge Function
no_EffLocalSch	**0** = Occupied **1** = Unoccupied **3** = Standby	Null	Analog Output	77	This point is used to display the local schedule current state

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_mstpHeaderCrcError	-9999 to 9999		Analog Output	78	Display mstp header crc error from firmware
no_mstpDataCrcErr	-9999 to 9999		Analog Output	79	Display mstp data crc error from firmware
no_Sylk11Pos	0% to 100%	0%	Analog Output	81	This point gives the position feedback from actuator 0-100%
no_Sylk11Cycles	N/A	Null	Analog Output	82	This point shows that how many times the actuator Is cycled from open to close.
no_Sylk11Status	**0** = OK **1** = Faulty	**0** = OK	Binary Output	117	Sylk status displays 0=OK (No Error), and 1=Fault, when the actuator status displays 2-OverV,3-UnderV,4-Stall,5-UnderV&Stall,6-OverV& Stall
no_Sylk11Overriden	**0** = False **1** = Overiride	**0** = False	Binary Output	118	It provided the Overriden status when the actuator is overridden externally. Turn On 6 when the POT is in Test mode, i.e.6. (Display purpose only do not consider for calculation)

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_Sylk11PowerReport	0 to 100%	0%	Analog Output	84	It calculates the last commanded move. (Display purpose only do not consider for calculation)
no_DeltaTConv/Aux/ ModHtStg1Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	126	Display the network Point to display the Delta T Alarm Enumeration
no_DeltaTConv/Aux/ ModHtStg2Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	127	Display the network Point to display the Delta T Alarm Enumeration
no_DeltaTConv/Aux/ ModHtStg3Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	128	Display the network Point to display the Delta T Alarm Enumeration
no_DeltaTCompHt/Cl/ ConvClStg1Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	129	Display the network Point to display the Delta T Alarm Enumeration

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_DeltaTCompHt/Cl/ ConvClStg2Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	130	Display the network Point to display the Delta T Alarm Enumeration
no_DeltaTCompHt/Cl/ ConvClStg3Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	131	Display the network Point to display the Delta T Alarm Enumeration
no_DeltaTCompHt/Cl/ ConvClStg4Alarm	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	213	Display the network Point to display the Delta T Alarm Enumeration
no_DeltaTModClAlarm(Fut)	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	132	Display the network Point to display the Delta T Alarm Enumeration (Future)
no_DeltaTValue	0 to 300 °F (-18 to 148.5 °C)	0 °F (-18 °C)	Analog Output	130	The actual DeltaT value measured by real time (MAT-DAT)

Table 41: General network outputs (Continued)

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_DeltaT AlarmStatus	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly **5** = SensorNotAvail, **6** = DisableByEqAvail/ HMIConfigServ **7** = DisableByMAOALimits	**1** = Green	Multistate Output	134	The actual DeltaT Alarm Status shown in HMI, Supervisor, mobile app.
no_GenericAlarm	**1** = True **0** = False	**0** = False	Binary Output	102	Display user a high-level view about if there is any alarm active on the device
no_DRStatus	**1** = Inactive **2** =Active	**1** = Inactive	Multistate Output	247	Display user a Network output indicating whether device is in Demand Response mode
no_ModEconStatus	**1** = Inactive **2** = Active **3** = OATUnAvail **4** = OAHUnAvail **5** = RATUnAvail **6** = RAHUnAvail **7** = MATUnAvail	**1** = Inactive	Multistate Output	185	Display the network Point to display the internal Economizer Status.
no_PckEconFault	**1** = Faulty **0** = Ok	**0** = Ok	Binary Output	128	Display the network Point to display the External Economizer Point
no_Sylk11CalibrStatus	**1**=UnCalibrated **2**=CalibrIsInProgress **3**=Calibrated	**1** = UnCalibrated	Multistate Output	112	Display the network Point to display Sylk Actuator calibration Status
no_Sylk11CalibrMax	0-100%	0%	Analog Output	87	Displays the Actuator MaxPosition after Calibration (0-100%)

Table 41: General network outputs **(Continued)**

Note: All points are read-only.					
Name	**Range**	**Default Value**	**BACnet Point Type**	**BACnet Object Instance ID**	**Description**
no_Sylk11CalibrMin	0-100%	0%	Analog Output	88	Displays the Actuator MinPosition after Calibration (0-100%)
no_GenericAlarm	**1** = True **0** = False		Binary Output	102	Display user a high-level view about if there is any alarm active on the device
no_ExhaustFan1Status	**0** = Off **1** = On	**0** = Off	Binary Output	501	Display the network Point to display the Exhaust Fan1 Command
no_ExhaustFan2Status	**0** = Off **1** = On	**0** = Off	Binary Output	502	Display the network Point to display the Exhaust Fan2 Command
no_HWValveStatus	**0** = Off **1** = On	**0** = Off	Binary Output	505	Display the network Point to display the FCU HW On/ Off Valve Status
no_CWValveStatus	**0** = Off **1** = On	**0** = Off	Binary Output	506	Display the network Point to display the FCU CW On/Off Valve Status
no_EffDATSp	40 to 150 °F (4.5 to 65.5 °C)	Null	Analog Output	253	Effective Discharge Air Temperature Setpoint.
no_HeatOATLockout	**1** = None **2** = HeatLockout **3** = CompressorLockout **4**= AuxiliaryHeatLockout	**1** = None	Multistate Output	216	Outdoor air temperature heat lockout status.
no_CoolOATLockout	Inactive = **0** Active = **1**	Inactive = **0**	Binary Output	508	Outdoor air temperature cool lockout status.

CHAPTER

8 BACNET OBJECTS FOR ALARMS

Topics covered

BACnet object used for alarm

BACnet object used for alarm

Table 42: BACnet object used for alarm

Note: All points are read-only.				
Key	**BACnet Point Type**	**BACnet Object Instance ID**	**Priority**	**Description**
AlarmPriority_SupplyFan	Binary Output	64	**0** = Nml **1** = High Priority	Supply Fan Status Mismatch Alarm & Priority
AlarmPriority_SpaceFreezeProtect	Binary Output	65	**0** = Nml **1** = High Priority	Space temperature freeze protection alarm & Priority
AlarmPriority_WaterFlwPrf	Binary Output	66	**0** = Nml **1** = High Priority	Proof of water flow alarm & Priority
Alarm_UI_SpcTemp	Analog Input	12	Actual Alarm point is AlarmPriority_TempSens	UI Space Temperature fault detection point
AlarmPriority_TempSens	Multistate Value	13	**1** = Nml **2** = Med Priority **3** = High Priority	Internal Temperature Sensor Priority. **High Priority**: 1. Only local sensor configured & even if any one of the on-board temperature sensor is in alarm 2. Only Remote sensor configured & TR40 sensor connected to sylk addr 2 is giving null value. 3. Configured as multi sensor & both the remote sensor & on-board configured sensor has failed. **Medium priority**: 1. Configured as Multi sensor & only the on-board sensor has failed. but getting reliable value from the sylk sensors. 2. Configured as multi sensor & only one of the sylk sensor has failed with values available from other sylk sensors (If configured) or on-board sensor. When a valid network temperature is available, then the high priority alarms will be considered as medium priority alarm.
Alarm_InternalHumSens	Analog Input	2	Actual Alarm point is AlarmPriority_HumSens	Internal Humidity Sensor input.

