

SIEMENS



BACnet PTEC Controller Unit Vent 0-10V Output

Start-up Procedures

Table of Contents

Before You Begin.....	4
Room Unit Identification.....	5
Setting the Application	5
Start and Span of Voltages for 0 to 10V Actuators.....	6
AO DIR.REV	6
Enabling Night Heating	7
Enabling Night Cooling	7
DO DIR.REV	7
Enabling Auxiliary Radiation	7
Enabling Electric Heat	8
Enabling DX Cooling.....	8
Enabling Closure of 2-position Valve.....	8
Setting Room Temperature Offset (optional).....	8
Setting Room Temperature Setpoints (Digital and Analog Room Units)	8
Setting STPT SPAN.....	9
Selecting Options for Room Unit Setpoints	9
Standard/Absolute Setpoint Mode (Digital Room Unit).....	9
Warmer/Cooler Setpoint Mode (Digital Room Unit)	10
Standard/Absolute Setpoint Mode (Analog or Digital Room Unit)	11
Warmer/Cooler Setpoint Mode (Analog Room Unit Only)	12
Setting SENSOR SEL.....	12
Outdoor Air Damper Minimum Position	13
Valve Configuration	14
Enabling Face-bypass Damper	14
Override Time	14
Enabling Wall Switch	14
Gains and Bias	14
Setting Controller Address.....	17
Configuring BACnet Parameters	17
Auto Discover and Auto Addressing.....	18
Commissioning a Controller	21
Flashing Controller Firmware.....	23

Before You Begin



NOTE:

For information on applications with Firmware Revision Bx40 or earlier, see InfoLink and/or Asset Portal for documentation.



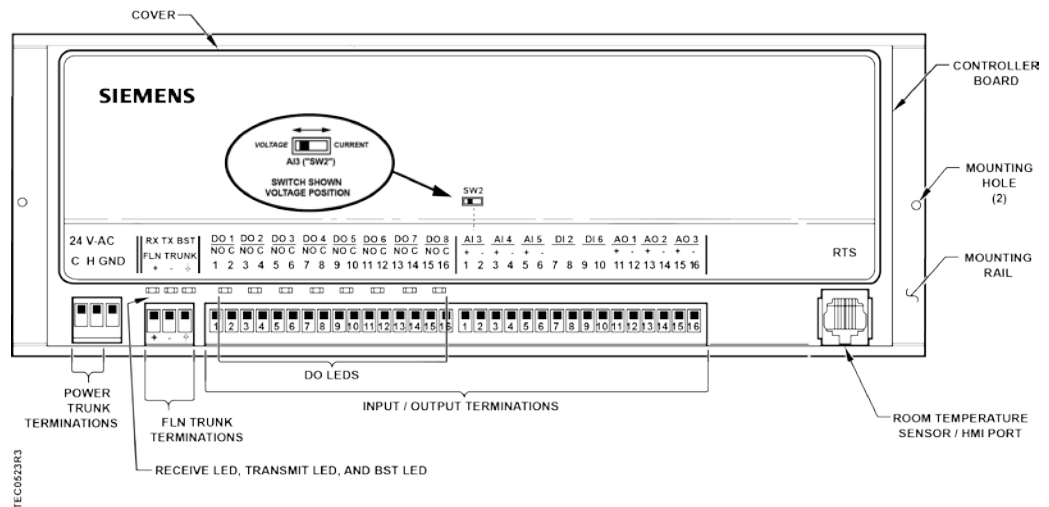
NOTE:

WCIS version 4.0 or later must be used to configure and auto-address Siemens BACnet MS/TP Equipment Controllers.

If you need metric units and the controller is communicating through the MS/TP driver in the field panel, uncheck the Metric check box. The conversion must be handled in the field panel.

If free cooling is desired, command FREE CLG to ON when free cooling is available and OFF when it is not available. This point can be commanded locally with the appropriate PPCL in the controller.

FREE CLG can also be commanded over the BACnet network as the result of appropriate PPCL in a Siemens field panel or as the result of a command from some other BACnet device that determines free cooling availability.



Generic Controller I/O Layout. See *Wiring Diagram* for application specific details.



NOTE:

Digital Room Units (Firmware Revision 26 and later) will update their controlled inputs without putting them Out Of Service. However, a command from an external source through the digital room unit will put the associated BACnet Input point Out Of Service.

Communication and DO Indicators

The Siemens BACnet PTEC Unit Vent Controller has LEDs to indicate communication (yellow) and DO (digital output) status BST (yellow).

The RX LED will flash for data packets received by the controller from the MS/TP network. The TX LED will flash for data packets sent by the controller to the MS/TP network. Each DO has an associated LED located above its termination point. This LED point is on when the associated DO is commanded ON; otherwise, it is OFF.

The BACnet PTEC will automatically detect the MS/TP baud rate at start up and will communicate with other devices when configured as a master MS/TP device (address 1 through 127). The TX LED will start flashing as it attempts to communicate with other devices.

Room Unit Identification

- For Analog Room Units – The revision number is visually identified by its case.
- For Digital Room Units (Firmware Revision 25 or earlier) – The revision number displays for 5 seconds when the room unit is first powered up. These room units will display `laptop` when a laptop is connected and will no longer update room temperature sensor values.
- For Digital Room Units (Firmware Revision 26 and later) – The revision number displays for 5 seconds when the room unit is first powered up or when a laptop is disconnected. These room units will continue to display and update the room temperature sensor values when a laptop is connected.

