SIEMENS

BACnet PTEC

Constant Volume Controller

Owner's Manual

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Building Technologies

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How To Use This Manual

This manual is written for the owner and user of the Siemens BACnet PTEC Constant Volume Controller. It is designed to help you become familiar with the Siemens BACnet PTEC and its applications.

This section covers manual organization, manual conventions, symbols used in the manual, and other information that will help you use this manual.

Manual Organization

This manual contains the following chapters:

- *Chapter 1 - Hardware,* describes the hardware components and the accessories that are used with the BACnet PTEC.
- *Chapter 2 - Applications,* describes the control applications available in the model of the BACnet PTEC that includes a terminal block for wireable input/output connections.
- *Chapter 3 - Point Database,* defines the point database descriptors and includes address and applications.
- *Chapter 4 - Troubleshooting,* describes basic corrective measures you can take should you encounter a problem when using the BACnet PTEC. For issues not covered in this chapter, consult your local Siemens Industry representative.
- The *Glossary* describes the terms and acronyms used in this manual.
- The *Index* helps you locate information presented in this manual.

Manual Conventions

The following table lists conventions to help you use this manual in a quick and efficient manner.

Convention	Examples
Numbered Lists (1, 2, 3…) indicate a procedure with sequential steps.	1. Turn OFF power to the field panel. 2. Turn ON power to the field panel. 3. Contact the local Siemens Industry representative.
Conditions that must be completed or met before beginning a task are designated with a ▹. Intermediate results (what will happen following the execution of a step), are designated with a ⇨. Results, which inform the user that a task was completed successfully, are designated with a ⇨.	▹Composer software is properly installed. ▹A Valid license is available. 1. Select **Start** > **Programs** > **Siemens** > **GMS** > **Composer**. ⇨The Project Management window displays. 2. Open an existing project or create a new one. ⇨The project window displays.
Actions that should be performed are specified in boldface font.	Type **F** for Field panels. Click **OK** to save changes and close the dialog box.
Error and system messages are	The message `Report Definition`

Convention	Examples
displayed in Courier New font.	`successfully renamed` displays in the status bar.
New terms appearing for the first time are italicized.	The field panel continuously executes a user-defined set of instructions called the *control program*.
	This symbol signifies Notes. Notes provide additional information or helpful hints.
Cross references to other information are indicated with an arrow and the page number, enclosed in brackets: [→92]	For more information on creating flowcharts, see Flowcharts [→92].

Manual Symbols

The following table lists the safety symbols used in this manual to draw attention to important information.

Symbol	Meaning	Description
NOTICE	CAUTION	Equipment damage may occur if a procedure or instruction is not followed as specified. (For online documentation, the NOTICE displays in white with a blue background.)
	CAUTION	Minor or moderate injury may occur if a procedure or instruction is not followed as specified.
	WARNING	Personal injury or property damage may occur if a procedure or instruction is not followed as specified.
	DANGER	Electric shock, death, or severe property damage may occur if a procedure or instruction is not followed as specified.

Getting Help

For more information about the Siemens BACnet PTEC Constant Volume Controller, contact your local Siemens Industry representative.

Where to Send Comments

Your feedback is important to us. If you have comments about this manual, please submit them to SBT_technical.editor.us.sbt@siemens.com

Chapter 1 – Product Overview

The Siemens BACnet PTEC Constant Volume Controller is the Siemens Industry FLN controller used in pressure independent Variable Air Volume applications. It provides Direct Digital Control (DDC) for a number of applications.

- The controller can operate as an independent, stand-alone, DDC room controller or it can be networked with a field panel.
- The controller provides all termination, input/output, system and local communication connections.
- The controller hardware consists of the controller with cover and mounting bracket (See Figure Siemens BACnet PTEC Constant Volume Controller).

The following applications are covered:

- Slave Mode (Application 6594)
- Constant Volume Cooling Only (Application 6560)
- Constant Volume with Electric Reheat (Application 6562)
- Constant Volume with Hot Water Reheat (Application 6563)
- Slave Mode (Application 6594)

Hardware Inputs

Analog

- Air velocity sensor
- Room temperature sensor
- Room temperature setpoint dial (optional)

Application 6560 supports a room temperature sensor for monitoring purposes only.

Digital

- Night mode override (optional)
- Wall switch (optional)

