

MANUAL – INSTALLATION + SERVICE

Pressure Control Valve

PCV Series

v500 – Issue Date: 02/09/23 - 020023-014

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PRICE[®]

PRESSURE CONTROL VALVE

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SUPPORT ▼

Having difficulty installing this product? Price is here to help.

Application Support

204.654.5613

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PRESSURE CONTROL VALVE

PRODUCT OVERVIEW

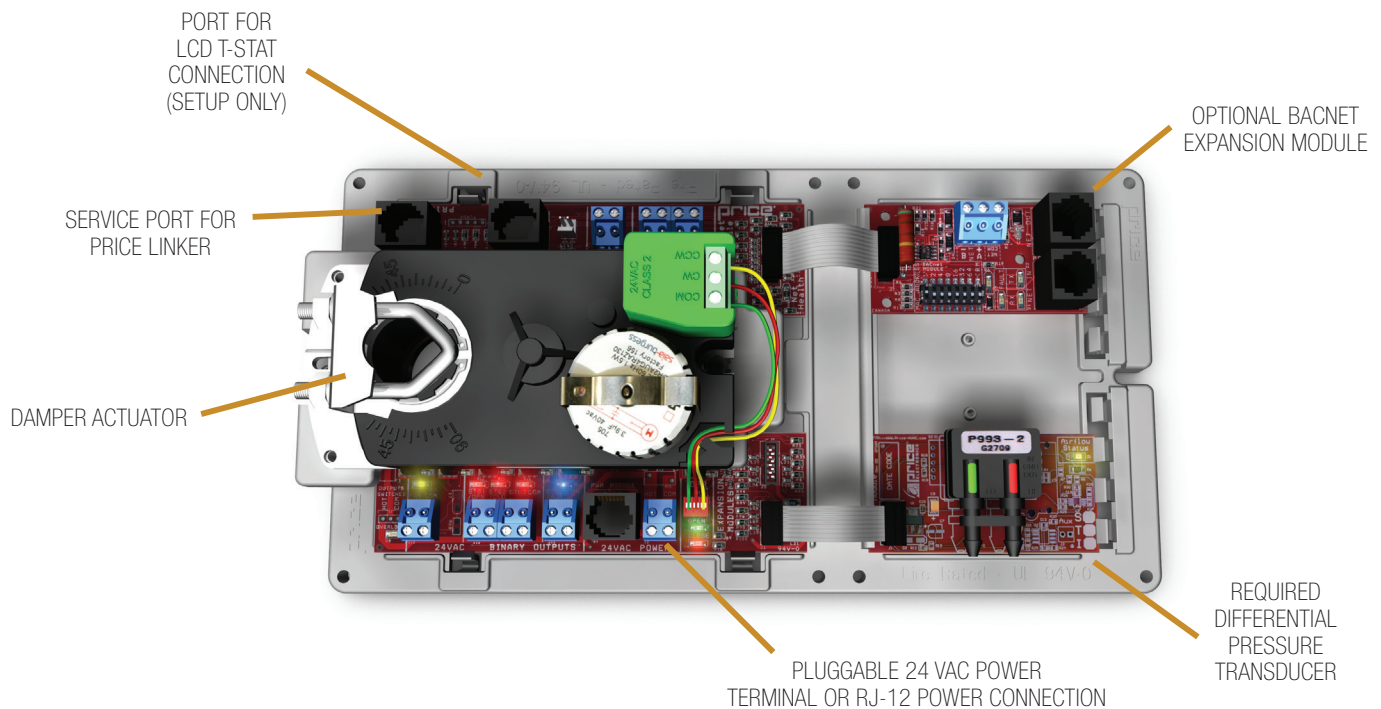
General

PCV - Pressure Control Valve

The Pressure Control Valve (PCV) is a device that controls duct static pressure. The PCV can be setup for bypass control or for downstream throttling control.

- Bypass control maintains a constant supply duct pressure by redirecting the air that's not required to go into the zones at that time from the supply duct to the return duct. In the bypass arrangement as static pressure in the supply duct begins to rise, the damper opens to alleviate the excess pressure to the return. Returns can be open plenum, or ducted.
- Downstream throttling control is typically used to control static pressure in a branch or portion of a system where a lower static pressure is desired with respect to the rest of the system. In these arrangements, there is already a bypass or VFD maintaining the overall system static. The PCV maintains the static pressure in the branch it's controlling by holding back air that is not required to go into the zones it's serving. As the static pressure begins to rise, the damper begins to close to hold back excess pressure where the system bypass or VFD would take care of it.