Setting the Application

Add the TEC to your job database and select one of the following applications.

Application Description	Application Number
Heating and/or Chilled Water Cooling, ASHRAE Cycles I and II	6675
Heating and/or Chilled Water Cooling, ASHRAE Cycle III	6676
Heating and DX Cooling, ASHRAE Cycles I and II	6677
Heating and DX Cooling, ASHRAE Cycle III	6678
Nesbitt Cycle W	6679
Slave Mode	6695

The controller will go through a shut-down/load sequence as it switches from slave mode to the selected application.

Start and Span of Voltages for 0 to 10V Actuators

Start and Span (range) actuator voltages will depend on the actuators you are using. See the *Actuator Start and Span Voltages* table for setpoint names and typical voltages.


NOTE:

The maximum voltage output for the AOs is 10V. The starting voltage plus the voltage range must not exceed 10V. The controller will not control the valve or damper actuator beyond 10V.

Descriptor	Point Number	Siemens Actuators	Barber-Coleman P/N MP5433
		Voltage Range	
AOV1 SPAN	31	10 (default)	3
AOV2 SPAN	33		
AOV3 SPAN	35		
		Starting Voltage	
AOV1 START	32	0 (default)	6
AOV2 START	34		
AOV3 START	36		

Actuator Start and Span Voltages

AO DIR.REV

Set AO DIR.REV to the appropriate value shown in the Table *AO DIR.REV Values*. This point should be set based on whether the actuators are normally open or normally closed.

AO DIR.REV Values			
Normal Position of actuator on AO1	Normal Position of actuator on AO2	Normal Position of actuator on AO3	AO DIR.REV value
Closed	Closed	Closed	0 (default)
Open	Closed	Closed	1
Closed	Open	Closed	2
Open	Open	Closed	3
Closed	Closed	Open	4
Open	Closed	Open	5
Closed	Open	Open	6
Open	Open	Open	7

Enabling Night Heating

Hot Water heat - leave NGT HW HTG at its default position of **YES**, which will open the hot water valve during night mode.

Steam or Electric heat - set NGT HW HTG to **NO**.

Enabling Night Cooling

If cooling is desired during night mode, set NGT CLG MODE to **YES**.



NOTE:

For cooling only units, NGT CLG MODE must be set to YES to enable cooling in night mode.

Otherwise, leave NGT CLG MODE at its default value of **NO**.

DO DIR.REV

If the normal (de-energized) state of all of the devices controlled by DOs is direct-acting, leave DO DIR.REV at its default value of **0**.

Otherwise, reverse the action of the devices as follows:

1. Add the values in the Table *DO DIR.REV Values* for each DO you want to make reverse-acting.
2. Set DO DIR.REV to this value.

DO DIR.REV Values	
Reverse-Acting DO	Value
DO1	32
DO2	16
DO3	8
DO4	4
DO5	2
DO6	1
DO7	64
DO8	128

Enabling Auxiliary Radiation

Application 6675 through 6678

- If the unit has auxiliary radiation, set AUX.NOAUX to **AUX**.

Enabling Electric Heat

Applications 6675 through 6678

- If the unit has electric heating coils that will be controlled by DOs, set ELEC.NOELEC to **ELEC**.

Enabling DX Cooling

Applications 6677 and 6678

- No action is required. DX cooling is enabled internally.

Application 6679

- If the unit has DX cooling, set DX COOLING to **YES** to enable.

Enabling Closure of 2-position Valve

Applications 6675 through 6678

- If the unit has a face-bypass damper and 2-position valves, set FBP.2PSVCTL to **ENABLE** to allow the 2-position valve to close when the face-bypass damper is at the bypass closed position.

Setting Room Temperature Offset (optional)

Enter plus or minus corrections for room temperature sensor in RMTMP OFFSET.

Example

If the actual room temperature is 72.0°F (22.2°C), but the value of ROOM TEMP is showing 73.0°F (23.8°C), then the value to be entered into RMTMP OFFSET (or TEMP OFFSET) would be -1.0 (negative 1 degree). In this case, ROOM TEMP would read the raw value 73.0°F (23.8°C), but CTL TEMP would equal 72.0°F (22.2°C).

CTL TEMP = ROOM TEMP + RMTMP OFFSET (or TEMP OFFSET)

Setting Room Temperature Setpoints (Digital and Analog Room Units)

Set the following basic control temperature setpoints:

- Day (or OCC) cooling setpoint: DAY CLG STPT (default 74°)
- Day (or OCC) heating setpoint: DAY HTG STPT
- Night (or UOC) cooling setpoint: NGT CLG STPT
- Night (or UOC) heating setpoint: NGT HTG STPT

If STPT DIAL is set to NO, CTL STPT will use the above setpoint depending on the HEAT.COOL mode and the day/night mode.

Setting STPT SPAN

Set STPT SPAN = 0 for Room Unit setpoint use as standard (absolute values for example, 74 F). For configurations for warmer/cooler (per *Selecting Options for Room Unit Setpoints*), set STPT SPAN = 1 degree or greater (for example, STPT SPAN = 2 will allow -2 to +2 degrees from the current heating or cooling setpoint).