Hardware Outputs

Analog

- None

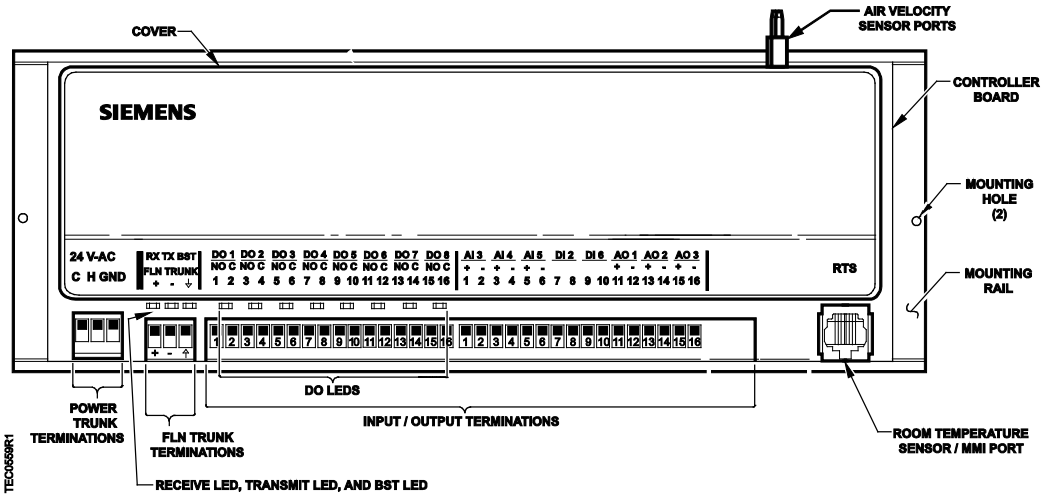
Digital

• Damper Actuator	All
• Autozero Modules	All

- Stage 1 electric heat or 2-position heating valve — Application 6562
- Stage 2 electric heat (optional) — Application 6562
- Stage 3 electric heat (optional) — Application 6562
- Valve actuator (optional) — Application 6563

Ordering Notes

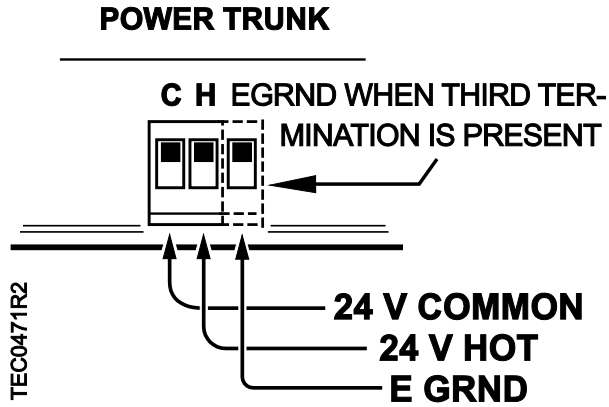
Siemens BACnet PTEC Constant Volume Controller 550-498P



Siemens BACnet PTEC Constant Volume Controller.

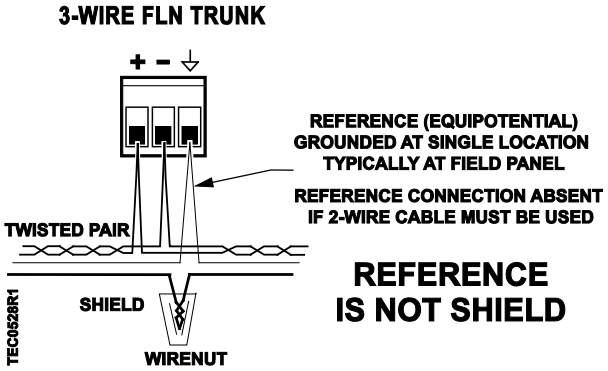
Power Wiring

The controller is powered by 24 Vac. Power wiring connects to the three screw terminals on the controller board labeled “C” (Common), “H” (Hot), and “E” (Earth Ground) on the terminal block labeled “24 Vac”.



Communication Wiring

The controller connects to the field panel by means of a Floor Level Network (FLN) trunk. Communication wiring connects to the three screw terminals on the controller labeled “+” (positive), “-“ (negative), and “⏚” (Reference ground or “Equipontential”).



Controller LED Indicators

The controller has eleven Light Emitting Diode (LED) indicators (see Figure Siemens BACnet PTEC Constant Volume Controller). Table *Controller LEDs* lists the type, the abbreviation on the controller, and the indication of each LED.

Controller LEDs.			
LED Type	**Label (if present)***	**LED Number**	**Indication**
DO	DO1 - DO8	1 – 8	Indicates the ON/OFF status of the DO associated with it. A glowing LED indicates that the DO is energized.
Receive	RX	9	Indicates, when flashing, that the controller is receiving information from the field panel.
Transmit	TX	10	Indicates, when flashing, that the controller is transmitting information to the field panel.
BST ”Basic Sanity Test”	BST	11	Indicates, when flashing ON and OFF once per second, that the controller is functioning properly.

Temperature Sensors

Temperature sensors used with the Siemens BACnet PTEC Constant Volume Controller include an electronic room temperature sensor and an optional duct temperature sensor.

Room Temperature Sensor

The controller room temperature sensor connects to the controller by means of a cable terminated at both ends with a six-conductor RJ-11 plug-in connector.

See the Ordering Notes section for the location of the room temperature sensor/Human Machine Interface (HMI) port.

Actuators

Actuators used with the Siemens BACnet PTEC Constant Volume Controller include electronic damper motors, electronic valve motors, and electronic valve assemblies. These actuators are powered through the controller to position reheat valves or supply air dampers.

Related Equipment

- Autozero Module (optional)
- Damper Actuator(s)
- Room Temperature Sensor
- Valve Actuator(s)

Contact your local Siemens Industry representative for product numbers and more information.