Table 42: BACnet object used for alarm (Continued)

Note: All points are read-only.				
Key	**BACnet Point Type**	**BACnet Object Instance ID**	**Priority**	**Description**
AlarmPriority_HumSens	Multistate Value	14	**1** = Nml **2** = Med Priority **3** = High Priority	Internal Humidity Sensor Priority. **High Priority**: 1. Only local sensor configured & on-board humidity sensor is in alarm 2. Only Remote sensor configured & TR40 sensor connected to sylk addr 2 is giving null value. 3. Configured as multi sensor & both the remote sensor & on-board configured sensor has failed. **Medium priority**: 1. Configured as Multi sensor & only the on-board sensor has failed. but getting reliable value from the sylk sensors. 2. Configured as multi sensor & only the sylk sensor has failed with values available from on-board sensor. When a valid network humidity is available, then the high priority alarms will be considered as medium priority alarm.
AlarmPriority_SpcTempHI_Lolimit	Binary Output	68	**0** = Nml **1** = Med Priority	Space Air Temperature High/ low Limit Alarm
AlarmPriority_Co2lvlHighlimit	Binary Output	100	**0** = Nml **1** = Med Priority (CO2 Threshold Limit Exceeded)	CO2 Level High limit exceed Alarm
Alarm_StPtOutOfRangeAlm	Binary Output	63	No Priority assigned	Setpoint Configurations Out of Range Alarm
Alarm_UI_OccSens	Binary Input	3	Actual Alarm point is AlarmPriority_OccSensFault	Occupancy Sensor Physical Input
AlarmPriority_OccSensFault	Binary Output	69	**0** = Nml **1** = Med Priority	Occupancy Sensor Alarm Priority
Alarm_UI_DirtyFilter	Binary Input	4	Actual Alarm point is AlarmPriority_ DirtyFiltFault	Dirty Filter Physical Input
AlarmPriority_DirtyFiltFault	Binary Output	70	**0** = Nml **1** = Med Priority	Dirty Filter Physical Input Alarm Priority
Alarm_UI_AirFlwSts	Binary Input	5	Actual Alarm point is AlarmPriority_AirFlwFault	Air Flow Status Physical Input
AlarmPriority_AirFlwFault	Binary Output	71	**0** = Nml **1** = Med Priority	Air Flow Status Physical Input Alarm Priority

Table 42: BACnet object used for alarm **(Continued)**

Note: All points are read-only.				
Key	**BACnet Point Type**	**BACnet Object Instance ID**	**Priority**	**Description**
Alarm_UI_Shutdown	Binary Input	6	Actual Alarm point is AlarmPriority_ShutdownFault	Shutdown Physical Input
AlarmPriority_ShutdownFault	Binary Output	72	**0** = Nml **1** = Med Priority	Shutdown Physical Input Alarm Priority
Alarm_UI_MATemp	Analog Input	4	Actual Alarm point is AlarmPriority_MATempAlarm_Fault	MA Temperature Physical Input
AlarmPriority_MATempAlarm_Fault	Multistate Output	9	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	MA Temperature Physical Input Alarm Priority
Alarm_UI_OATemp	Analog Input	5	Actual Alarm point is AlarmPriority_OATempAlarm_Fault	OA Temperature Physical Input Alarm
AlarmPriority_OATempAlarm_Fault	Multistate Output	10	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	OA Temperature Physical Input Alarm Priority
Alarm_UI_DATemp	Analog Input	6	Actual Alarm point is AlarmPriority_DATempAlarm_Fault	Discharge Air Temperature Physical Input
AlarmPriority_DATempAlarm_Fault	Multistate Output	11	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	Discharge Air Temperature Physical Input Alarm Priority
Alarm_UI_RATemp	Analog Input	18	Actual Alarm point is AlarmPriority_RATempAlarm_Fault	Return Air Temperature Physical Input
AlarmPriority_RATempAlarm_Fault	Multistate Output	110	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	Return Air Temperature Physical Input Alarm Priority
Alarm_UI_CO2Lvl	Analog Input	7	Actual Alarm point is AlarmPriority_CO2LvlAlarm_Fault	CO2 Level Physical Input
AlarmPriority_CO2LvlAlarm_Fault	Multistate Value	12	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	CO2 Level Physical Input Alarm Priority

Table 42: BACnet object used for alarm **(Continued)**

Note: All points are read-only.				
Key	**BACnet Point Type**	**BACnet Object Instance ID**	**Priority**	**Description**
Alarm_UI_WtrFlwSts	Binary Input	7	Actual Alarm point is AlarmPriority_WtrFlwFault	Water Flow Status Physical Input
AlarmPriority_WtrFlwFault	Binary Output	73	**0** = Nml **1** = Med Priority	Water Flow Status Physical Input Alarm Priority
Alarm_UI_CompDASens	Analog Input	14	Actual Alarm point is AlarmPriority_DATempAlarm_Fault	Comp Discharge Air Temperature Physical Input
AlarmPriority_CompDAAlarm_Fault	Multistate Value	22	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	Comp Discharge Air Temperature Physical Input Alarm Priority
AlarmPriority_DirtyFilter	Binary Output	88	**0** = Nml **1** = High Priority	Dirty Filter Alarm
Alarm_SylkCommFail	Multistate Output	24	**1** = Normal **2** = SylkAddr2Fail **3** = SylkAddr3Fail **4** = SylkAddr4Fail **5** = SylkAddr5Fail **6** = SylkAddr6Fail **7** = SylkAddr7Fail (Fut) **8** = SylkAddr8Fail **9** = SylkAddr9Fail **10** = SylkAddr01Fail **11** = SylkAddr11Fail **12** = SylkAddr12Fail **13** = ManySylkFail	Sylk Communication Failure Alarm. If more than 1 sylk sensor has failed then 'ManySylkFail' alarm would be generated & installer has to check the BACnet points related to all sylk sensor to understand which sensor has failed. **7** = SylkAddr7Fail for future reference.
Alarm_UI_HeatPumpFreq	Analog Input	15	Actual Alarm point is AlarmPriority_HeatPumpFreqlFault	Heat pump fault input.
AlarmPriority_HeatPumpFreqFault	Multistate Output	23	**1** = Nml **2** = Med Priority (Out of Range) **3** = High Priority (Sensor Failure)	HeatPumpFreq Physical Input Alarm Priority
AlarmPriority_HeatPumpFail	Binary Output	91	**0** = Nml **1** = High Priority	Heatpump failure alarm
AlarmPriority_UnknownTime	Binary Output	92	**0** = Nml **1** = High Priority	Unknown Time alarm from Firmware.
AlarmPriority_ProximitySensAlarm	Binary Output	93	**0** = Nml **1** = High Priority	Internal proximity sensor alarm from Firmware.
AlarmPriority_PckEcon_Fault	Binary Output	99	**0** = Nml **1** = High Priority	Packaged economizer fault Input alarm

Table 42: BACnet object used for alarm **(Continued)**

Note: All points are read-only.				
Key	**BACnet Point Type**	**BACnet Object Instance ID**	**Priority**	**Description**
AlarmPriority_WindowOpen	Binary Output	101	**0** = Nml **1** = High Priority	Alarm occurs when the window is Open
AlarmPriority_ShutdownFault	Binary Output	72	**0** = Nml **1** = High Priority	Alarm occurs when the shutdown alarm occurs
AlarmPriority_Econ_FDD_NEWIS	Binary Output	121	**0** = Nml **1** = High Priority	Alarm occurs when Economizer not economizing when it should (NEWIS)
AlarmPriority_Econ_FDD_EWISN	Binary Output	123	**0** = Nml **1** = High Priority	Alarm occurs when Economizer economizing when it should not (EWIS) (NEWIS)
AlarmPriority_Econ_FDD_DNM	Binary Output	122	**0** = Nml **1** = High Priority	Alarm occurs when Economizer damper not modulating
AlarmPriority_Econ_FDD_EOA	Binary Output	124	**0** = Nml **1** = High Priority	Alarm occurs when Economizer bring in excess outdoor air
AlarmPriority_EconomizerFailure	Binary Output	125	**0** = Nml **1** = High Priority	Alarm occurs when Economizing is not detected/ Economizing is observed unexpectedly/Damper not modulating now/Excess outdoor air observed. (Old point retained only for backward compatibility) This PVID is assigned to new point) (AlarmPriority_IntEconomizerFailure)
AlarmPriority_Sylk11ActuatorFail	Binary Output	109	**0** = Nml **1** = High Priority	Alarm occurs when during actuator fails Sylk Actuator Failure Alarms during 2=Under Voltage, 3-Over Voltage,4-Stall,5- Over Voltage&Stall, 6-Under Voltage & Stall
AlarmPriority_CoilFreezeProtAlm	Binary Output	126	**0** = Nml **1** = High Priority	Alarm occurs when MAT is below that low limit setpoint of (default 45F,range: 35F~65F).Freeze Protection occurred, Outdoor air damper will fully close/minimum position based on the Freeze Protection Position settings.