Selecting Options for Room Unit Setpoints

In addition to the base room temperature setpoints that should be entered above, when STPT DIAL = YES, the following options are provided for room units using Standard/Absolute or Warmer/Cooler temperature setpoints, depending on the room unit provided.

The following sections provide the setup configurations based on desired room unit setpoint option:

- Standard/Absolute Setpoints Mode (Digital Room Units [→ 9])
- Warmer/Cooling Setpoints Mode (Digital Room Units [→ 10])
- Standard/Absolute Setpoints Mode (Analog or Digital Room Units [→ 11])
- Warmer/Cooling Setpoints Mode (Analog Room Units) [→ 12]



NOTE:

For all of these configurations, if a zero shift of setpoint is desired or specified when changing from heating to cooling, set DAY CLG STPT = DAY HTG STPT. This may not be in compliance with various energy and control standards.

Standard/Absolute Setpoint Mode (Digital Room Unit)

Digital Room Unit (2200/2300 Series Firmware Revision 26 and later)

The setpoint value entered on the room unit will be equal to the RM STPT DIAL and will be used for CTL STPT.

1. Set STPT DIAL = **YES**.
2. Set STPT SPAN = **0**.
3. Set SENSOR SEL = **1** (additive value)
Enables Room Unit Temperature and setpoint options. Other room unit options can then be added as needed. See *Setting SENSOR SEL*.
4. Set RM STPT MIN and RM STPT MAX to a limit range for setpoint adjustment.
5. Set DAY CLG STPT and DAY HTG STPT to the initial values to be used by the room unit and to establish the heating/cooling setpoint and shift.

Configuration values used by the digital room unit are sent from the points configured above in the PTEC and do not need to be individually entered into the room unit. These include, SET PT MIN, SET PT MAX and SEL PT DIS (display option).

Example

DAY CLG STPT = 74, DAY HTG STPT = 70

In cooling mode, the current room setpoint in RM STPT DIAL displays when you press a setpoint UP/DOWN button. You can change the displayed value and the RM STPT DIAL value within the min/max limits.

When you press the UP button to the new cooling setpoint of 78 (an increase from the base cooling setpoint of plus 4 degrees), it will be displayed in RM STPT DIAL. When the controller switches to heating mode, the RM STPT DIAL will display the DAY HTG STPT, also offset by plus 4 degrees (74).

In this Standard/Absolute configuration, the value of RM STPT DIAL will display the actual control setpoint.

Warmer/Cooler Setpoint Mode (Digital Room Unit)

Digital Room Unit (2200/2300 Series Firmware Revision 26 and later)



NOTE:

The revision number displays for 5 seconds when the room unit is first powered up or when a laptop is disconnected.

Digital Room Units (Firmware Revision 26 and later) will continue to display and update the room temperature sensor values when a laptop is connected.

The room unit setpoint shift (warmer/cooler) will be used to set the RM STPT DIAL temperature and will be used for CTL STPT.

1. Set STPT DIAL = **YES**.
2. Set STPT SPAN = **1** (or greater).
3. Set SENSOR SEL = **1** (additive value)
Enables Room Unit Temperature and setpoint options. Other room unit options can then be added as needed. See *Setting SENSOR SEL*.
4. Set RM STPT MIN and RM STPT MAX to a limit range for setpoint adjustment.
5. Set DAY CLG STPT and DAY HTG STPT to the initial values to be used by the room unit and to establish the initial heating/cooling setpoint shift.

Configuration values used by the digital room unit are sent from the points configured above in the PTEC and do not need to be individually entered into the room unit. These include, SET PT MIN, SET PT MAX and SEL PT DIS (display option).

Example

DAY CLG STPT = 74, DAY HTG STPT = 70; STPT SPAN = 2

In cooling mode, this warmer/cooler configuration, when you press the UP or DOWN button, the graphic display will indicate the current shift, if any. You can change the graphic display two steps UP or DOWN. You press UP (warmer) by two steps (maximum shift allowed with the setup). The RM STPT DIAL will display the new cooling setpoint of 76; (a shift from the base cooling setpoint of 2 degrees). When the controller switches to heating mode, the RM STPT DIAL will display the DAY HTG STPT, also offset by plus 2 degrees (72), while the room unit graphic display will maintain its + 2 shift.

RM STPT DIAL value will be limited to RM STPT MIN and RM STPT MAX values.

In this warmer/cooler configuration, the value of RM STPT DIAL will display the actual control setpoint.

Standard/Absolute Setpoint Mode (Analog or Digital Room Unit)

Analog (1000 Series) or Digital Room Units (Firmware Revision 25 or earlier)



NOTE:

The revision number displays for 5 seconds when the room unit is first powered up.

For the configuration for these devices, the CTL STPT is an offset calculation from the value set on the room unit. This offset is established by the difference between the DAY CLG STPT and the DAY HTG STPT. The value on the RM STPT DIAL, as set by the room unit, is the midpoint of this offset.