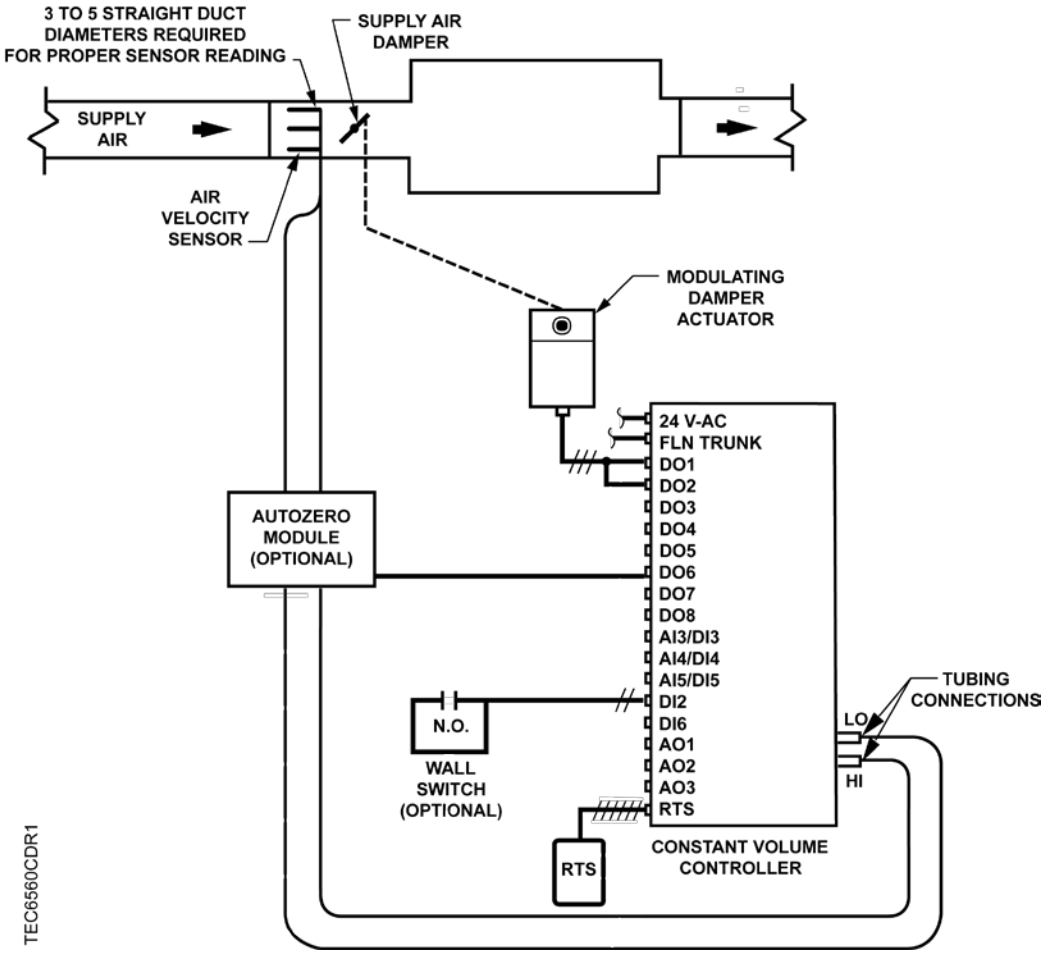
Chapter 2 – Applications

Basic Operation

The Siemens BACnet PTEC Constant Volume Controller provides Direct Digital Control (DDC) technology for pressure independent Constant Air Volume (CAV) applications.