PCV CONTROLLER FEATURES ▼



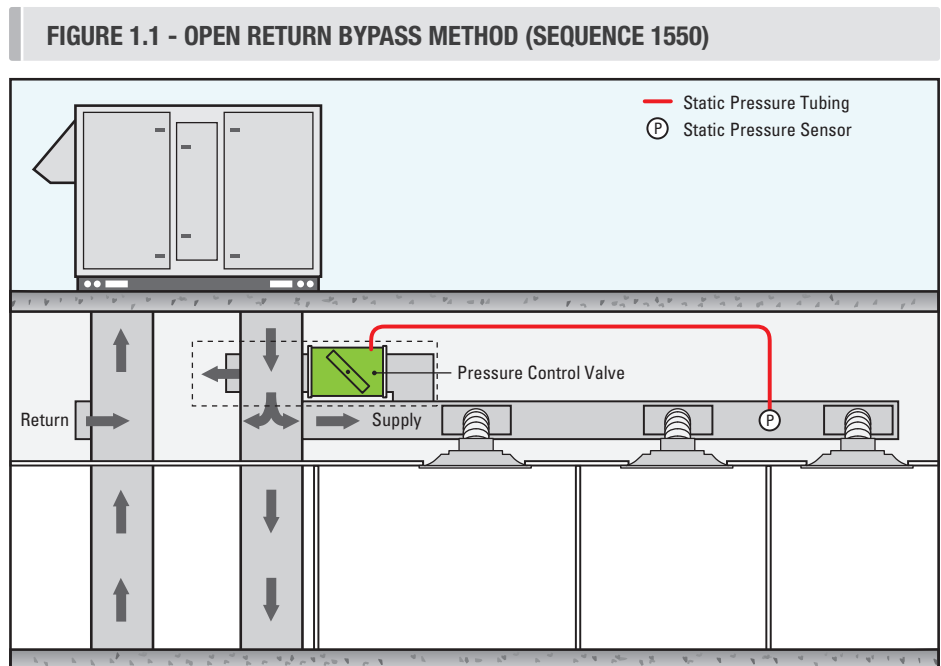
PRESSURE CONTROL VALVE

PRODUCT OVERVIEW

Pressure Control Methods

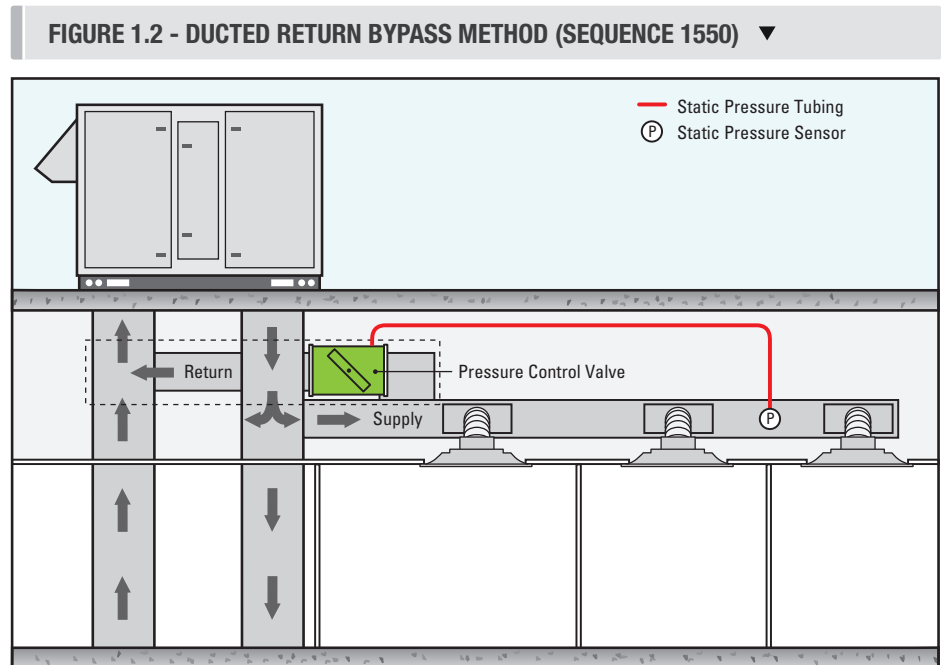
Open Return Bypass Method

In the case of an “open return” system, the duct work is ducted so that the return side of the PCV (pressure controller) is open to the plenum. (See **Figure 1.1**) This means that the air will get bypassed through the PCV and then into the ceiling plenum. This type of system is quite common and easier to duct.



Ducted Return Bypass Method

In the case of a ducted return system, the duct work would be ducted so that the return side of the PCV (pressure controller) is ducted back to the unit, either the rooftop unit or the air handler. (See **Figure 1.2**) This means that the air will get bypassed through the PCV and then back into the unit. One thing to consider in this type of ducting method is that this could cause the coils in the air handling unit to freeze up if too much air is returned at a very low temperature or similarly in heating mode too much warm return air could trip the heat high temp limits. The air handler should be fitted with a low temp cutout for cases like this to prevent the coils from freezing.



PRESSURE CONTROL VALVE

PRODUCT OVERVIEW

Pressure Control Methods

Throttling Method

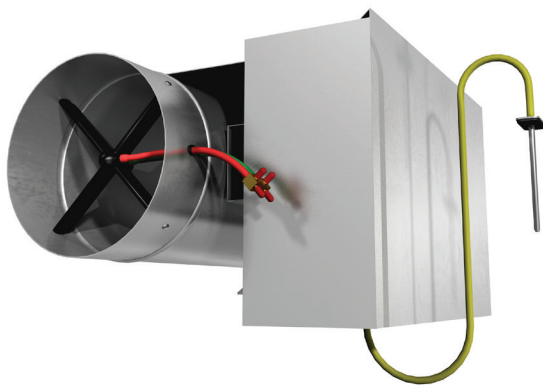
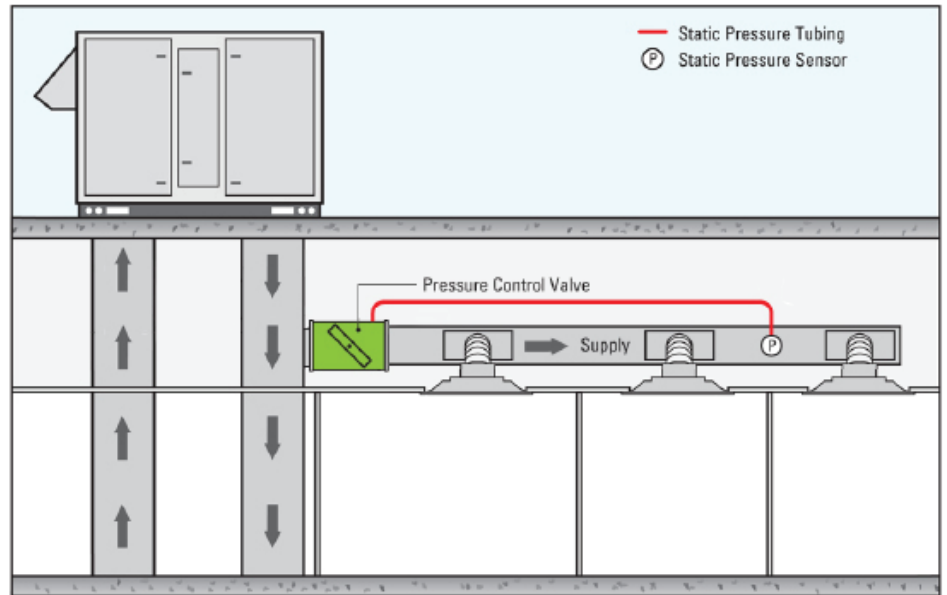
Throttling applications are used to isolate low pressure branches of ductwork from the rest of a system operating at a higher duct static pressure. Usually these branches serve VAV diffusers which require a much lower inlet static pressure compared to traditional VAV terminal units due to the noise higher than recommended pressures due to the noise generated by higher than recommended inlet static pressure.

Throttling applications work by using the PCV to hold back excess pressure from the system to the low pressure branch it is isolating. This means that as pressure

because of VAV diffusers modulating closed, the PCV damper begins to close to limit airflow into the downstream duct. When the VAV diffusers begin to open to more allow airflow out of the duct and into the occupied space, the pressure in the duct will begin to drop, and the PCV damper will begin to open to maintain a constant duct pressure to feed the diffusers.

NOTE: This method can only be used in conjunction with a system bypass PCV or VFD on RTU controlling the duct static for the whole system; throttling PCV applications are for isolating low pressure branches on a higher pressure system only

FIGURE 1.3 - THROTTLING METHOD (SEQUENCE 1551) ▼



PCV Sizing

To size PCVs correctly, they should be able to bypass 2/3's of the system design airflow at 1000 - 1500 FPM.