1. Set STPT DIAL = **YES**.
2. Set STPT SPAN = **0**.
3. Do one of the following:
 - Digital Room Unit: Set SENSOR SEL = **1** for Digital Room units (additive value)
Enables Room Unit Temperature and setpoint options. Other room unit options can then be added as needed. See *Setting SENSOR SEL*.
 - Analog Room Unit: Set SENSOR SEL = **0** for Analog Room units (additive value)
Disables Digital Room Unit Temperature and setpoint options. Other sensor select options for type of thermistor used can then be added as needed. See *Setting SENSOR SEL*.
4. Set RM STPT MIN and RM STPT MAX to limit range for setpoint adjustment.
5. Set DAY CLG STPT and DAY HTG STPT to establish the heating/cooling deadband only (actual value are not used to establish CTL STPT).

Example

DAY CLG STPT = 74, DAY HTG STPT = 70

This provides a setpoint deadband of 4 degrees.

In either cooling or heating mode, the RM STPT DIAL will display the value set by the room unit (limited by RM STPT MIN and MAX).

- In cooling mode, CTL STPT will be RM STPT DIAL + 0.5 * setpoint deadband
- In the heating mode, CTL STPT will be RM STPT DIAL – 0.5 * setpoint deadband

Example

When the user selects a setpoint on the room unit of 78 degrees it will be displayed in RM STPT DIAL. However, the control setpoint will be offset from this value. In cooling mode, CTL STPT will be $78 + 2 = 80$ degrees, and in heating mode CTL STPT will be $78 - 2 = 76$ degrees.

The displayed temperature setpoint on the room unit and the value of RM STPT DIAL will display MID POINT of the actual control setpoints.

Warmer/Cooler Setpoint Mode (Analog Room Unit Only)

Analog Room Unit (1000 Series)

The room unit setpoint shift (warmer/cooler) will be used to set the RM STPT DIAL temperature and will be used for CTL STPT.

1. Set STPT DIAL = **YES**.
2. Set STPT SPAN = **1** (or greater).
3. Set SENSOR SEL = **0** (additive value)
Disables Digital Room Unit Temperature and setpoint options. Other sensor select options for type of thermistor used can then be added as needed. See *Setting SENSOR SEL*.
4. In this option, RM STPT MIN and RM STPT MAX are not used to limit setpoint range (this is accomplished by the STPT SPAN adjustment).
5. Set DAY CLG STPT and DAY HTG STPT to the initial values to be used by the room unit and to establish the initial heating/cooling setpoint shift.

The analog room unit setpoint slider is mapped to + and – the STPT SPAN configured. When the slider is at mid point, there is no shift in cooling or heating setpoint used by CTL STPT and displayed in RM STPT DIAL.

Example

DAY CLG STPT = 74, DAY HTG STPT = 70; STPT SPAN = 4

In cooling mode, In this warmer/cooler configuration, when the user moves the slider half way up to the top (a 2 degree shift), the CTL STPT and RM STPT DIAL will display the new cooling setpoint of 76 (a shift from the base cooling setpoint of 74 degrees). When the controller switches to heating mode, CTL STPT and RM STPT DIAL will display the DAY HTG STPT also offset by plus 2 degrees (72) while the slide remains at the previous position.

In this warmer/cooler configuration, the value of RM STPT DIAL will display the actual control setpoint.

Setting SENSOR SEL

SENSOR SEL is a configurable, enumerated point (values are additive). This point tells the controller what type of room unit is being used and how to handle loss of data. It also provides the ability to enable the optional RH and CO2 sensors and which thermistor type is connected.

Room Temperature, Setpoint, RH and CO2

- When the digital room unit (Series 2200/2300) is used, SENSOR SEL selects the source for temperature and setpoint and enables a loss of communications indication:
 - Temperature/Setpoint enable and supervision for fail communications (temperature) with a value of 1.
 - Relative humidity enable and supervision for fail communications with a value of 2.
 - CO2 enable and supervision for fail communications with a value of 4.

- When the analog room unit (Series 1000/2000) is used, default temperature sensing (0) from an analog room unit is enabled (relative humidity and CO2 sensing are not available and should not be selected).

Thermistor Inputs

- Default for either input is 10K.
- To enable 100K thermistor on input, see the following table for additive values of 8 or 16.

Other Inputs (only available on Digital Room Unit)

- Use the following table to select and enable communications supervision of room temperature/setpoint dial, relative humidity or CO2 for additive values of 1, 2 and 4.

SENSOR SEL Value * (additive)	Description (include values to enable feature)
1	Select Digital Room Unit (for temperature sensing and setpoint dial)
2	Relative Humidity (RH) sensing
4	CO ₂ sensing
8	If short board: 100K Ω thermistor on AI 3 (else input is 10K Ω) If long board: 100K Ω thermistor on AI 5 (else input is 10K Ω)
16	Long board only: 100K Ω thermistor on AI 4 (else input is 10K Ω)

Room DEW POINT

When the SENSOR SEL enables the relative humidity sensor, the controller will calculate a DEW POINT for information and use when the application is adopted (PPCL) for chilled ceiling configurations. Calculations will be based on valid (or overridden) values of the control temperature (CTL TEMP) and room humidity (RM RH).

Room ENTHALPY

When the SENSOR SEL enables the relative humidity sensor, the controller will calculate the ENTHALPY value for information or for use by PPCL in the controller or field panel to determine when FREE CLG should be enabled. Calculations will be based on valid values of the control temperature (CTL TEMP) and room humidity (RM RH).