Application 6560 Constant Volume Cooling Only

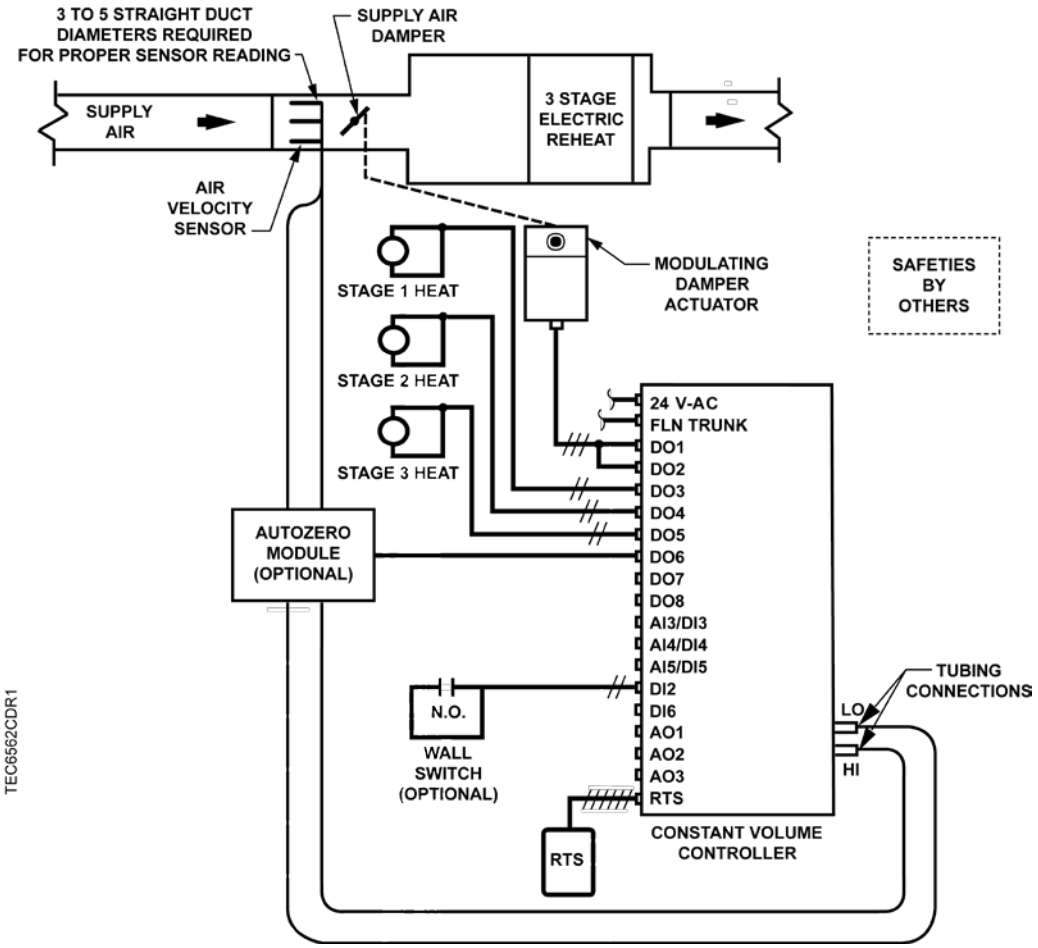
In Application 6560, the controller provides a constant volume of air to the room during occupied periods, and a lower constant volume of air to the room during unoccupied periods.



Application 6560 – Constant Volume Cooling Only.

Application 6562 Constant Volume with Electric Reheat

In Application 6562, the controller provides a constant volume of air to the room during occupied periods, and a lower constant volume of air to the room during unoccupied periods. Reheat is provided by three stages of electric heat. In order for the application to work properly, the central air handling unit must provide pre-conditioned air to the terminal box.



Application 6562 – Constant Volume with Electric Reheat.

Electric Heat Interlock

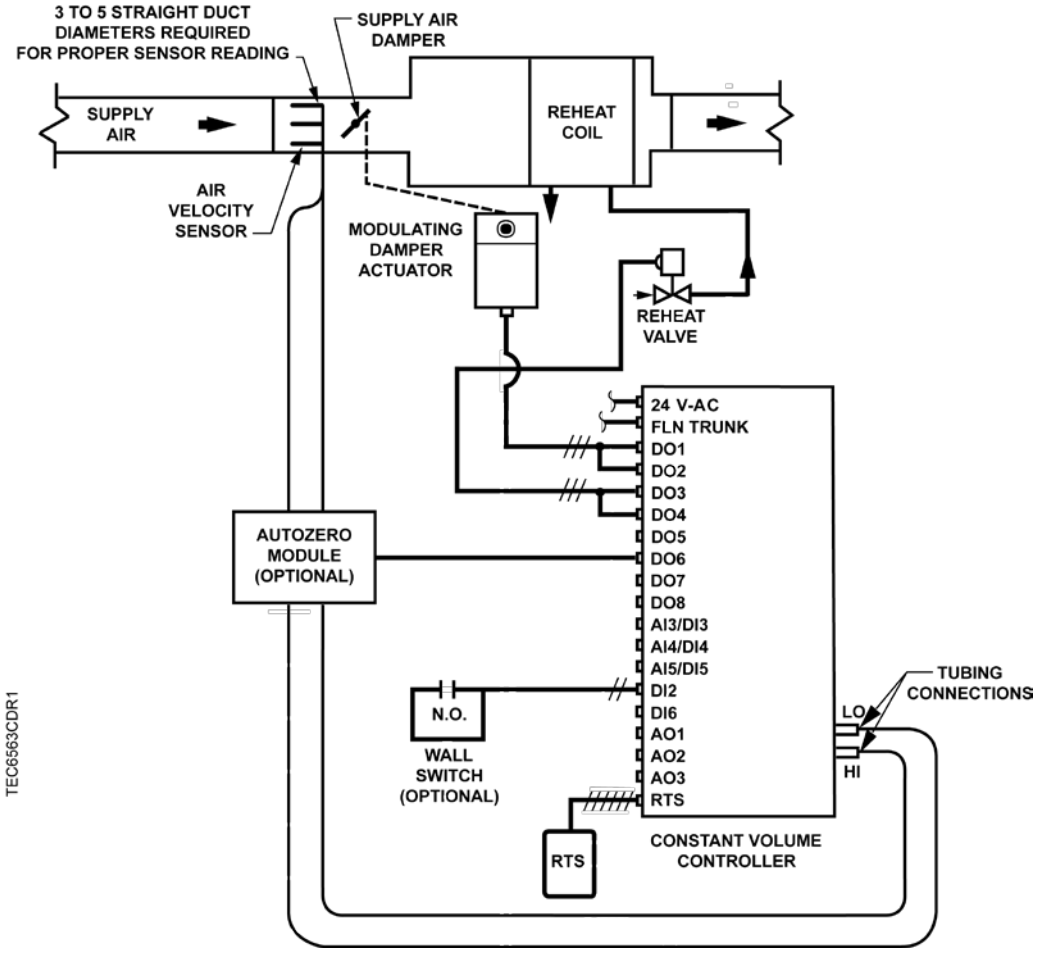
Terminal unit heat stages:

The electric heat stages will be enabled as long as FLOW > EHEAT FLOW. The electric heat stages will not be disabled (turned OFF) until FLOW < EHEAT FLOW - 5%. Once disabled, FLOW must become greater than EHEAT FLOW before the electric heat stages will return to normal control.