This means that a system with 6000 design CFM would need a PCV capable of bypassing 4000 CFM which would require a damper whose area is 2.67 to 4 square feet. In square inches, this is 384 to 576 (there are 144 square inches in 1 square foot). Based on the area calculated, a rectangular damper anywhere from 24 x 16 (384 in sq - higher side of velocity range) to 28 x 20 (560 in sq - lower side of velocity range - recommended) can be used.

$$\text{PCV Damper Area in}^2 = \left(\frac{\frac{2}{3} * (\text{Airflow CFM})}{\text{Velocity FPM}} \right) * 144$$

NOTE: We recommend calculating the damper size required with the low velocity first and if the damper size doesn't fit within the physical constraints of the job, only then increasing the velocity up to a maximum of 1500 FPM

PRESSURE CONTROL VALVE

INSTALLATION

Installing the PCV Unit

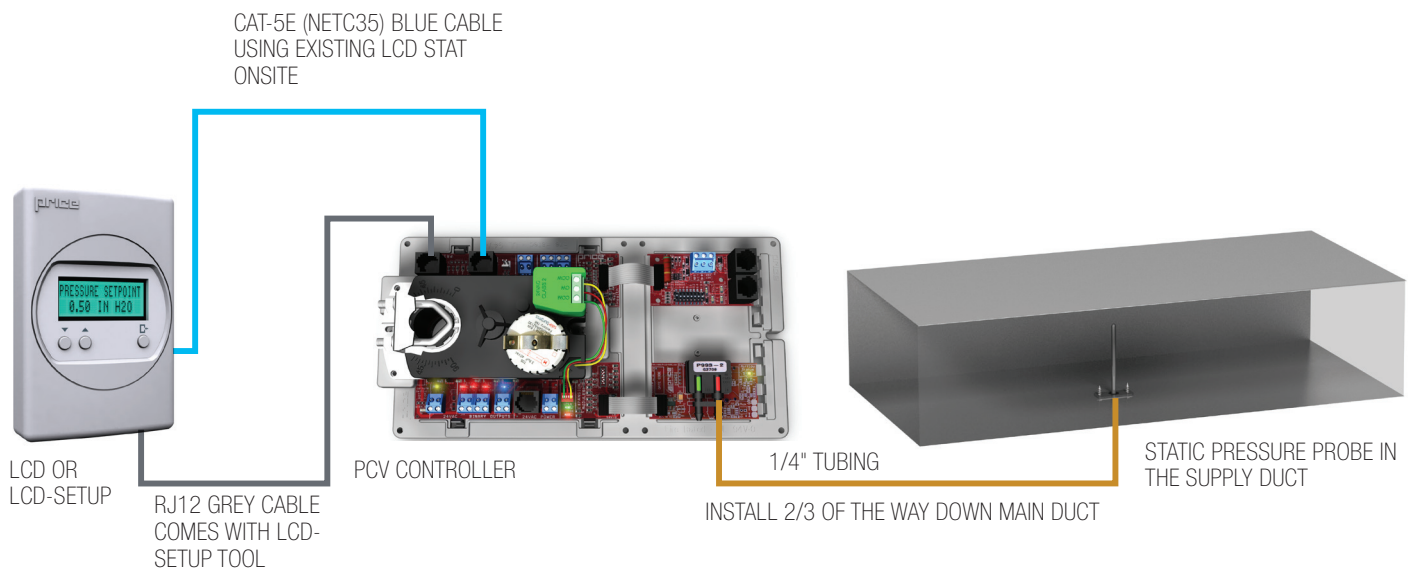
1. The PCV consists of a damper (often a Price model RDV) and a PIC controller that is programmed for pressure control. The PCV should be installed on the supply duct running off of the rooftop unit. For bypass applications, the PCV will go in between the supply and return duct (return may be open and return directly to the ceiling plenum). For downstream throttling applications, the PCV should be installed directly in the supply duct, before the first VAV box or VAV diffuser in the branch being served.
2. Static Pressure Probe – the PCV will come with a static pressure probe. This probe needs to be installed about 2/3 of the way down the main supply duct run. Do not mount this directly after the main fan, as the transducer would read a very high static, rather than the average duct static pressure. The probe then needs to be connected to the HI side port of the transducer on the PIC board with field provided 1/4" pneumatic tubing. Leave the LO side port of the transducer open to the atmosphere.
3. Power up the PCV controller. If a transformer is supplied, then apply the appropriate line voltage to the transformer. If a Price Power Module (PPM) is being used, plug in the provided RJ12 cable into the power jack on the PIC controller. The secondary of either transformer must be earth grounded!

LCD Set-up Tool

The balancer will require an LCD-SETUP tool to set the static pressure setpoint on the PCV controller, and to change any parameters if needed. To connect the LCD-SETUP tool, the balancer must connect to the PIC controller on the bypass terminal in the ceiling, using the Service Port. (Note** the PCV does not come with an LCD stat, so the LCD Set-up Tool is required). If an LCD Set-up tool was not ordered for the job, an existing LCD stat from a zone controller can be used as well; you just require a CAT-5E (NETC35) cable to connect the tstat to the controller

See page 16 for details on how to set the static pressure setpoint.

LCD CONNECTION EXAMPLE ▼



NOTE: When using CAT-5E (NETC35), connect to ethernet port on the back of the LCD thermostat.

PRESSURE CONTROL VALVE

INSTALLATION

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Mounting Instructions

Mount the PCV by sliding the actuator U-bolt over the damper shaft. The back end of the PCV is secured by installing the white plastic keeper (tied to the actuator motor with an elastic band) with two sheet metal screws. This keeps the PCV from moving when the actuator is turning, but still allows it to “float” to avoid binding on the shaft if the controller were screwed firmly in place.

Rotate the damper shaft all the way in one direction (either clockwise or counter-clockwise) and then depress the gray pivot clutch on the actuator, located directly below the green terminal block, to unlock the actuator, and rotate it all the way in the same direction the shaft was rotated in.

Tighten the nuts on the U-bolt clamp and secure the actuator to the damper shaft.