Outdoor Air Damper Minimum Position

If the minimum position for the outdoor air damper is a value other than the default value of 14.8%, set OADPR MINPOS as follows:

- For ASHRAE Cycle I, set OADPR MIN POS to **100**.
- For ASHRAE Cycle II, III, or Nesbitt Cycle W, consult the job documentation for the appropriate value.

Valve Configuration

Applications 6675 and 6676

- If the unit has one valve that controls a coil that changes from heating to cooling depending on the season (a two-pipe heat/cool configuration), set 1 VLV HTGCLG to **YES**.

Enabling Face-bypass Damper

Applications 6675 through 6678

- If the unit has a face-bypass damper, set FBP.MODVALVE to **FBP**.

Override Time

1. If using night override, set OVRD TIME to the number of whole hours that an override should last.
2. To disable night override, set OVRD TIME to **0**.

Enabling Wall Switch

If a wall switch is used for day/night (occupied/unoccupied) control, enable it by setting WALL SWITCH to **YES**.

Otherwise, leave WALL SWITCH at its default value of **NO**.

Gains and Bias

Set the P, I, and D gains and bias according to the appropriate table.

Applications 6675 and 6677

	ASHRAE Cycles I and II (SI Units)			
Hardware Configuration	Cooling Loop 63 CLG P GAIN 64 CLG I GAIN 65 CLG D GAIN 66 CLG BIAS	Heating Loop 67 HTG P GAIN 68 HTG I GAIN 69 HTG D GAIN 70 HTG BIAS	Room Loop 71 ROOM P GAIN 72 ROOM I GAIN 73 ROOM D GAIN 74 ROOM BIAS	Auxiliary Loop 81 AUX P GAIN 82 AUX I GAIN 83 AUX D GAIN 84 AUX BIAS
VALVES				
Steam	Does not apply.	0.4 (0.72) 0.015 (0.027) 5 (9) 50 (50)	2.3 (4.14) 0.00504 (0.009072) 76 (136.8) 72 (22.38)	0.4 (0.72) 0.00099 (0.001782) 50 (80) 0 (0)
HW	Does not apply.	0.06 (1.08) 0.02 (0.036) 15 (27) 50 (50)	2.3 (4.14) 0.00504 (0.009072) 76 (136.8) 72 (22.38)	0.04 (0.72) 0.00099 (0.001782) 50 (80) 0 (0)
CHW	1.6 (2.88) 0.05 (0.09)	Does not apply.	2.3 (4.14) 0.00504 (0.009072)	Does not apply.

	ASHRAE Cycles I and II (SI Units)			
	10 (18) 50 (50)		76 (136.8) 72 (22.38)	
DAMPERS				
FBP Steam	Does not apply.	0.3 (0.54) 0.02 (0.036) 0 (0) 50 (50)	2.3 (4.14) 0.00504 (0.009072) 76 (136.8) 72 (22.38)	Does not apply.
FBP HW	Does not apply.	0.5 (0.9) 0.03 (0.054) 0 (0) 50 (50)	2.3 (4.14) 0.00504 (0.009072) 76 (136.8) 72 (22.38)	Does not apply.
FBP CHW	0.6 (1.08) 0.04 (0.072) 0 (0) 50 (50)	Does not apply.	2.3 (4.14) 0.00504 (0.009072) 76 (136.8) 72 (22.38)	Does not apply.
ELECTRIC				
3 Steps	Does not apply.	1 (1.8) 0.02 (0.036) 10 (18) 50 (50)	2.3 (4.14) 0.00504 (0.009072) 76 (136.8) 72 (22.38)	Does not apply.
DX				
DX	10 (18) 0.02 (0.036) 200 (360) 50 (50)	Does not apply.	Does not apply.	Does not apply.

Applications 6676 and 6678

	ASHRAE Cycle III (SI Units)		
Hardware Configuration	Cooling Loop 63 CLG P GAIN 64 CLG I GAIN 65 CLG D GAIN 66 CLG BIAS	Heating Loop 67 HTG P GAIN 68 HTG I GAIN 69 HTG D GAIN 70 HTG BIAS	Mixed Air Loop 81 MA P GAIN 82 MA I GAIN 83 MA D GAIN 84 MA BIAS
VALVES			
Steam	Does not apply.	2.5 (4.5) 0.005 (0.009) 127 (228.6) 50 (50)	Does not apply.
HW	Does not apply.	5 (9) 0.008 (0.0144) 250 (450) 50 (50)	Does not apply.
CHW	8 (14.4) 0.01 (0.018) 250 (450) 0 (0)	Does not apply.	Does not apply.
DAMPERS			

	ASHRAE Cycle III (SI Units)		
Mixed Air	Does not apply.	Does not apply.	1 (1.8) 0.05004 (0.090072) 0 (0) 14.8 (14.8)
FBP Steam	Does not apply.	2.5 (4.5) 0.005 (0.009) 127 (228.6) 50 (50)	Does not apply.
FBP HW	Does not apply.	5 (9) 0.008 (0.0144) 250 (450) 50 (50)	Does not apply.
FBP CHW	8 (14.4) 0.01 (0.018) 250 (450) 0 (0)	Does not apply.	Does not apply.
ELECTRIC			
3 Steps	Does not apply.	5 (9) 0.008 (0.0144) 250 (450) 50 (50)	Does not apply.
DX			
DX	10 (18) 0.02 (0.036) 200 (360) 50 (50)	Does not apply.	Does not apply.