Table 42: BACnet object used for alarm **(Continued)**

Note: All points are read-only.				
Key	**BACnet Point Type**	**BACnet Object Instance ID**	**Priority**	**Description**
AlarmPriority_DeltaT AlarmStatus	Multistate Output	133	**1** = Green **2** = Orange **3** = Red **4** = DisablebyCtrlValue/ MinDly, **5** = SensorNotAvail **6** = DisableByEqAvail// HMIConfigServ **7** = DisableByMA/ OALimits	Delta T Alarm Status Priority 1-Normal,2-Medium,3-High. Ignore 4 to 7 while configuring in (Samba mobile app)
AlarmPriority_IntEconomizer Failure	Multistate Output	187	**1** = Normal **2** = DamperStuckOpen **3** = DamperStuckAtMin **4** = BadOrUnpluggedActuator **5** = ActuatorMechanicallyDisconnected	Alarm Occurs when the internal Economizer damper is Stuck Open, Stuck at Minimum, Bad or Unplugged Actuator, Mechanically Disconnected (FDD Enhancement) 1=Normal, 2=DamperStuckOpen, 3=DamperStuckAtMin , 4=BadOrUnpluggedActuator, 5=ActuatorMechanicallyDisconnected 1-Normal, 2-5 High Consider 2-5 values only while configuring in (Samba mobile app).

CHAPTER

9 DISPLAY POINTS

Topics covered

Display points

Calendar

Schedule

Display points

Table 43 Display points

Key	BACnet Point Type	Access	BACnet Object Instance ID	Priority	Description
OaTemp_Display	Analog Output	Read Only	75	NA	Displays outdoor air temperature from Local sensor, if local sensor is not valid it displays value from Internet (Display purpose only do not consider for calculation)
OaHum_Display	Analog Output	Read Only	76	NA	Displays outdoor Humidity from Local sensor, if local sensor is not it displays value from Internet (Display purpose only do not consider for calculation)

Calendar

Table 44 Calendar

Name	BACnet Object Instance	Description
Calendar1	3	Referred to Enum Schedule
Calendar2	4	
Calendar3	5	
Calendar4	6	
Calendar5	7	
Calendar6	8	
Calendar7	9	
Calendar8	10	
Calendar9	11	
Calendar10	12	

Schedule

Table 45 Schedule

Name	BACnet Object Instance	Description
EnumSchedule	2	Enum Main Schedule. Mon-Friday (6A.M TO 6P.M) 0-Occupied, 1-UnOccupied,3-StandBy, 255-Null

Table 45 Schedule

Name	BACnet Object Instance	Description
PurgeSchedule	3	Purge Schedule. 0-PurgeOff, 1-PurgeOn. Default is Purge Off for all 5 days.

CHAPTER

10 BACNET GUIDELINES FOR TC500A

Topics covered

Situational BACnet guidelines for TC500A

TC500A proprietary properties list

List of all BACnet objects

Situational BACnet guidelines for TC500A

Table 46: BACnet guidelines for TC500A

Feature	Limitation / Behavior	Description	Workaround
Schedule / Holiday	Calendar object is not supported	Current implementation of thermostat does not support calendar object and If user wants to configure holiday list for a schedule apart from special events then HMI is the option to configure holiday schedule.	HMI is the option to configure holiday schedule.
Schedule	Schedule does not work properly if effective period and default output is written from Niagara	The schedule default output is set to Unoccupied mode. User should not change this property over BACnet. The schedule effective period is enabled always. User should not change this property over BACnet.	Makes sure default output and effective period set as true in Skip writes facets
Schedule	Modes supported by thermostat are 0, 1 and 3	Modes and corresponding Enum values are 0 -Occupied; 1-Unouucpied; 3-Standby.	NA
Schedule	Niagara allows all types of date range while creating special events which is not supported by thermostat	Thermostat does not support floating date type special events. If user try to write special events with unsupported date range format, then schedule read operation does not work until deleting the unsupported date range special events from Niagara database.	NA
Schedule	Special / Holiday events are supported for the 3 years duration.	Special / Holiday can create more than 3 years in Niagara, but thermostat supports only for 3-year duration	NA
Device Object	Unsupported object and service is claimed in the device object capabilities	The device capabilities list shows many of the unsupported object and services, it will not impact any functionality issues and will be hidden future release.	NA
Alarm	Unsupported Intrinsic Alarm Property is being exposed in the objects	Intrinsic alarms are not supported by global thermostat, but the corresponding properties are exposed in BACnet object. user should not configure those properties and this will be hidden in future release and the point alarms must be configured using Niagara alarm extension	NA
COV	COV not supported	Thermostat does not support COV way of notifying values to the supervisor but the COV increment properties are exposed in the objects. user should not configure this property and this will be hidden in future release.	NA
DAY LIGHT SAVING	Unable to read/write Daylight savings from Niagara to GT	Unable to read/write Daylight savings from Niagara to GT	Set the daylight saving from Thermostat HMI

Table 46: BACnet guidelines for TC500A (Continued)

Feature	Limitation / Behavior	Description	Workaround
PICS statement	Reference input and output is claimed in the PIC statement, but the corresponding objects is not there in thermostat	NA	NA
Output Object Read / Write	Priority array values are not synchronized with actual for AO, MSO, & BO in Niagara	NA	NA
Output Object Read / Write	Set operation on AO, BO & MSO is writing values to the priority-16 instead of relinquish default	NA	NA
Output Object Read / Write	If user configure binary input or output in UIO terminal and the corresponding values has to be refereed in analog input or output object instead of binary input or output in Niagara	NA	NA
FIRMWARE	Thermostat firmware & application download does not support by Niagara (start restore and end restore service is missing)	NA	3rd party tool like YABE can be used for firmware download

Note: *The UTC_Offset is a standard property of the device object and indicates the number of minutes (-780 to +780) offset between local standard time and Coordinated Universal Time (UTC). Time zones to the west of the zero-degree meridian have positive values, while those to the east have negative values. The value of the UTC_Offset property is subtracted from the UTC received in UTCTimeSynchronization service requests to calculate the correct local standard time.*

TC500A proprietary properties list

Table 47: TC500A proprietary properties list

Property ID	Description	Value Type	Definition
1028	MSTP auto mac address minimal value	Number	
1029	MSTP auto mac address maximum value	Number	
1030	MSTP auto mac disable	Boolean	
1203	WiFi IPv4 address	Char [4]	
1204	WiFi IPv4 subnet mask	Char [4]	
1205	WiFi default gateway	Char [4]	
1206	WiFi DHCP enable	Boolean	