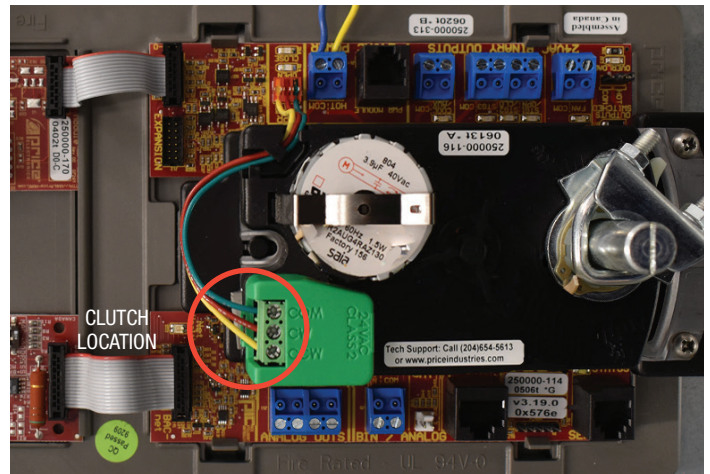
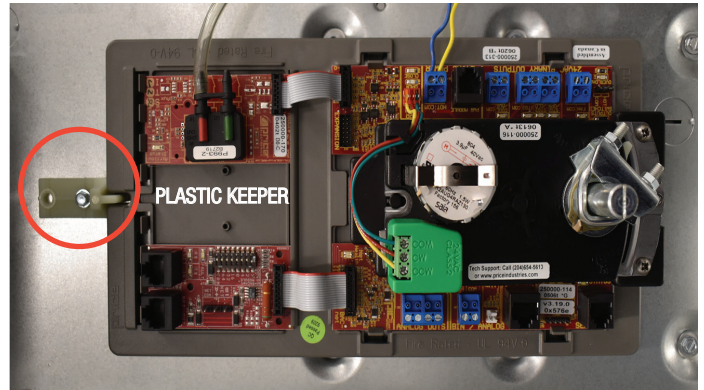
Depress the clutch again and verify the actuator and shaft can rotate through the full 90° range of motion.

NOTE: It does not matter if you choose clockwise or counter-clockwise to rotate the shaft and actuator before tightening the nuts. The PCV will calibrate on power up. All that matters is that the damper shaft and actuator have the full 90° range of motion.

Connect any of the controller's outputs as required.

NOTE: When the output loads require a switched HOT or COMMON 24VAC signal. Use the jumper near the FAN output to select HOT or COMMON outputs.

Power the PCV using 24VAC, the secondary 24VAC common of the transformer must be earth grounded, or power with Price PPM power module by plugging the supplied cables into the RJ-12 power jacks.



PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

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Balancing Instructions

For more advanced setup details, please see 'Display Navigation' section.



Hold down the **Menu** button on the LCD Thermostat for **5 seconds** until prompted for a passcode; use and to enter the passcode; **DOWN, UP, UP, DOWN**.

**SERVICE MENU:
APPLICATION**

The screen will now display “Service Menu: Application.”



Scroll down to the Balancing sub-menu.

**SERVICE MENU:
BALANCING**

THEN



Press the **Menu** button to enter this menu.

**DPR. OVERRIDE:
DISABLED**

THEN



Screen will now show “Damper Override Disabled.” Press **Menu**, and now “Disabled” will be flashing; this means you can now scroll **UP** or **DOWN** with the arrow keys to select a target to send the damper to.

**DPR OVERRIDE:
GOTO FULL OPN**

THEN



For most applications, you will want to select “Go To Full Open,” and once selected, the thermostat will read the damper position and target position as the damper drives open.

POS.	TARGET
50%	100%

PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

Info Menu

(LCD & LCD Setup)

Once the PCV has 24VAC power applied to it and the LCD Setup Tool is plugged into the Service Port, the thermostat screen will go through the initial start-up screen. The display should indicate that this is a Pressure Controller, and not something different.

To view basic information on the PCV controller, press the 'Menu' button  once and scroll through with the 'Down' arrow button.

APPLICATION PRESSURE CTRL	Air terminal, pressure controller, dual duct or fan powered terminal unit
VENT PRESSURE 0.150 IN H2O	Current pressure reading
SUPPLYAIRTEMP 85.0F	If supply air temperature probe is not present, LCD will display no probe. If supply air temperature probe is present, LCD will display temperature.
DAMPER POSITION 50%	This indicates the current position of the damper as percent (%) Range is 0-100% (100% = full open or maximum air)
AIRHANDLER IS ACTIVE	When pressure is sensed, this status is active. When no pressure is sensed, status is inactive.
MAC ADDRESS 1	Shows the BACnet MAC address – range is 1-99 If no BACnet module attached, LCD will display MAC address None
DEVICE INSTANCE 101	Displays controller's BACnet Device Instance (if BACnet module is attached) Device Instance can range from 0-4, 194, 303
PRESS MENU TO EXIT	NOTE: Service menu will automatically time out after 20 seconds

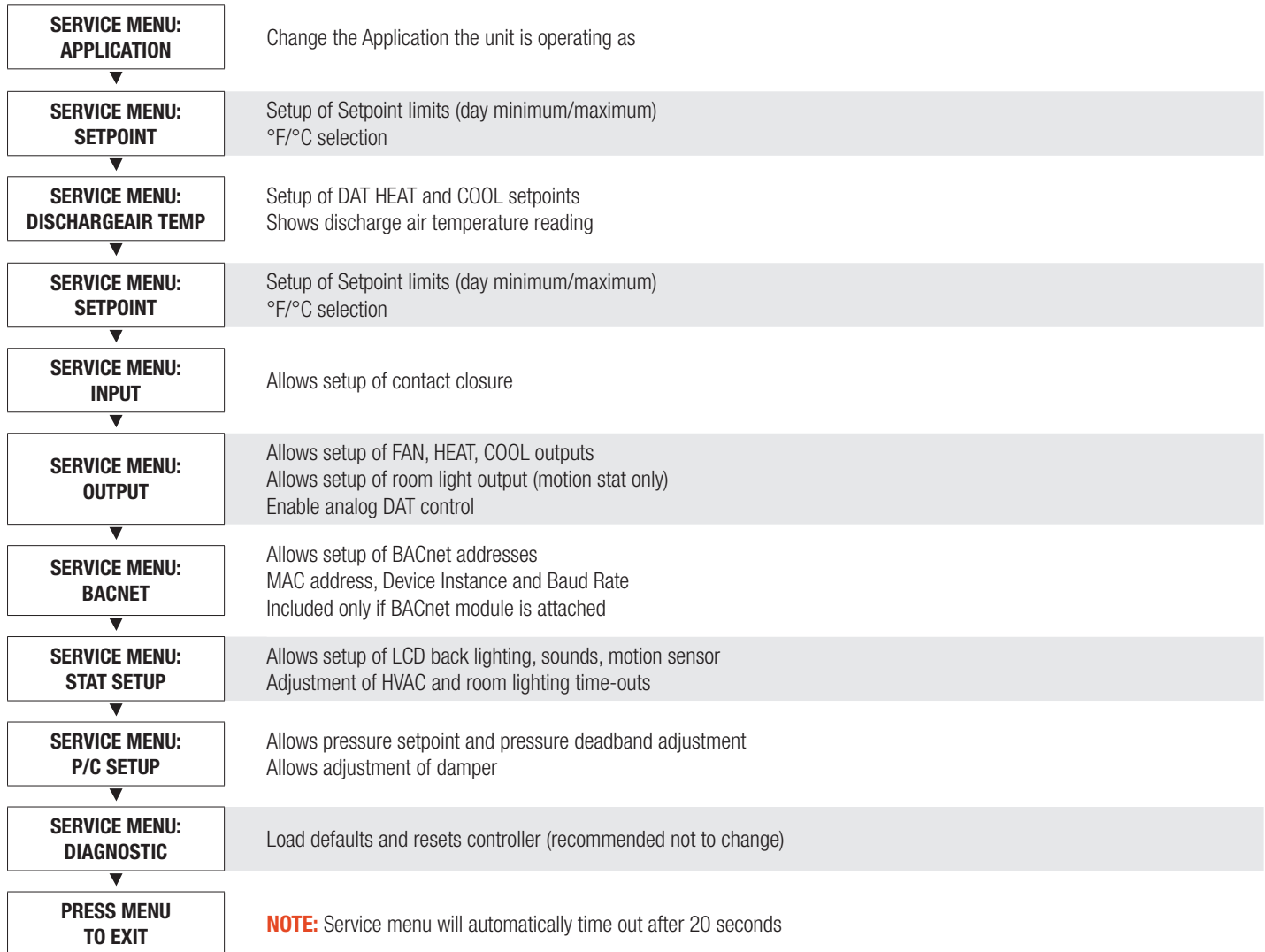
PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