Application 6679

	Nesbitt Cycle W (SI Units)		
Hardware Configuration	Cooling Loop 63 CLG P GAIN 64 CLG I GAIN 65 CLG D GAIN 66 CLG BIAS	Heating Loop 67 HTG P GAIN 68 HTG I GAIN 69 HTG D GAIN 70 HTG BIAS	Outdoor Air Loop 81 OA P GAIN 82 OA I GAIN 83 OA D GAIN 84 OA BIAS
VALVES			
Steam	Does not apply.	2.5 (4.5) 0.005 (0.009) 127 (228.6) 40 (40)	Does not apply.
HW	Does not apply.	5 (9) 0.008 (0.0144) 250 (450) 40 (40)	Does not apply.
CHW	8 (14.4) 0.01 (0.018) 250 (450) 0 (0)	Does not apply.	Does not apply.
DAMPERS			

	Nesbitt Cycle W (SI Units)		
Mixed Air	Does not apply.	Does not apply.	1 (1.8) 0.05004 (0.090072) 0 (0) 14.8 (14.8)
DX			
DX	10 (18) 0.02 (0.036) 200 (360) 50 (50)	Does not apply.	Does not apply.

Setting Controller Address

1. In WCIS select **View > Edit/View Reports**.
2. Select a report from list and click **Apply**.
3. Set CTLR ADDRESS to the BACnet MS/TP MAC address. (0 through 127 = Master; 128 through 254 = Slave).



NOTE:

See the *WCIS Online Help* for instructions on auto-addressing on the network. Otherwise, set the controller address and MS/TP network baud rate prior to connecting the controller to the network. See Configuring BACnet Parameters [→ 17].

Configuring BACnet Parameters

Using WCIS, do the following:

1. From the **Device** menu, select **Device Properties** to configure BACnet parameters.
2. In the **Object** section, enter information for the following fields:
 - **Name** – unique to BACnet network, (12 alphanumeric character limit).
 - **ID** – unique to BACnet network (valid values are 0 through 4,194,303).
 - **Description** – description of controller (60 alphanumeric character limit).
 - **Location** – physical location of controller (60 alphanumeric character limit).
3. In the **BACnet Communication Settings** section:
 - Set the **CIS/MMI Command Priority** to the desired value.
 - Set **Baud Rate** to the MS/TP network baud rate. Options are; 9600, 19200, 38400 or 76800 (default is 19200).
4. In the **MSTP Slave** section:
 - Check the box for a slave device.
 - Set the **MAC Master Node** number.

5. In the **Device Settings** section (configuring the Room Unit port), do one of the following:
 - If using a sensing only Room Unit, the baud rate can be 1200 to 76800. For optimal use with WCIS use **38400**.
 - If using a communicating digital Room Unit, the baud rate must be set to **1200**.
6. Press the **Write** button. The controller accepts the configuration values and then resets.
 - ⇒ When the BACnet MS/TP TEC is successfully installed, the RX and TX LEDs flash On/Off rapidly and continuously (indicating proper communication with other devices on the network).

Auto Discover and Auto Addressing

An improved commissioning workflow has been designed for all BACnet PTEC controllers (standard 66xx applications) along with WCIS (Revision 4.0 and later). This provides the option to use the MS/TP network (using the field panel or a router) and the WCIS tool to discover and auto-address each controller. For more information, see the *WCIS Online Help*.



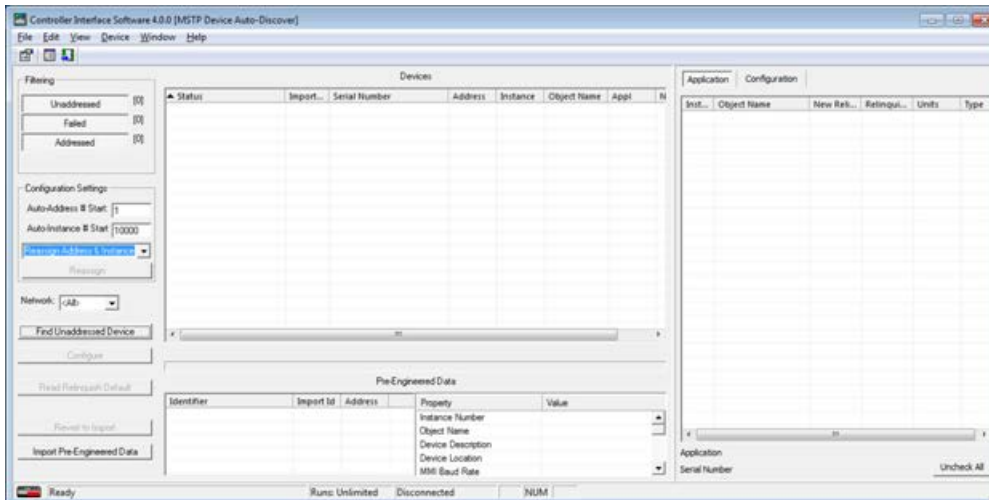
NOTE:

The current workflow will continue to support setting the baud rate and address for each controller using the HMI port or at the room unit.