1231	Network physical layer	Enum	{
			Standalone = 0,
			WiFi = 1,
			MSTP = 2,
			WiFi_MSTP =3
			}

1232	BACnet/IP UDP port	Number	
1233	BACnet /IP network number	Number	
1237	Temp. Unit	Enum	{F = 0, C = 1}

1238	Language	Enum	{
			English = 0,
			French = 1,
			Spanish = 2,
			}

1239	Country code	String	
1240	GUI brightness	Number	

1241	User Persona	Number	{
			uint8_t installer: 1,
			uint8_t admin: 1,
			uint8_t basic: 1,
			uint8_t visitor: 1
			}

1243	Password of advanced user	String	
1244	Password of basic user	String	
1246	Contractor name	String	
1247	Contractor telephone number	String	
1248	Contractor mail address	String	
1249	Device configured	Boolean	
1250	Display options	Number	
1251	Proximity sensor configured	Boolean	

Table 47: TC500A proprietary properties list (Continued)

Property ID	Description	Value Type	Definition

1252	Time format	Enum	{
			12HOUR = 0,
			24HOUR = 1
			}

1253	Basic user permission	Number	
1254	Admin user permission	Number	

1255	Visitor view type	Enum	{
			Lock_Screen = 0,
			Simplified = 1
			}

1256	Basic user view type	Enum	{
			Standard = 0,
			Simplified = 1
			}

1257	Visitor permission	Number	

1258	WiFi network type	Enum	{
			Cloud = 0,
			Honeywell_Gateway = 1,
			BACnetIP = 2
			}

1259	BACnet security type	Enum	{
			Open = 0,
			Secured= 1
			}

1260	Connection status	Enum	{
			Not_Configured = 0,
			Router_Connected =1,
			Cloud_Connected =2,
			Gateway_Connected =3
			Connection_Lost =4
			}

1261	WiFi MAC address	Char [8]	
1262	WiFi RSSI	Number	

List of all BACnet objects

Alarm_OnBoardHumSens	ni_DCVValue
Alarm_StPtOutOfRangeAlm	ni_DemandLimitControlEn
Alarm_SylkCommFail	ni_DeviceLock
Alarm_UI_AirFlwSts	ni_EconEn
Alarm_UI_CO2Lvl	ni_EconValue
Alarm_UI_CompDASens	ni_EmergencyHVACOverride
Alarm_UI_DATemp	ni_mstpClearErr
Alarm_UI_DirtyFilter	ni_NetSchCurrentState
Alarm_UI_HeatPumpFreq	ni_NetSchNextState
Alarm_UI_MATemp	ni_NetTUNCOS
Alarm_UI_OATemp	ni_OccManCom
Alarm_UI_OccSens	ni_OccupancySensor
Alarm_UI_Shutdown	ni_OccupancySensorState
Alarm_UI_SpcTemp	ni_OutdoorHum
Alarm_UI_WtrFlwSts	ni_OutdoorTemp
AlarmPriority_AirFlwFault	ni_Reminder10CalendarDays
AlarmPriority_CO2LvlAlarm_Fault	ni_Reminder10En
AlarmPriority_Co2lvlHighlimit	ni_Reminder10RemindLater
AlarmPriority_CompDAAlarm_Fault	ni_Reminder10RemindLaterCalendarDays
AlarmPriority_DATempAlarm_Fault	ni_Reminder10RemindLaterRuntimeHrs
AlarmPriority_DirtyFilter	ni_Reminder10Reset
AlarmPriority_DirtyFiltFault	ni_Reminder10RunTimeHrs
AlarmPriority_HeatPumpFail	ni_Reminder10Sel
AlarmPriority_HeatPumpFreqFault	ni_Reminder1CalendarDays
AlarmPriority_HumSens	ni_Reminder1En
AlarmPriority_MATempAlarm_Fault	ni_Reminder1RemindLater
AlarmPriority_OATempAlarm_Fault	ni_Reminder1RemindLaterCalendarDays
AlarmPriority_OccSensFault	ni_Reminder1RemindLaterRuntimeHrs
AlarmPriority_PckEcon_Fault	ni_Reminder1Reset
AlarmPriority_ProximitySensAlarm	ni_Reminder1RunTimeHrs
AlarmPriority_ShutdownFault	ni_Reminder1Sel
AlarmPriority_SpaceFreezeProtect	ni_Reminder2CalendarDays
AlarmPriority_SpcTempHl_Lolimit	ni_Reminder2En
AlarmPriority_SupplyFan	ni_Reminder2RemindLater
AlarmPriority_TempSens	ni_Reminder2RemindLaterCalendarDays
AlarmPriority_UnknownTime	ni_Reminder2RemindLaterRuntimeHrs
AlarmPriority_WaterFlwPrf	ni_Reminder2Reset

AlarmPriority_WindowOpen	ni_Reminder2RunTimeHrs
AlarmPriority_WtrFlwFault	ni_Reminder2Sel
Cfg_AirFlwStsChar	ni_Reminder3CalendarDays
Cfg_Alarm_SupplyFanAlarmConfig	ni_Reminder3En
Cfg_Alarm_WaterFlowAlarmConfig	ni_Reminder3RemindLater
Cfg_CO2Alarm_LvlHighLim	ni_Reminder3RemindLaterCalendarDays
Cfg_CompCurSensMaxAmps	ni_Reminder3RemindLaterRuntimeHrs
Cfg_Control_MainSensor	ni_Reminder3Reset
Cfg_Control_PowerupDelay	ni_Reminder3RunTimeHrs
Cfg_Control_SmokeMode	ni_Reminder3Sel
Cfg_Cool_CoolLockoutSp	ni_Reminder4CalendarDays
Cfg_Cool_CoolType	ni_Reminder4En
Cfg_Cool_CPH	ni_Reminder4RemindLater
Cfg_Cool_DischLoLimSp	ni_Reminder4RemindLaterCalendarDays
Cfg_Cool_Dt	ni_Reminder4RemindLaterRuntimeHrs
Cfg_Cool_It	ni_Reminder4Reset
Cfg_Cool_MinOffTime	ni_Reminder4RunTimeHrs
Cfg_Cool_MinOnTime	ni_Reminder4Sel
Cfg_Cool_Tr	ni_Reminder5CalendarDays
Cfg_DASensChar	ni_Reminder5En
Cfg_DCV_CO2Deadband	ni_Reminder5RemindLater
Cfg_DCV_CO2SetPt	ni_Reminder5RemindLaterCalendarDays
Cfg_DCV_CtrlEn	ni_Reminder5RemindLaterRuntimeHrs
Cfg_DCV_VentMaxPos	ni_Reminder5Reset
Cfg_DCV_VentMaxPosLow	ni_Reminder5RunTimeHrs
Cfg_DCV_VentMinPos	ni_Reminder5Sel
Cfg_DCV_VentMinPosLow	ni_Reminder6CalendarDays
Cfg_Dehum_MinOnDelay	ni_Reminder6En
Cfg_Dehum_MinOnTime	ni_Reminder6RemindLater
Cfg_Dehum_MinOnTimeOpEn	ni_Reminder6RemindLaterCalendarDays
Cfg_Dehum_SpaceRHHighLimit	ni_Reminder6RemindLaterRuntimeHrs
Cfg_Dehum_StageReHeatOpEn	ni_Reminder6Reset
Cfg_DemandLimCtl_TempDiffSp	ni_Reminder6RunTimeHrs
Cfg_DirtyFilterChar	ni_Reminder6Sel
Cfg_DO1	ni_Reminder7CalendarDays
Cfg_DO2	ni_Reminder7En
Cfg_DO3	ni_Reminder7RemindLater
Cfg_DO4	ni_Reminder7RemindLaterCalendarDays
Cfg_DO5	ni_Reminder7RemindLaterRuntimeHrs