Service Menu

(LCD and LCD Setup Only)

Hold down 'Enter/Menu' button for 5 seconds. Display will show 'Passcode:'. Use Up and Down keys to enter the password in this sequence: **Down, Up, Up, Down**.



NOTE: In most cases only the BACnet and P/C setup menus will be needed for site setup. The configuration parameters in the other submenus are not applicable to the PCV for the most part.

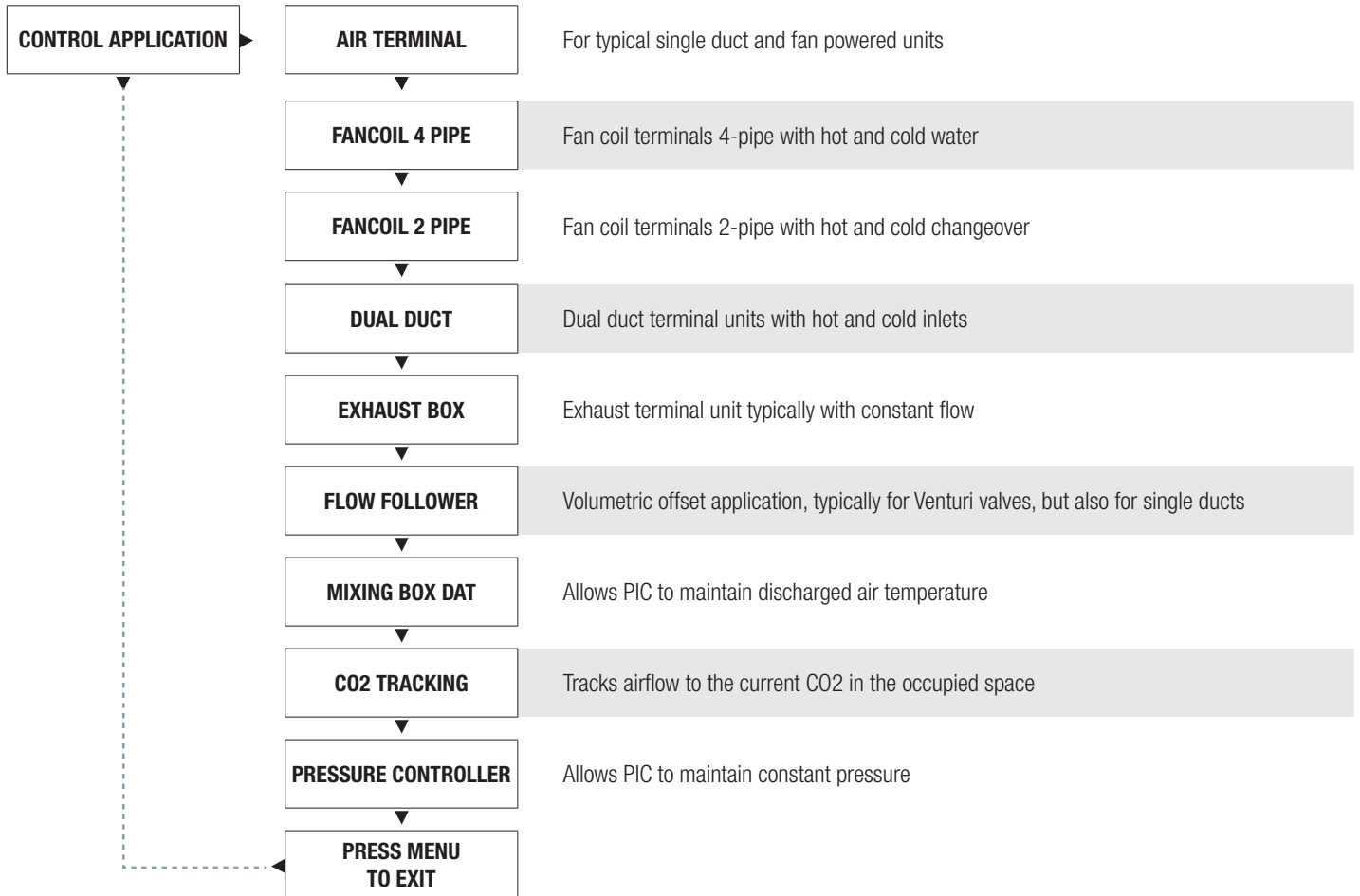
PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

Application Menu

NOTE: The PCV already comes preset for **Pressure Controller**

Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.