- ▷ All BACnet PTEC controllers (standard 66xx applications) will have an internal unique serial number and a two part serial number label.
1. Connect WCIS to the field panel or use a router connected to MS/TP network.
 2. Assign one PTEC a valid address (using the serial number). This will establish and set the baud rate for the entire network.

Auto Discovery allows you to automatically discover and identify PTEC controller devices on the BACnet MS/TP Network. There are two basic configurations:

- Devices not configured with an address. (Devices are discovered by their unique serial number.)
- Devices configured with an address and available for modification.



Filtering

These buttons allow you to select what you see in the Auto-discovery window. All three buttons are selected by default.

- **Unaddressed** - Displays unaddressed devices
- **Failed** - Displays failed devices
- **Addressed** - Displays addressed devices

Configuration Settings

- **Auto Address # Start** - Beginning address number. An address is reserved for each discovered device starting with this number.
- **Auto Instance # Start** - Beginning instance number. An instance number is reserved for each discovered device starting with this number.
- **Reassign Address and Instance** (pull-down menu) - Reassigns the address and instance number of the selected device(s).
- **Reassign Address Only** (pull-down menu) - Reassigns the address of the selected device(s).
- **Reassign Instance Only** (pull-down menu) - Reassigns the instance of the selected device(s).

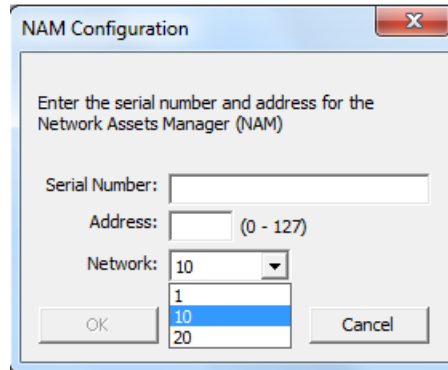
Auto-Discovery

- **Network** (pull-down menu) - Allows you to enter or select a specific network, if multiple networks are available.
- **Find Unaddressed Device** - Searches the connected network for all devices (addressed and unaddressed).
- **Configure** - Sends modified application data to the controller(s).
- **Relinquish Default** - Refreshes relinquish default column of the Application tab with values from the controller.
- **Revert to Import** - Returns to Pre-Engineered Data after changes have been made.
- **Import Pre-Engineered Data** - A .csv file can be used to set initial values in the controller. The file can be taken from Commissioning Tool or exported from Excel. See Commissioning a Controller [→ 21].

Auto-Discovery Procedure

- Click **Find Unaddressed Device**.

⇒ If a NAM device is not defined, the **NAM Configuration** window displays. (NAM - Network Asset Manager; All new TECs can be assigned as a NAM.)



The NAM Configuration dialog box is titled "NAM Configuration" and contains the following fields and controls:

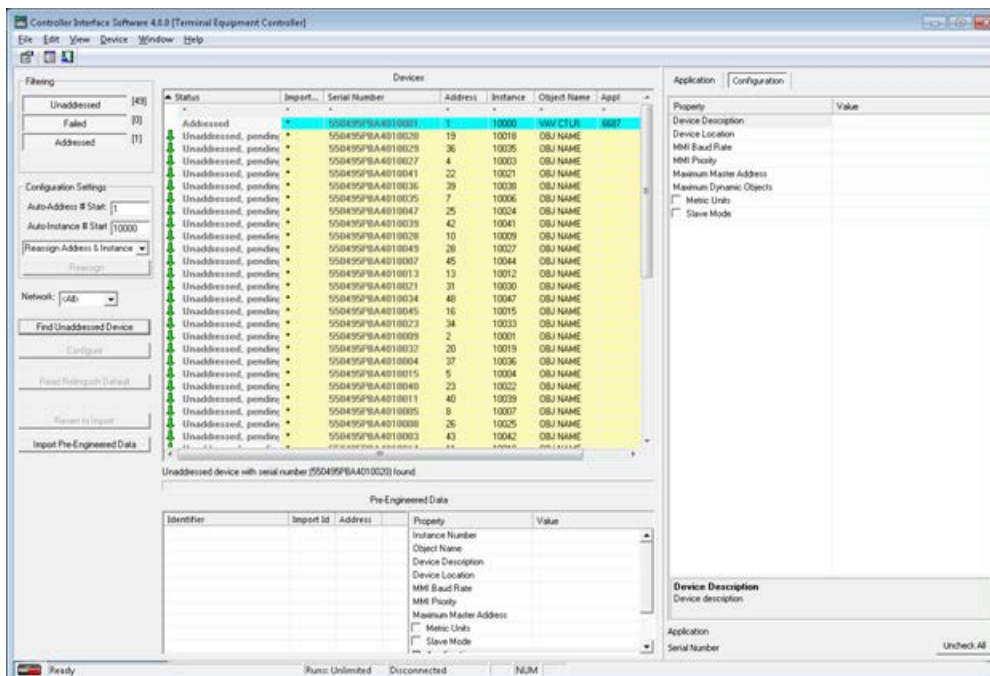
- Text input for "Serial Number:"
- Text input for "Address:" with a range "(0 - 127)"
- Dropdown menu for "Network:" with a list showing 1, 10, and 20.
- "OK" and "Cancel" buttons.

- Enter the serial number (found on print from electrician).
- Enter a unique (unused) address (0 - 127).
- Click **OK**.