Cfg_DO6	ni_Reminder7Reset
Cfg_DO7	ni_Reminder7RunTimeHrs
Cfg_DO8	ni_Reminder7Sel
Cfg_Econ_DiffEnth	ni_Reminder8CalendarDays
Cfg_Econ_DiffTemp	ni_Reminder8En
Cfg_Econ_EconomizerType	ni_Reminder8RemindLater
Cfg_Econ_HiLimitOpt	ni_Reminder8RemindLaterCalendarDays
Cfg_Econ_MaLoTempSetPt	ni_Reminder8RemindLaterRuntimeHrs
Cfg_Econ_MaTempDeadband	ni_Reminder8Reset
Cfg_Econ_MaTempLoLimDeadband	ni_Reminder8RunTimeHrs
Cfg_Econ_MaTempSetPt	ni_Reminder8Sel
Cfg_Econ_MaTempTr	ni_Reminder9CalendarDays
Cfg_Econ_OAEnthHiLimit	ni_Reminder9En
Cfg_Econ_OAHiLimit	ni_Reminder9RemindLater
Cfg_Equip_EquipType	ni_Reminder9RemindLaterCalendarDays
Cfg_Equip_HeatType	ni_Reminder9RemindLaterRuntimeHrs
Cfg_FanCirculate_FanOnTimePercent	ni_Reminder9Reset
Cfg_FanCurSensMaxAmps	ni_Reminder9RunTimeHrs
Cfg_FanMaxSpeed_ModHeat	ni_Reminder9Sel
Cfg_FanMinpeed_ModHeat	ni_RunTimeReset
Cfg_FanMode	ni_ServiceCompStage1
Cfg_FanMode1	ni_ServiceCompStage2
Cfg_FanOnHeat	ni_ServiceCompStage3
Cfg_FanRunOnCoolDelay	ni_ServiceEconomizerCmd
Cfg_FanRunOnHeatDelay	ni_ServiceFan
Cfg_FanSpeed_CoolSingle	ni_ServiceFanSpeed
Cfg_FanSpeed_CoolMulti	ni_ServiceHeatCtrl
Cfg_FanSpeed_DefaultMode	ni_ServiceHeatStage1
Cfg_FanSpeed_HeatSingle	ni_ServiceHeatStage2
Cfg_FanSpeed_HeatMulti	ni_ServiceHeatStage3
Cfg_FanSpeed_PurgeMode	ni_ServiceModeEn
Cfg_FanSpeed_Speed1	ni_ServiceOaDmprCtrl
Cfg_FanSpeed_Speed2	ni_ServiceOccStatusCmd
Cfg_FanSpeed_Speed3	ni_ServiceRevVlvCmd
Cfg_FanSpeed_Speed4	ni_ServiceSimpleDehCmd
Cfg_FanSpeed_Speed5	ni_ServiceSimpleHumCmd
Cfg_FanSpeed_Speed6	ni_ShutdownState
Cfg_FanSpeed_VentMode	ni_SmokeMonitorstate
Cfg_FanType	ni_SpaceCO2

Cfg_Filt_HiLimit	ni_SpaceRH
Cfg_FiltPresChar	ni_SpaceTemp
Cfg_Heat_CPH	ni_SylkAddr10Hum
Cfg_Heat_DischHiLimSp	ni_SylkAddr10Temp
Cfg_Heat_Dt	ni_SylkAddr11Temp
Cfg_Heat_FuelType	ni_SylkAddr2CO2
Cfg_Heat_HeatLockoutSp	ni_SylkAddr2Hum
Cfg_Heat_HeatType	ni_SylkAddr2Temp
Cfg_Heat_It	ni_SylkAddr3Temp
Cfg_Heat_MinOffTime	ni_SylkAddr4Temp
Cfg_Heat_MinOnTime	ni_SylkAddr5Temp
Cfg_Heat_ModHtMinOutSp	ni_SylkAddr6Hum
Cfg_Heat_Tr	ni_SylkAddr6Temp
Cfg_HeatPmp_AuxHeatDroop	ni_SylkAddr9Hum
Cfg_HeatPmp_AuxHeatLockoutSp	ni_SylkAddr9Temp
Cfg_HeatPmp_AuxHeatRampFactor	ni_UI1
Cfg_HeatPmp_CngOvrRelayType	ni_UI2
Cfg_HeatPmp_ComfortMode	ni_UIO1
Cfg_HeatPmp_CompLockoutSp	ni_UIO2
Cfg_HeatPmp_UpStgTmr	ni_VOC_Level
Cfg_Hum_MinOnDelay	ni_WSHPEnableState
Cfg_Hum_SpaceRHLowLimit	ni_WSHPEnableValue
Cfg_LocalSensCalOffset_Hum	no_ActiveAuxHeatStages
Cfg_LocalSensCalOffset_Temp	no_ActiveCompHeatStages
Cfg_MASensChar	no_ActiveCoolStages
Cfg_Mod_StgHt1En	no_ActiveHeatStages
Cfg_NetOAHumFailDetDly	no_ApplicationCommandMode
Cfg_NetOAHumFailDetEn	no_AuxHeatTermLdOut
Cfg_NetOAHumFailFalbck	no_BypassRemTime
Cfg_NetOAHumFailFxdVal	no_BypassState
Cfg_NetOATFailDetDly	no_BypassValue
Cfg_NetOATFailDetEn	no_CompCurSens
Cfg_NetOATFailFalbck	no_CompDaHilimit
Cfg_NetOATFailFxdVal	no_CompDaLolimit
Cfg_NetOccSenFailDetDly	no_CompDATemp
Cfg_NetOccSenFailDetEn	no_CompStg1_RunTimeAccumulate
Cfg_NetOccSenFailFalbck	no_CompStg2_RunTimeAccumulate
Cfg_NetOccSenFailFxdVal	no_CompStg3_RunTimeAccumulate
Cfg_NetShtdwnFailDetDly	no_CompTermLdOut

Cfg_NetShtdwnFailDetEn	no_ConvHeatTermLdOut
Cfg_NetShtdwnFailFalbck	no_CtrlSpaceTemp
Cfg_NetShtdwnFailFxdVal	no_DaHilimit
Cfg_NetSpceCO2FailDetDly	no_DaHumidity
Cfg_NetSpceCO2FailDetEn	no_DaTemp
Cfg_NetSpceCO2FailFalbck	no_DCVEn
Cfg_NetSpceCO2FailFxdVal	no_DCVValue
Cfg_NetSpceRHFailDetDly	no_DehumActive
Cfg_NetSpceRHFailDetEn	no_DO1
Cfg_NetSpceRHFailFalbck	no_DO2
Cfg_NetSpceRHFailFxdVal	no_DO3
Cfg_NetSpceTmpFailDetDly	no_DO4
Cfg_NetSpceTmpFailDetEn	no_DO5
Cfg_NetSpceTmpFailFalbck	no_DO6
Cfg_NetSpceTmpFailFxdVal	no_DO7
Cfg_NetVOCLvlFailDetDly	no_DO8
Cfg_NetVOCLvlFailDetEn	no_EconDmprMinCmd
Cfg_NetVOCLvlFailFalbck	no_EconEn
Cfg_NetVOCLvlFailFxdVal	no_EffAuxHeatSetpoint
Cfg_NetWSHPEnStFailDetDly	no_EffCoolSp
Cfg_NetWSHPEnStFailDetEn	no_EffDlcShift
Cfg_NetWSHPEnStFailFalbck	no_EffHeatSp
Cfg_NetWSHPEnStFailFxdVal	no_EffLocalSch
Cfg_NetWSHPEnValFailDetDly	no_EffOccSensState
Cfg_NetWSHPEnValFailDetEn	no_EffOccState
Cfg_NetWSHPEnValFailFalbck	no_EffSchCurrentState
Cfg_NetWSHPEnValFailFxdVal	no_EffSchNextState
Cfg_OASensChar	no_EffSp
Cfg_OccSensChar	no_EffTempMode
Cfg_Purge_CtrlEn	no_EffTUNCOS
Cfg_Purge_Dur	no_Fan_RunTimeAccumulate
Cfg_Recovery_MaxCoolRampRate	no_FanCurSens
Cfg_Recovery_MaxCoolRampTemp	no_FanHiSpd
Cfg_Recovery_MaxHeatRampRate	no_FanLoSpd
Cfg_Recovery_MaxHeatRampTemp	no_FanSpd
Cfg_Recovery_MinCoolRampRate	no_FanStart
Cfg_Recovery_MinCoolRampTemp	no_GenericAlarm
Cfg_Recovery_MinHeatRampRate	no_HeatCtrl_RunTimeAccumulate
Cfg_Recovery_MinHeatRampTemp	no_HeatCtrlOut