PRESSURE CONTROL VALVE

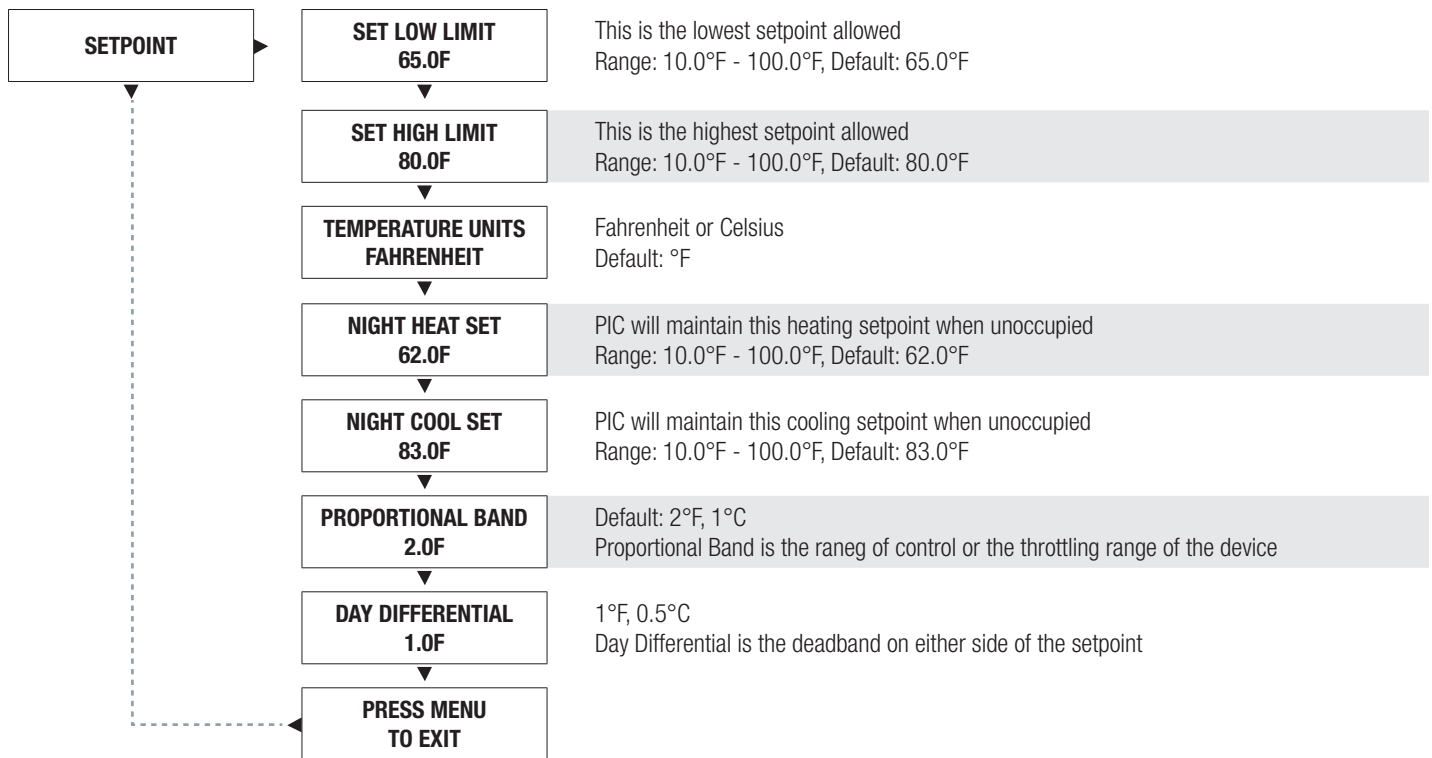
DISPLAY NAVIGATION

Setpoint Menu

NOTE: Does not apply to pressure controller applications

(Setpoint Limits and Temperature Units)

Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.



PRESSURE CONTROL VALVE

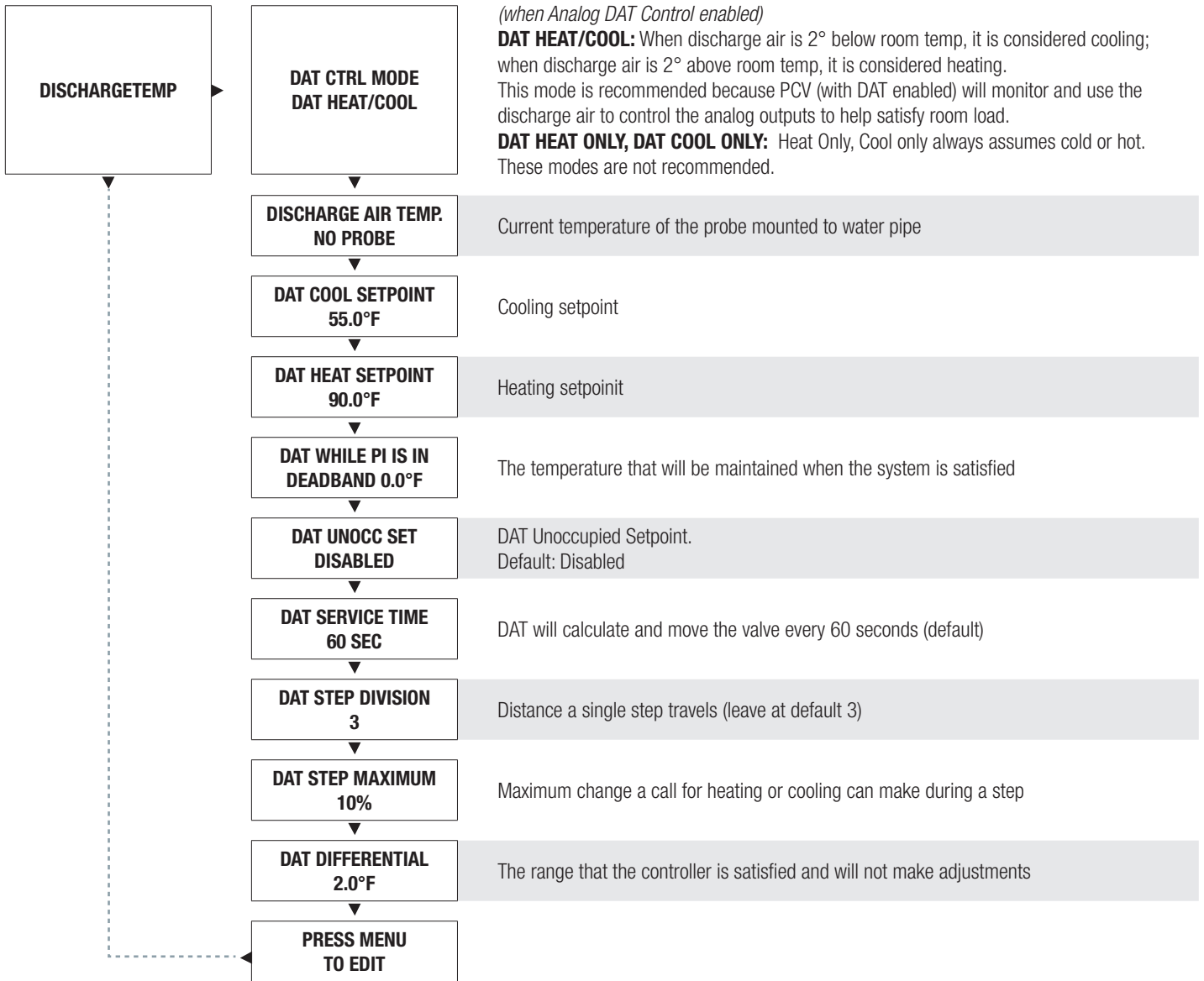
DISPLAY NAVIGATION

Discharge Air Temperature Menu

NOTE: Thermostat must remain connected in this application

(Application Specific Options)

Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.