⇒ The device will be assigned as the NAM for the network with the address you specified.

⇒ The NAM device will auto-discover all other devices on the network.

⇒ WCIS will display all devices.



Configuring discovered devices

Each device on the network must have unique identifiers in the following fields:

- Address

- Instance
 - Object Name - 30 alphanumeric character limit for Siemens field panels.
1. To change any of these fields, click in that field and enter the desired value.

Status	Import...	Serial Number	Address	Instance	Object Name	Appl
Addressed, pending	*	550439PBA4010001	1	10000	VAV CTLR	
Unaddressed, pending	*	550439PBA4010026	19	10018	OBJ NAME	
Unaddressed, pending	*	550439PBA4010025	36	10035	OBJ NAME	
Unaddressed, pending	*	550439PBA4010027	4	10003	OBJ NAME	
Unaddressed, pending	*	550439PBA4010041	22	10021	OBJ NAME	
Unaddressed, pending	*	550439PBA4010036	39	10038	OBJ NAME	
Unaddressed, pending	*	550439PBA4010035	7	10006	OBJ NAME	
Unaddressed, pending	*	550439PBA4010047	25	10024	OBJ NAME	
Unaddressed, pending	*	550439PBA4010039	42	10041	OBJ NAME	
Unaddressed, pending	*	550439PBA4010028	10	10002	OBJ NAME	

2. When all fields are defined, click **Configure**.

Status	Import...	Serial Number	Address	Instance	Object Name	Appl
Addressed, pending	*	550439PBA4010001	1	10000	VAV CTLR	
Unaddressed, pending	*	550439PBA4010026	19	10018	OBJ NAME	
Unaddressed, pending	*	550439PBA4010025	36	10035	OBJ NAME	
Unaddressed, pending	*	550439PBA4010027	4	10003	OBJ NAME	
Unaddressed, pending	*	550439PBA4010041	22	10021	OBJ NAME	
Unaddressed, pending	*	550439PBA4010036	39	10038	OBJ NAME	
Unaddressed, pending	*	550439PBA4010035	7	10006	OBJ NAME	
Unaddressed, pending	*	550439PBA4010047	25	10024	OBJ NAME	
Unaddressed, pending	*	550439PBA4010039	42	10041	OBJ NAME	
Unaddressed, pending	*	550439PBA4010028	10	10002	OBJ NAME	

- ⇒ All devices defined properly will display **Addressed**.
- ⇒ If a device has not been defined properly, it will display **Unaddressed** and the problem field displays red text.

Status	Import...	Serial Number	Address	Instance	Object Name	Appl
Addressed, pending	*	550439PBA4010001	1	10000	VAV CTLR	
Addressed, failed	*	550439PBA4010026	19	10018	TEC RMS FLR1	
Unaddressed, pending	*	550439PBA4010025	36	10035	OBJ NAME	
Unaddressed, pending	*	550439PBA4010027	4	10003	OBJ NAME	

3. Correct any issues and click **Configure**.

Commissioning a Controller

Learning the Application Point Team

Once a device has been addressed, select your application.

- Do one of the following:
 - Right-click in the **Application** column and select the desired Application from the menu.
 - Click **Configure** to load the device for your application.
 - Right-click on the controller and select **Learn Point Team Descriptor**.

Import Data

1. Click the **Import Data** button.
 - ⇒ The **Import Configuration Data** dialog box displays.
2. Browse to the desired .csv file and click **Open**.
 - ⇒ The imported files are listed in the **Pre-Engineered Data** section of the Auto-Discovery window.

Each line in the window is a grouping of data for a controller.

Assigning Import Data to controller.

1. Click in the **Import ID** column of the desired controller in the devices section.
 2. Select the appropriate **Import ID number** of the Pre-Engineered Data you want to assign.
- ⇒ The Application and Configuration tabs will update with the new (Pre-Engineered) data. You can manually change/update any data.

Assigning Import Data to Multiple Controllers

1. Click on the desired **Import Data** from the list in the Pre-Engineered Data section.
 2. Select all desired controllers in the Devices window.
 3. Right-click the selection in the Devices window and then select **Assign Import Data from Import ID x** in the pop-menu.
 4. Click **Configure**.
- ⇒ The Application will load into each controller selected. The Application and Configuration tabs will update with the new (Pre-Engineered) data.

Commissioning Multiple Controllers

If you're commissioning multiple controllers with the same application all values can be loaded to each controller selected.

You can multi-select by holding either the SHIFT or CTRL key and clicking on multiple controllers listed.

You can configure values for multiple controllers with different applications by first selecting and making changes to one controller and then selecting all controllers and clicking Configure.



NOTE:

Once you select multiple controllers with different applications the Application tab goes blank. However, WCIS retains all changes and send the data for all selected controllers.



Flashing Controller Firmware

FLT Procedure

Use the Firmware Loading Tool (FLT) for this procedure.

1. Connect to RTS port of PTEC.
2. Set Communications to **1200 baud** and **ID**.
3. Click the **Identify** button in FLT.
4. Browse for new firmware.
5. Select **Load**.

WCIS Procedure

1. Connect to device.
2. From the **Device** menu, select, **Load TEC Firmware**.
⇒ The **Load TEC Firmware** dialog box displays.
3. Click the **Browse** button.
4. Select the firmware.
5. Select **Load**.

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