	⚠ CAUTION
	Do not set EHEAT FLOW to less than 5%; otherwise, the electric heat interlock will be disabled.

Application 6563 Constant Volume with Hot Water Reheat

In Application 6563, the controller provides a constant volume of air to the room during occupied periods, and a lower constant volume of air to the room during unoccupied periods. Reheat is provided by modulating a hot water valve. In order for the application to work properly, the central air handling unit must provide pre-conditioned air to the terminal box.



Application 6563 – Constant Volume with Hot Water Reheat.

Application 6594 Slave Mode

Application 6594 is the slave mode application for the BACnet PTEC (see Ordering Notes for product numbers). Slave mode is the default application that comes up when power is first applied to the controller. Slave mode provides no control. Its purpose is to allow the operator to perform equipment checkout before a control application is put into effect and to set some basic controller parameters (CTLR ADDRESS, APPLICATION, etc.).

Chapter 3 – Point Database

Chapter 3 presents a description of the Siemens BACnet PTEC Constant Volume Controller point database, including point descriptors, point addresses, and a listing of applications in which each point is found.

Descriptor	Address[1]	Application	Description
CTLR ADDRESS	01	All	Identifies the controller on the LAN trunk.
APPLICATION	02	All	Identification number of the program running in the controller.
ROOM TEMP	{04}[2]	All	Actual reading from the room temperature sensor.
HEAT.COOL	{05}	6562, 6563	Current mode of operation for applications that can be in either a heating mode or a cooling mode.
OCC CLG STPT	06	6562, 6563	The temperature setpoint, in degrees, that the controller maintains during occupied periods in cooling mode if a room temperature sensor setpoint dial is not present or is not used. See *STPT DIAL*.
OCC HTG STPT	07	6562, 6563	The temperature setpoint, in degrees, that the controller maintains during occupied periods in heating mode if a room temperature sensor setpoint dial is not present or is not used. See *STPT DIAL*.
UOC CLG STPT	08	6562, 6563	The temperature setpoint in degrees that the controller maintains during the unoccupied periods in cooling mode.
UOC HTG STPT	09	6562, 6563	The temperature setpoint in degrees that the controller maintains during the unoccupied periods in heating mode.
OCC HTG STPT	09	6565-6566	The temperature setpoint, in degrees, that the controller maintains during unoccupied periods in heating mode.
RM STPT MIN	11	6562, 6563	The minimum temperature setpoint, in degrees, that the controller can use from the setpoint dial. This overrides any temperature set point from the set point dial that falls below this minimum.
RM STPT MAX	12	6562, 6563	The maximum temperature setpoint in degrees that the controller can use from the setpoint dial. This overrides any temperature setpoint from the setpoint dial that falls above this maximum.
RM STPT DIAL	{13}[2]	6562, 6563, 6594	The temperature setpoint in degrees from the room temperature sensor (not available on all temperature sensor models). This setpoint will be used for control in day mode (heating or cooling) when enabled by STPT DIAL.
STPT DIAL	14	6562, 6563	YES indicates that there is a room setpoint dial on the room temperature sensor and it should be used as the temperature setpoint for control in day/occupied mode. NO indicates that the appropriate preset setpoint will be used as the temperature setpoint for control in day/occupied heating or cooling mode. Valid input: YES or NO.