Cfg_Setpoints_OccCoolSp	no_HeatStg1_RunTimeAccumulate
Cfg_Setpoints_OccHeatSp	no_HeatStg2_RunTimeAccumulate
Cfg_Setpoints_StbyCoolSp	no_HeatStg3_RunTimeAccumulate
Cfg_Setpoints_StbyHeatSp	no_HumActive
Cfg_Setpoints_UnOccCoolSp	no_IsAuxHeatDisable
Cfg_Setpoints_UnOccHeatSp	no_IsCompHeatDisable
Cfg_ShutdownChar	no_IsCoolDisable
Cfg_SpcAlarm_TempHighLim	no_IsEconomizing
Cfg_SpcAlarm_TempLowLim	no_IsFanOnly
Cfg_Stdby_OccSts	no_IsFreeCoolAvailable
Cfg_Sylk_SylkBus10En	no_IsHeatDisable
Cfg_Sylk_SylkBus11En	no_LocalOccSensState
Cfg_Sylk_SylkBus2En	no_MaLoLimActive
Cfg_Sylk_SylkBus3En	no_ManualOverride
Cfg_Sylk_SylkBus4En	no_MaTemp
Cfg_Sylk_SylkBus5En	no_ModEconEn
Cfg_Sylk_SylkBus6En	no_ModEconValue
Cfg_Sylk_SylkBus8En	no_mstpDataCrcErr
Cfg_Sylk_SylkBus9En	no_mstpHeaderCrcError
Cfg_SylkCalOffset_SylkBus10RH	no_OaDmprPos
Cfg_SylkCalOffset_SylkBus10Temp	no_OaHumidity
Cfg_SylkCalOffset_SylkBus11Temp	no_OaTemp
Cfg_SylkCalOffset_SylkBus2CO2	no_OccupancySensor
Cfg_SylkCalOffset_SylkBus2RH	no_OccupancyState
Cfg_SylkCalOffset_SylkBus2Temp	no_PurgeState
Cfg_SylkCalOffset_SylkBus3Temp	no_RaTemp
Cfg_SylkCalOffset_SylkBus4Temp	no_RecoveryStatus
Cfg_SylkCalOffset_SylkBus5Temp	no_Reminder10CalendarDaysRemTime
Cfg_SylkCalOffset_SylkBus6RH	no_Reminder10En
Cfg_SylkCalOffset_SylkBus6Temp	no_Reminder10RunTimeHrsRemTime
Cfg_SylkCalOffset_SylkBus8RH	no_Reminder1CalendarDaysRemTime
Cfg_SylkCalOffset_SylkBus8Temp	no_Reminder1En
Cfg_SylkCalOffset_SylkBus9RH	no_Reminder1RunTimeHrsRemTime
Cfg_SylkCalOffset_SylkBus9Temp	no_Reminder2CalendarDaysRemTime
Cfg_Thermostat_AdjStPt	no_Reminder2En
Cfg_Thermostat_BypOverrideTime	no_Reminder2RunTimeHrsRemTime
Cfg_Thermostat_ClAdjStPt	no_Reminder3CalendarDaysRemTime
Cfg_Thermostat_Deadband	no_Reminder3En
Cfg_Thermostat_HtAdjStPt	no_Reminder3RunTimeHrsRemTime

Cfg_Thermostat_MaxHeatSp	no_Reminder4CalendarDaysRemTime
Cfg_Thermostat_MinCoolSp	no_Reminder4En
Cfg_Thermostat_Override	no_Reminder4RunTimeHrsRemTime
Cfg_Thermostat_SysSwitch	no_Reminder5CalendarDaysRemTime
Cfg_Thermostat_SystemChangeOver	no_Reminder5En
Cfg_Thermostat_SystemConfig	no_Reminder5RunTimeHrsRemTime
Cfg_Thermostat_TempOffSpLimit	no_Reminder6CalendarDaysRemTime
Cfg_Thermostat_TstUnitSel	no_Reminder6En
Cfg_UI1	no_Reminder6RunTimeHrsRemTime
Cfg_UI1 _Ext	no_Reminder7CalendarDaysRemTime
Cfg_UI2	no_Reminder7En
Cfg_UI2_Ext	no_Reminder7RunTimeHrsRemTime
Cfg_UIO1	no_Reminder8CalendarDaysRemTime
Cfg_UIO1 _Ext	no_Reminder8En
Cfg_UIO2	no_Reminder8RunTimeHrsRemTime
Cfg_UIO2 _Ext	no_Reminder9CalendarDaysRemTime
Cfg_UISensCalOffset_CO2Lvl	no_Reminder9En
Cfg_UISensCalOffset_DATemp	no_Reminder9RunTimeHrsRemTime
Cfg_UISensCalOffset_MATemp	no_ReversingVlv
Cfg_UISensCalOffset_OATemp	no_ServiceMd
Cfg_WindowOpenChar	no_SetpointSts
Cfg_WindowOpnDelay	no_ShutdownState
Cfg_WindowOpnSetng	no_SmokeMode
Cfg_ZoneMultiHumSens_Control	no_SpaceCO2
Cfg_ZoneMultiSens_Control	no_SpaceHumidity
Cfg_ZoneMultiSens_HumSens1_Wt	no_SpaceTemp
Cfg_ZoneMultiSens_HumSens2_Wt	no_SylkAddr10Hum
Cfg_ZoneMultiSens_HumSens6_Wt	no_SylkAddr10Temp
Cfg_ZoneMultiSens_Sens1_Wt	no_SylkAddr11Temp
Cfg_ZoneMultiSens_Sens2_Wt	no_SylkAddr2CO2
Cfg_ZoneMultiSens_Sens3_Wt	no_SylkAddr2Hum
Cfg_ZoneMultiSens_Sens4_Wt	no_SylkAddr2Temp
Cfg_ZoneMultiSens_Sens5_Wt	no_SylkAddr3Temp
Cfg_ZoneMultiSens_Sens6_Wt	no_SylkAddr4Temp
Gui_AO_Filt	no_SylkAddr5Temp
Gui_AO_Raw	no_SylkAddr6Hum
Gui_ApplicationRevision	no_SylkAddr6Temp
Gui_Comp_Mode_Filt	no_SylkAddr8Hum
Gui_Comp_Mode_Raw	no_SylkAddr8Temp