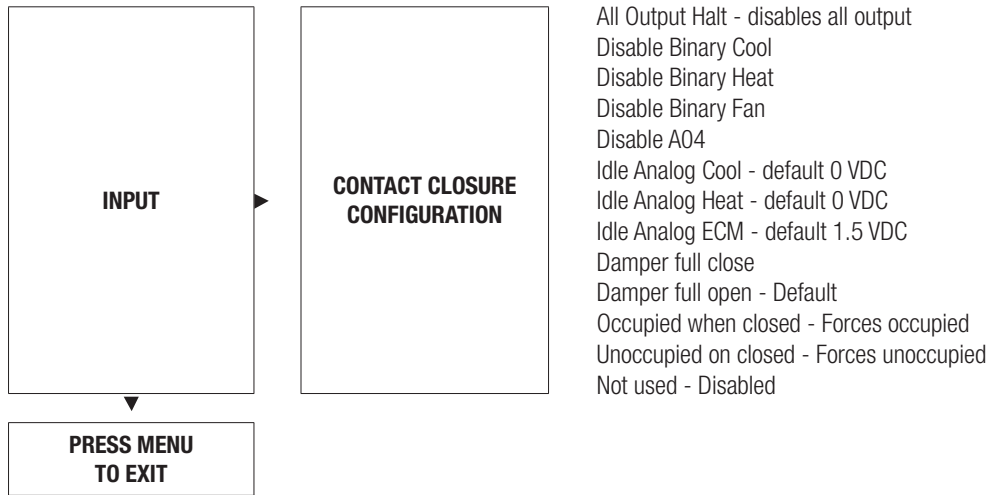


PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

Input Menu

Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.



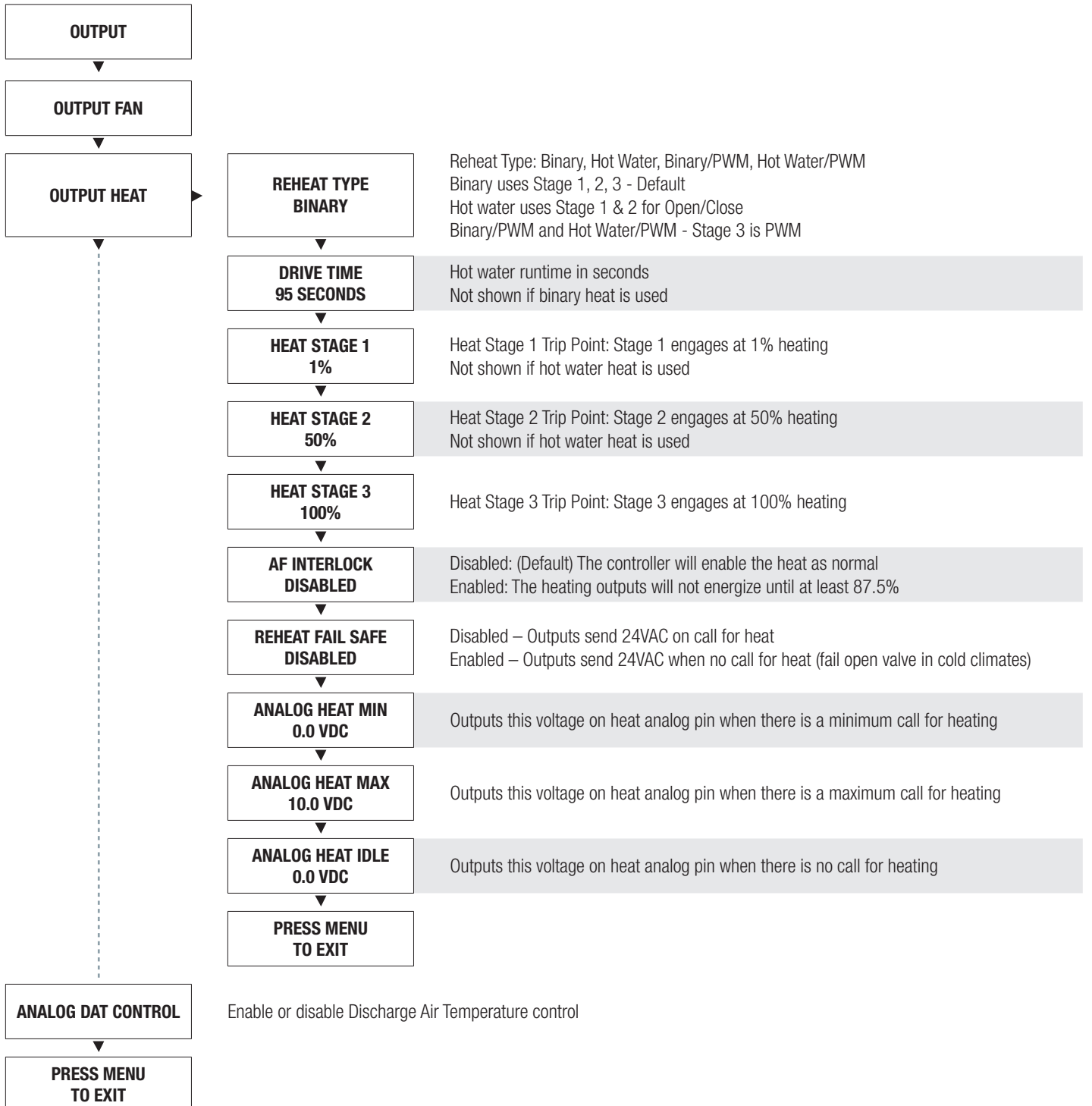
PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

Output Menu – Heat

(Setup of Heat Outputs)

Scroll through menu with Up and Down keys. Press ‘Enter/Menu’ button to apply your changes. *---Saving---* will display as your changes are applied.