Descriptor	Address[1]	Application	Description
AUX TEMP	{15}	All	Actual reading from a 100K thermistor connected to the controller's AI 3 input. When a thermistor is connected at AI 3, DI 3 is not available. See *DI 3*.
HTG DUCTTEMP	15	6569	Actual reading from a 100K thermistor located in the hot duct connected to the controller's AI 3 input. When a thermistor is connected at AI 3, DI 3 is not available. See *DI 3*.
WALL SWITCH	18	All	YES indicates that the controller is to monitor the status of a wall switch that is connected to UI 2. NO indicates that the controller will not monitor the status of a wall switch, even if one is connected. Valid input: YES or NO.
DI OVRD SW	{19}[2]	All	Actual indication of the status of the override switch (not physically available on all temperature sensor models) at the room temperature sensor. ON indicates that the switch is being pressed. OFF indicates that the switch is released. Valid input: ON or OFF.
OVRD TIME	20	All except 6594	The amount of time in hours that the controller will operate in day/occupied mode when the override switch is pressed while the controller is in unoccupied mode.
UNOCC OVRD	{21}	All except 6594	Indicates the mode that the controller is operating in with respect to the override switch. UNOCC indicates that the switch has not been pressed and the override timer is not active. OCC indicates that the switch has been pressed and the override timer is active. The controller then uses an occupied mode temperature set point. This point is only in effect when OCC.UNOCC indicates UNOCC mode.
DI 2	{24}	All	Actual status of a contact connected to the controller at DI 2 (screw terminals 15 and 16). ON indicates that the contact is closed; OFF indicates that the contact is open. If a wall switch is used, it is connected to DI 2. See *LIGHT SWITCH*.
DI 3	{25}[2]	All	Actual status of a contact connected to the controller at DI 3/AI 3 (screw terminals 13 and 14). ON indicates that the contact is closed; OFF indicates that the contact is open. When a contact is connected at DI 3, AI 3 is not available. See *AUX TEMP*.
OCC.UNOCC	{29}	All	Indicates the mode in which the controller is operating. Occupied temperature setpoints will be used in OCC mode. Unoccupied temperature setpoints will be used in UNOCC mode. This point is normally set by the field panel.
UNOCC FLOW	{31}	All except 6594	The amount of air in CFM (LPS) to be supplied to the space during unoccupied periods.
OCC FLOW	{32}	All except 6594	The amount of air in CFM (LPS) to be supplied to the space during occupied periods.
AIR VOLUME	{35}	All	Actual amount of air in CFM (LPS) currently passing through the air velocity sensor.
FLOW COEFF	36	All	Calibration factor for airflow.

Descriptor	Address[1]	Application	Description
FAIL MODE	40	All except 6594	Indicates the desired position of the dampers if the airflow sensor(s) fail. Valid input: CLOSED or OPEN.
DO 1	{41}	All	Digital output 1 controls a 24 Vac load with an ON or OFF status. If Motor 1 is enabled, then DO 1 is coupled with DO 2 to control an actuator.
DO 2	{42}	All	Digital output 2 controls a 24 Vac load with an ON or OFF status. If Motor 1 is enabled, then DO 2 is coupled with DO 1 to control an actuator.
DO 3	{43}	All except 6594	Digital output 3 controls a 24 Vac load with an ON or OFF status. If Motor 2 is enabled, then DO 3 is coupled with DO 4 to control an actuator.
HEAT STAGE 1	{43}	6562	This point is DO 3 in applications with electric reheat. This output controls the contactor for the first heating stage and has a status of ON or OFF.
DO 4	{44}[2]	All except 6562	Digital output 4 controls a 24 Vac load with an ON or OFF status. If Motor 2 is enabled, then DO 4 is coupled with DO 3 to control an actuator.
HEAT STAGE 2	{44}	6562	This point is DO 4 in applications with electric reheat. This output controls the contactor for the second heating stage and has a status of ON or OFF.
DO 5	{45}	All except 6562	Digital output 5 controls a 24 Vac load with an ON or OFF status. If Motor 3 is used, this point is coupled with DO 6 (6594 only).
HEAT STAGE 3	{45}	6562	This point is DO 5 in applications with electric reheat. This output controls the contactor for the third heating stage and has a status of ON or OFF.
DO 6	{46}	All	Digital output 6 controls a 24 Vac load with an ON or OFF status. If Motor 3 is used, this point is coupled with DO 5.
DMPR COMD	{48}	All except 6594	The value to which the cold duct damper motor is commanded in percent of full travel.
MTR1 COMD	{48}	6594	The value to which the Motor 1 actuator is commanded in percent of full travel.
DMPR POS	{49}	All exceot 6594	The current position of the damper motor in percent of full travel. This value is calculated based on motor run time.
MTR1 POS	{49}	6594	The current position of Motor 1 in percent of full travel. This value is calculated based on motor run time. See *MTR1 TIMING*.
MTR1 TIMING	51	All	The time required for the Motor 1 actuator to travel from full closed to the full open position.
MTR2 COMD	{52}	6594	The value to which the Motor 2 actuator is commanded in percent of full travel (for use as an auxiliary slave point).