Gui_DO_Filt	no_SylkAddr9Hum
Gui_DO_Raw	no_SylkAddr9Temp
Gui_LCDStatus	no_SystemDisable
Gui_LEDStatus	no_UIO1
Gui_LEDStatus_Filt	no_UIO2
Gui_LEDStatus_Raw	no_VOCLevel
Gui_mstpClearErr	no_WSHPEnableState
Gui_NetBypass	no_WSHPEnableValue
Gui_OaHum_Internet	OaHum_Display
Gui_OaTemp_Internet	OaTemp_Display
Gui_OnBoardHumRaw	InternalHumSens
Gui_OnBoardTempRaw	InternalTempSens
Gui_Sylk_Filt	
Gui_Sylk_Raw	
Gui_UI3_TempSens_Filt	
Gui_UI3_TempSens_Raw	
Gui_UI4_TempSens_Filt	
Gui_UI4_TempSens_Raw	
Gui_UI5_TempSens_Filt	
Gui_UI5_TempSens_Raw	
Gui_UI6_TempSens_Filt	
Gui_UI6_TempSens_Raw	
Gui_UI7_TempSens_Filt	
Gui_UI7_TempSens_Raw	
Gui_WiFiStatus	
ni_ApplicationMode	
ni_BypassState	
ni_BypassValue	
ni_DCVEn	
Appendix A	
Alarm_UI_RATemp	Cfg_DeltaTInitialConfig
no_Sylk11Pos	no_CoilFreezeProtAlm
no_Sylk11CycledTime	AlarmPriority_ProxiitySensAlarm
no_Sylk11PowerReport	AlarmPriority_PckEconFault
no_TermLdOut	no_Sylk11Status
no_Sylk11CalibrMax	no_Sylk11Overriden
no_Sylk11CalibrMin	AlarmPriority_Econ_FDD_NEWIS
no_DeltaTValue	AlarmPriority_Econ_FDD_EOA
Cfg_FanMinSpeed_ModHeat	AlarmPriority_Econ_FDD_EWISN

Cfg_SylkCalOffset_SylkBus12Temp	AlarmPriority_Econ_FDD_DNM
Cfg_Econ_DrybulbSp	AlarmPriority_ EconomizerFailure
Cfg_Econ_DrybulbHys - Dele	AlarmPriority_CoilFreezeProtAlm
Cfg_Econ_OaEnthHys	no_PckEconFault
Cfg_DCV_VentMinPosHigh	Cfg_Sylk_SylkBus12En
Cfg_DCV_VentMaxPosHigh	ni_PurgeState
Cfg_DCV_ThrottlingRange	Cfg_CO2_SensorType
no_SylkAddr12Temp	Cfg_RASensChar
ni_SylkAddr12Temp	Cfg_CO2Output
Cfg_UI1_Ext	ni_ServicePurgeOutputCmdDO
Cfg_UIO1_Ext	Cfg_Sylk11CalibrTrigger
Cfg_UIO2_Ext	Cfg_StagedHeatEn
Cfg_SylkBus11TravelTime	Cfg_StagedCoolEn
Cfg_DCV_VentMaxPosMid	Cfg_ComprHeatEn
Cfg_Econ_DrybulbDiffHys	Cfg_ModHeatEn
Cfg_Econ_DewPointHys	Cfg_ModulatingCoolEn
Cfg_Econ_MinDamperPos	Cfg_RunWithHum
Cfg_Econ_MinDamperPosLow	Cfg_RunWithDehum
Cfg_Econ_MinDamperPosMed	Sylk11Act_FailToOpen
Cfg_Econ_MechCoolingDelay	Sylk11Act_StuckMinPos
Cfg_SylkBus11Testmode	Sylk11Act_StuckMinPos1
Cfg_DaTAlarm_TempHighLim	Sylk11Act_StuckMinPos2
Cfg_DATAlarm TempLowLim	Cfg_PurOutput
Cfg_Purge_Pos	Cfg_Co2Output_Override
ni_SylkBus11Cmd	Calendar1
ni_OutdoorEnthalpy	Calendar2
ni_OutdoorDewpoint	Calendar3
ni_RaEnthalpy	Calendar4
ni_RaDewpoint	Calendar5
VentEffMinDisplay	Calendar6
VentEffMaxDisplay	Calendar7
Cfg_CO2_SensorZero	Calendar8
Cfg_CO2_SensorSpan	Calendar9
Cfg_UISensCalOffset_RATemp	Calendar10
Cfg_DCV_VentMinPosMid	TC500A
Cfg_SylkCalOffset_SylkBus12RH	Firmware
ni_SylkAddr12Hum	Application
no_SylkAddr12Hum	Registration
ni_ServiceCO2OutputCmd	PointConfig

ni_ServicePurgeOP2-10V	DREvents
Cfg_NEWIS_MixedAirRatio	AlarmPriority_HeatPumpFreqAlarm_Fault
Cfg_NEWIS_DelayTime	AlarmPriority_RATempAlarm_Fault
Cfg_EWISN_MixedAirRatio	no_Sylk11CalibrStatus
Cfg_EWISN_DelayTime	no_DeltaTConv/Aux/ModHtStg1Alarm
Cfg_EOA_MixedAirRatio	no_DeltaTConv/AuxStg2Alarm
Cfg_EOA_DelayTime	no_DeltaTConvStg3Alarm
Cfg_HeatStage1Min	no_DeltaTCompHt/Cl/ConvClStg1Alarm
Cfg_HeatStage1Max	no_DeltaTCompHt/Cl/ConvClStg2Alarm
Cfg_HeatStage1Delay	no_DeltaTCompHt/Cl/ConvClStg3Alarm
Cfg_HeatStage2Min	no_DeltaTModClAlarm(Fut)
Cfg_HeatStage2Max	AlarmPriority_DeltaT AlarmStatus
Cfg_HeatStage2Delay	no_DeltaT AlarmStatus
Cfg_HeatStage3Min	Sylk11_EconFaultAlarm
Cfg_HeatStage3Max	no_ModEconStatus
Cfg_HeatStage3Delay	OccSchedule
Cfg_CoolStage1Min	PurgeSchedule
Cfg_CoolStage1Max	Cfg_Econ_FreeCoolSelect
Cfg_CoolStage1Delay	Cfg_Econ_EnthCurveSel
Cfg_CoolStage2Min	Cfg_Econ_FreezePortDamperPos
Cfg_CoolStage2Max	Cfg_Econ_ShutdownDamperPos
Cfg_CoolStage2Delay	Cfg_Econ_MaLoc
Cfg_CoolStage3Min	Sylk11ActStatus
Cfg_CoolStage3Max	Cfg_StagedHeatMATempLimitEn
Cfg_CoolStage3Delay	Cfg_StagedHeatMARHLimitEn
Cfg_ComprHeatStage1Min	Cfg_StagedHeatOATempLimitEn
Cfg_ComprHeatStage1Max	Cfg_StagedHeatOARHLimitEn
Cfg_ComprHeatStage1Delay	Cfg_StagedCoolMATempLimitEn
Cfg_ComprHeatStage2Min	Cfg_StagedCoolMARHLimitEn
Cfg_ComprHeatStage2Max	Cfg_StagedCoolOATempLimitEn
Cfg_ComprHeatStage2Delay	Cfg_StagedCoolOARHLimitEn
Cfg_ComprHeatStage3Min	Cfg_ModHeatMATTempLimitEn
Cfg_ComprHeatStage3Max	Cfg_ModheatMARHLimitEn
Cfg_ComprHeatStage3Delay	Cfg_ModheatOATempLimitEn
Cfg_ModCoolMin	Cfg_ModheatOARHLimitEn
Cfg_ModCoolMax	Cfg_ModCoolMATempLimitEn
Cfg_ModCoolDelay	Cfg_ModCoolMARHLimitEn
Cfg_ModCoolMinOuput	Cfg_ModCoolOATempLimitEn
Cfg_ModHeatMin	Cfg_ModCoolOARHLimitEn