Descriptor	Address[1]	Application	Description
VLV COMD	{52}	6563	The value to which the valve actuator is commanded in percent of full travel for applications using a water valve.
MTR2 POS	{53}[2]	6560, 6594	The current position of the Motor 2 actuator in percent of full travel (for use as an auxiliary slave point). This value is calculated based on motor run time. See *MTR2 TIMING*.
VLV POS	{53}	6533	The current position of the valve in percent of full travel for applications using a water valve. This value is calculated based on motor run time.
MTR2 TIMING	55	All except 6562	The time required for the Motor 2 actuator to travel from full closed to the full open position.
DPR1 ROT ANG	56	All	The number of degrees that damper 1 is free to travel.
DPR2 ROT ANG	57	6560, 6594	The number of degrees that damper 2, the hot duct damper, is free to travel.
MTR SETUP	58	All	The configuration setup code for Motors 1 and 2. This enables the motors individually and sets each motor to be either direct or reverse acting. **Note:** When a motor is enabled, its associated DOs are enabled.
DO DIR.REV	59	All	The configuration setup code for DOs. Allows the DOs to be direct or reverse acting (enabled equals energized or disabled equals de-energized).
EHEAT FLOW	60	6563	Area, in square feet (square meters), of duct 2 where the air velocity sensor is located. This value is calculated by the portable operator's terminal or by the field panel depending on duct shape and size. It is used in calculating all points in units of CFM, CF, LPS, and L.
HTG P GAIN	67	6562, 6563	The proportional gain value for the heating temperature control loop.
HTG I GAIN	68	6562, 6563	The integral gain value for the heating temperature control loop.
HTG D GAIN	69	6562, 6563	The derivative gain value for the heating temperature control loop.
HTG BIAS	70	6562, 6563	The biasing of the heating temperature control loop.
FLOW P GAIN	71	All except 6562	The proportional gain value for the cooling flow control loop.
FLOW I GAIN	72	All except 6562	The integral gain value for the cooling flow control loop.
FLOW D GAIN	73	All except 6562	The derivative gain value for the cooling flow control loop.
FLOW BIAS	74	All except 6592	The flow loop bias value.
FLOW	{75}[2]	All except 6592	Indicates the actual amount of air currently passing the air velocity sensor. The value is calculated as a percentage based on where AIR VOLUME is between CTL FLOW MIN

Descriptor	Address[1]	Application	Description
			and CTL FLOW MAX. If AIR VOLUME = CTL FLOW MIN, then FLOW will be 0%.If AIR VOLUME = CTL FLOW MAX, then FLOW will be 100%.
CTL TEMP	78	All except 6594	The temperature used as input for the temperature control loops. This value will be the same as the value in ROOM TEMP, unless it is overridden.
HTG LOOPOUT	80	6562, 6563	The heating temperature control loop output value in percent.
AVG HEAT OUT	{81}	6562	This point is used to determine what stages of electric heat are used for a given loop output value. The ranges for the value are determined by the number of stages used: 0 to 100 for 1 stage of electric heat, 0 to 200 for 2 stages of electric heat, and 0 to 300 for 3 stages of electric heat. With electric heat, this value is equal to: HTG LOOPOUT × STAGE COUNT.
STAGE MAX	82	6562	The value in percent that the heating loop (HTG LOOPOUT) must exceed for the electric heat to be ON for the full duty cycle (STAGE TIME).
STAGE MIN	83	6562	The value in percent that the heating loop (HTG LOOPOUT) must go below for the electric heat to be OFF for the full duty cycle (STAGE TIME).
DMPR STATUS	{84}[2]	All except 6562	This point is used only when CAL MODULE is set to YES. It readjusts the damper position if the command value is not equal to the actual position of the damper. CAL indicates that the damper is operating normally. RECAL indicates that the damper position was adjusted (recalibrated) by 25% because the desired airflow was not obtainable under its current status.
CAL MODULE	87	All	Indicates the presence of Autozero Modules at DO 7 and DO 8. YES indicates that Autozero Modules are to be used to calibrate the controller's air velocity transducers. NO indicates that calibration will take place without the Autozero Modules. Valid input: YES or NO.
STAGE COUNT	88	6562	The number of electric heating stages used by the application. DOs associated with unused stages may be used as spare DOs.
STAGE TIME	89	6562	The cycle time in minutes for the electric reheat stages. For example, if there are three stages of electric heat and STAGE TIME = 10 minutes, STAGE COUNT = 3, and AVG HEAT OUT = 150% then, Stage 1 is ON for 10 minutes (100% of the time), Stage 2 is ON for 5 minutes (50% of 10 minutes) and OFF for 5 minutes, and Stage 3 is OFF.
TOTAL VOLUME	{91}	All except 6562	The total amount of air delivered to a space in cubic feet (L) since the last time the point was reset or rolled over.
CTL STPT	{92}	6562, 6563	The actual setpoint value being used as input for the active temperature control loop.

Descriptor	Address[1]	Application	Description
FLOW STPT	{93}	All except 6562	The setpoint of the cooling flow control loop.
CAL AIR	{94}[2]	All	YES commands the controller to go through calibration sequence for the air velocity transducers. YES is also displayed when the calibration sequence is started automatically. CAL AIR automatically returns to NO after the calibration sequence is completed. Valid input: YES or NO.
CAL SETUP	95	All	The configuration setup code for the calibration sequence options.
CAL TIMER	96	All	Time interval, in hours, between the calibration sequence initiations if a timed calibration option is selected in CAL SETUP.
DUCT AREA	97	All	Area, in square feet (square meters), of the cooling duct where the air velocity sensor is located. This value is calculated by the portable operator's terminal or by the field panel depending on duct shape and size. It is used in calculating all points in units of CFM, CF, LPS, and L.
LOOP TIME	98	All except 6562	The time, in seconds, between control loop calculations.
ERROR STATUS	99	6560, 6562, 6563	The status code indicating any errors detected during controller power up. A status of 0 indicates there are no problems.
ERROR STATUS	{99}	6594	The status code indicating any errors detected during controller power up. A status of 0 indicates there are no problems.
RM CO2	{125}	All	The value in units of parts-per-million (PPM).
STAT SUPV	126	All	Room unit configuration point, values are additive.
RM RH	127	All	Room humidity when room unit is provided with humidity sensing.

1) Points not listed are not used in this application.

2) Point numbers that appear in brackets { } may be unbundled at the field panel.

Chapter 4 – Troubleshooting

This chapter describes corrective measures you can take should you encounter a problem when using a BACnet PTEC.

You are not required to do any controller troubleshooting. You may want to contact your local Siemens Industry representative if a problem occurs or you have any questions about the controller.

NOTE:
When troubleshooting, record the problem and what actions were performed immediately before the problem occurred. Being able to describe the problem in detail is important should you need assistance from your local Siemens Industry representative.

Basic Service Information

Always remove power to the BACnet PTEC when installing or replacing it. Since the controller does not have a power switch, the recommended method of removing power to a locally powered controller is to turn OFF the power to the 24 Vac transformer. The recommended method of removing power to a controller on a power cable (even to service a single controller) is to turn OFF the power at the transformer.

NOTE:
When removing power to a controller to perform maintenance or service, make sure that the person in charge of the facility is aware of this and that appropriate steps are taken to keep the building in control.

Never remove the cover from the BACnet PTEC. There are no serviceable parts inside. If a problem is found with this device, contact your local Siemens Industry representative for replacement. An anti-static wrist strap is recommended when installing or replacing controllers.

Preventive Maintenance

Most controller components are designed so that, under normal circumstances, they do not require preventive maintenance. Periodic inspections, voltage checks, and point checks are normally not required. The rugged design makes most preventive maintenance unnecessary. However, devices that are exposed to dusty or dirty environments may require periodic cleaning to function properly.

Safety Features

The controller board stores the controller's address, applications, and point values. In the event of a power failure or a reset, these values are retrieved from the controller's permanent memory and are used by the controller unless overridden by a field panel. If one of the following conditions occurs, the controller will activate safety features present in its fail-safe mode.

- Sensor failure.
- Loss of power. Upon controller power loss, communication with the controller is also lost. The controller will appear as failed (*F*) at the field panel.

Controller LEDs

NOTE:
The TX and RX LEDs indicate communication over the FLN.

To determine if the controller is powered up and working, verify that the Basic Sanity Test (BST) Light Emitting Diode (LED) is flashing ON/OFF once per second. The controller contains eleven LEDs located on the circuit board. See the Controller LED Indicators [→ 8] section of Chapter 1 - Product Overview for more information about LEDs.

Glossary

The glossary contains terms and acronyms that are used in this manual. For definitions of point database descriptors, see Chapter 3 - Point Database, in this manual.

airflow

Rate at which a volume of air moves through a duct. Usually expressed in cubic feet per minute (cfm) or liters per second (lps).

algorithm

Mathematical formula that uses varying inputs to calculate an output value.

AVS

Air Velocity Sensor.

centralized control

Type of control offered by a controller that is connected by means of Field Level Network (FLN).

cfm

Cubic Feet per Minute.

control loop

PID algorithm that is used to control an output that is based on a setpoint and an input reading from a sensor.

DDC

Direct Digital Control.

DO

Digital Output. Physical output point that sends a two-state signal (ON/OFF, OPEN/CLOSED, YES/NO).

English units

The foot-pound-second system of units for weights and measurements.

equipment controller

FLN device that provides additional point capacity to a field panel or provides individual room or mechanical equipment control.

field panel

A device containing a microprocessor for centralized control of system components and equipment controllers.

FLN

Field Level Network. Network consisting of equipment controllers, FLN end devices, fume hoods, etc.

lps

Liters per Second.

loopout

Output of the control loop expressed as a percentage.

HMI

Human Machine Interface. Terminal and its interface program that allows you to communicate with a field panel or equipment controller.

override switch

Button on a room temperature sensor that an occupant can press to change the status of a room from unoccupied to occupied (or from night to day) for a predetermined time.

pressure independent

Variable Air Volume (VAV) room temperature control system in which the temperature drives an airflow setpoint.

PID

Proportional, Integral, Derivative.

RTS

Room Temperature Sensor.

setpoint

Virtual point that stores a point value such as a temperature setting. Points that monitor inputs, such as temperature, report actual values.

SI units

Systeme International d'Unites. The international metric system.

slave mode

Default application that displays when power is first applied to an equipment controller. No control action is initiated in the slave mode.

stand-alone control

Type of control offered by a controller that is providing independent DDC control to a space.

Terminal Equipment Controller

Siemens Industry, Inc. product family of equipment controllers (one is the Siemens BACnet PTEC Constant Volume Controller) that house the applications software used to control terminal units, such as heat pumps, VAV terminal boxes, fan coil units, unit ventilators, etc.

UI

Universal Input. Can be used as an AI or DI. An AI input is a point receiving a signal that represents a condition that has more than two states. A DI input is a physical input point that receives a two-state signal.

unbundle

Term used to describe the entering of a point that resides in a controller's database into the field panel's database so that it can be monitored and controlled from the field panel.

VAV

Variable air volume. Ventilation system that changes the amount of air supplied to and exhausted from the rooms served.

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