Cfg_ModHeatMax	Cfg_ComprHeatMATempLimitEn
Cfg_ModHeatDelay	Cfg_ComprHeatMARHLimitEn
Cfg_ModHeatMinOuput	CmprHtgStage1Alert
Cfg_StagedHeatMATempLimitMin	CmprHtgStage2Alert
Cfg_StagedHeatMATempLimitMax	CmprHtgStage3Alert
Cfg_StagedHeatMARHLimitMin	HtgStage2Alert
Cfg_StagedHeatMARHLimitMax	ModClgAlert
Cfg_StagedHeatOATempLimitMin	HtgStage1Alert
Cfg_StagedHeatOATempLimitMax	Cfg_ComprHeatOARHLimitEn
Cfg_StagedHeatOARHLimitMin	HtgStage3Alert
Cfg_StagedHeatOARHLimitMax	Cfg_ComprHeatOATempLimitEn
Cfg_StagedCoolMATempLimitMin	Cfg_FanSpeed_EconomizerMode
Cfg_StagedCoolMATempLimitMax	N_DdcCommand_0
Cfg_StagedCoolMARHLimitMin	N_DdcCommand_1
Cfg_StagedCoolMARHLimitMax	N_DdcCommand_2
Cfg_StagedCoolOATempLimitMin	
Cfg_StagedCoolOATempLimitMax	
Cfg_StagedCoolOARHLimitMin	
Cfg_StagedCoolOARHLimitMax	
Cfg_ModHeatMATTempLimitMin	
Cfg_ModHeatMATTempLimitMax	
Cfg_ModheatMARHLimitMin	
Cfg_ModheatMARHLimitMax	
Cfg_ModheatOATempLimitMin	
Cfg_ModheatOATempLimitMax	
Cfg_ModheatOARHLimitMin	
Cfg_ModheatOARHLimitMax	
Cfg_ModCoolMATempLimitMin	
Cfg_ModCoolMATempLimitMax	
Cfg_ModCoolMARHLimitMin	
Cfg_ModCoolMARHLimitMax	
Cfg_ModCoolOATempLimitMin	
Cfg_ModCoolOATempLimitMax	
Cfg_ModCoolOARHLimitMin	
Cfg_ModCoolOARHLimitMax	
Cfg_ComprHeatMATempLimitMin	
Cfg_ComprHeatMATempLimitMax	
Cfg_ComprHeatMARHLimitMin	
Cfg_ComprHeatMARHLimitMax	

Cfg_ComprHeatOATempLimitMin	
Cfg_ComprHeatOATempLimitMax	
Cfg_ComprHeatOARHLimitMin	
Cfg_ComprHeatOARHLimitMax	
Appendix B	
Cfg_WaterFlwStsChar	ni_ServiceCoolCtrl
Cfg_SpcSensChar	no_CoolCtrlOut
Cfg_ModHeatMin_Output	no_CoolCtrl_RunTimeAccumulate
Cfg_ModHeatAction	no_DRStatus
Cfg_ModCoolAction	AlarmPriority_EconomizerFailure
Cfg_VarSpeedFanType	AlarmPriority_IntEconomizerFailure
Cfg_FanSpeed_CmprCoolSingle	Cfg_ComprHeatEn
Cfg_FanSpeed_CmprCoolMulti	Cfg_ComprHeatStage1Min
Cfg_FanSpeed_HeatSingle	Cfg_ComprHeatStage1Max
Cfg_FanSpeed_HeatSingle	Cfg_ComprHeatStage1Delay
Cfg_MultipleFanSpeed_ModHeat	Cfg_ComprHeatStage2Min
Cfg_MultipleFanSpeed_ModCool	Cfg_ComprHeatStage2Max
Cfg_VarSpeedFan_CoolMinSpeed	Cfg_ComprHeatStage2Delay
Cfg_VarSpeedFan_CoolMaxSpeed	Cfg_ModHeatEn
Cfg_VarSpeedFan_HeatMinSpeed	Cfg_Econ_FreezeProtDamperPos
Cfg_VarSpeedFan_HeatMaxSpeed	
Cfg_VarSpeedFan_PurgeSpeed	
Cfg_VarSpeedFan_VentSpeed	
Cfg_Equip_CoolType	
Cfg_Cool_ModClEnMinOut	
Cfg_Mod_StgCl1En	
Cfg_ModCoolMin_Output	
Cfg_ModCoolMax_Output	
Cfg_ModCoolInitialAtFullOp	
Cfg_ModCoolFullOpCycleTime	
Cfg_Heat_ModHtEnMinOut	
Cfg_ModHeatMin_Output	
Cfg_ModHeatMax_Output	
Cfg_MaTThresholdValue	
Cfg_DmprDelayTime	
Cfg_UISensCalOffset_SpcTemp	
Cfg_CmprHeatOARHLimitEn	
Cfg_DRMoOffset	

Appendix C	
Cfg_FanCoilDrainPanSrChar	Cfg_FanCoilManualSpeedSel
Cfg_FanCoilOnOffHtgVlvChar	Cfg_FanCoilDATSpEnSwitch
Cfg_FanCoilOnOffClgVlvChar	Cfg_FanCoilClgFloatingSyncEn
Cfg_CoolStage4Min	Cfg_FanCoilHtgFloatingSyncEn
Cfg_CoolStage4Max	Cfg_FanCoilDATCtr_CoolTr
Cfg_CoolStage4Delay	Cfg_FanCoilDATCtr_CoolIt
Cfg_AlarmConfig_ CHWDrainPanSrAlarm	Cfg_FanCoilDATCtr_CoolDr
Ni_ServiceCoolStage4	Cfg_FanCoilDATCtr_HeatTr
ni_ServiceExhaustFan1Cmd	Cfg_FanCoilDATCtr_HeatIt
ni_ServiceExhaustFan2Cmd	Cfg_FanCoilDATCtr_HeatDr
no_CoolStg4_RunTimeAccumulate	Cfg_FanCoilTwoSpeedVentMode
no_DeltaTCompHt/Cl/ConvClStg4Alarm	Cfg_FanCoilThreeSpeedVentMode
no_ExhaustFan1Status	Cfg_FanCoilDrainPanSrChar
no_ExhaustFan2Status	Cfg_FanCoilOnOffHtgVlvChar
no_HWValveStatus	Cfg_FanCoilOnOffClgVlvChar
no_CWValveStatus	
Cfg_Econ_EXH1Sp	**Appendix D**
Cfg_Econ_EXH2Sp	Cfg_Thermostat_CommUnitSel
Cfg_Econ_EXH1SpL	Cfg_Cool_EnableOATLockout
Cfg_Econ_EXH1SpH	Cfg_Heat_EnableOATLockout
Cfg_Econ_EXH2SpM	Cfg_AuxiliaryHeat_EnableOATLockout
Cfg_Econ_EXH2SpL	Cfg_Compressor_EnableOATLockout
Cfg_Econ_EXH2SpH	no_HeatOATLockout
Cfg_Econ_EXH2SpM	no_CoolOATLockout
Cfg_FanCoilType	
Cfg_FanCoilHtgType	
Cfg_FanCoilClgType	
Cfg_FanCoilHtgDriveType	
Cfg_FanCoilClgDriveType	
Cfg_FanCoilHtgDriveTime	
Cfg_FanCoilClgDriveTime	
Cfg_FanCoilTwoPipeSingleCoil	
Cfg_FanCoilSupTempHtgSp	
Cfg_FanCoilSupTempHtgOffsetSp	
Cfg_FanCoilSupTempClgSp	
Cfg_FanCoilSupTempClgOffsetSp	
Cfg_FanCoilTwoSpeedType	
Cfg_FanCoilThreeSpeedtype	

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