PRESSURE CONTROL VALVE

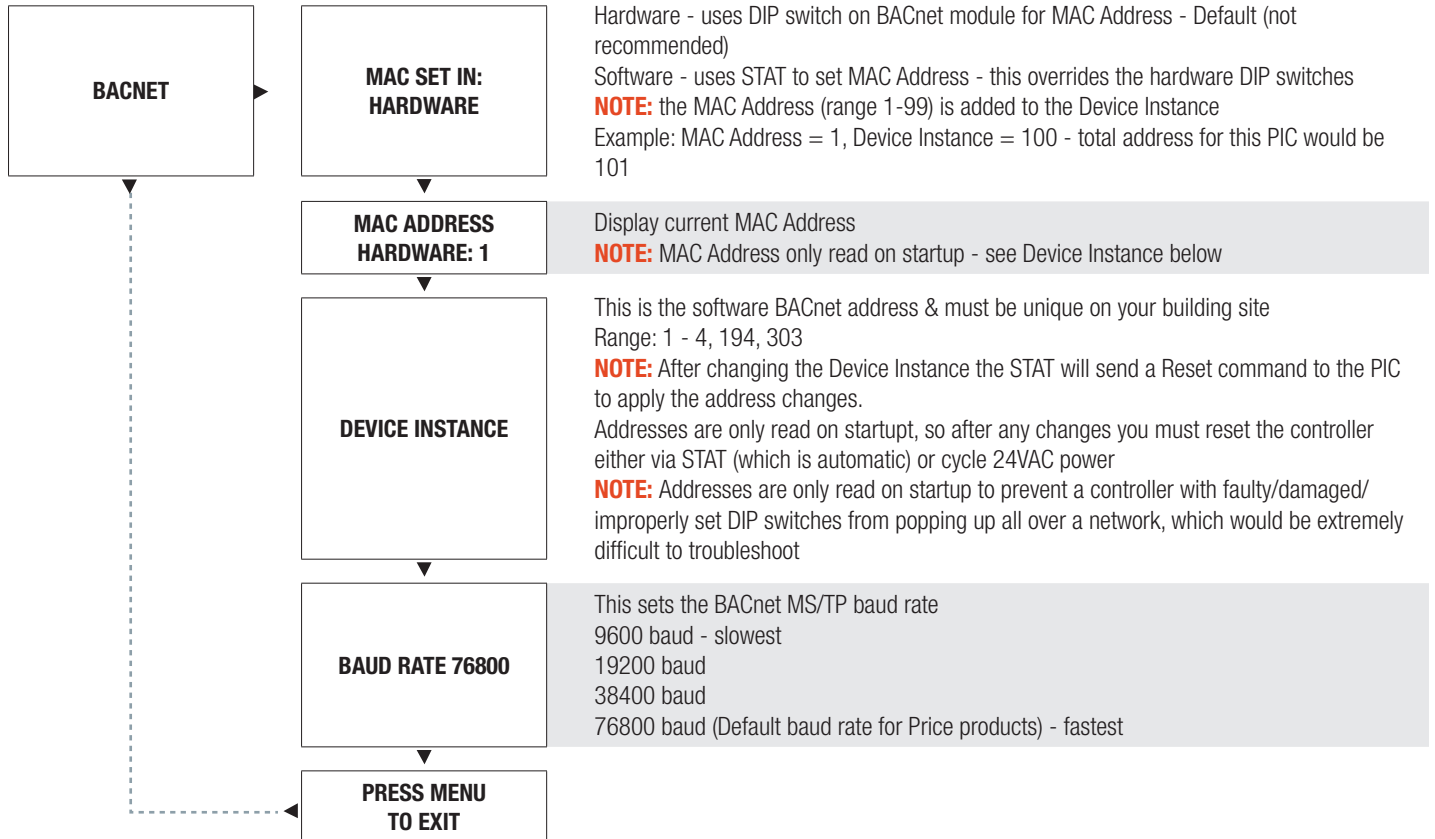
DISPLAY NAVIGATION

BACnet Menu

(BACnet Addressing Setup)



Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.



PRESSURE CONTROL VALVE

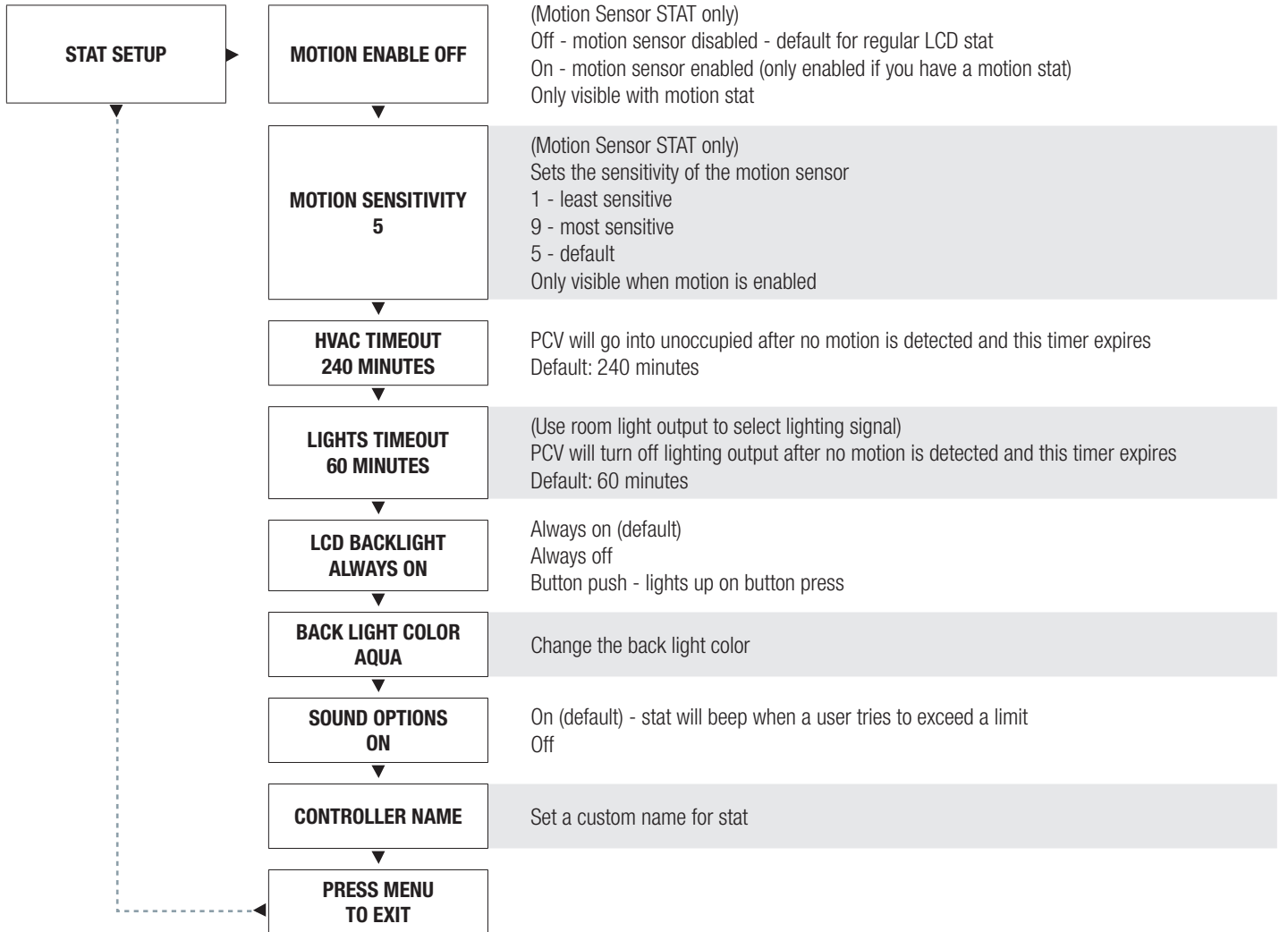
DISPLAY NAVIGATION

Stat Setup Menu

(Stat Options)



Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.



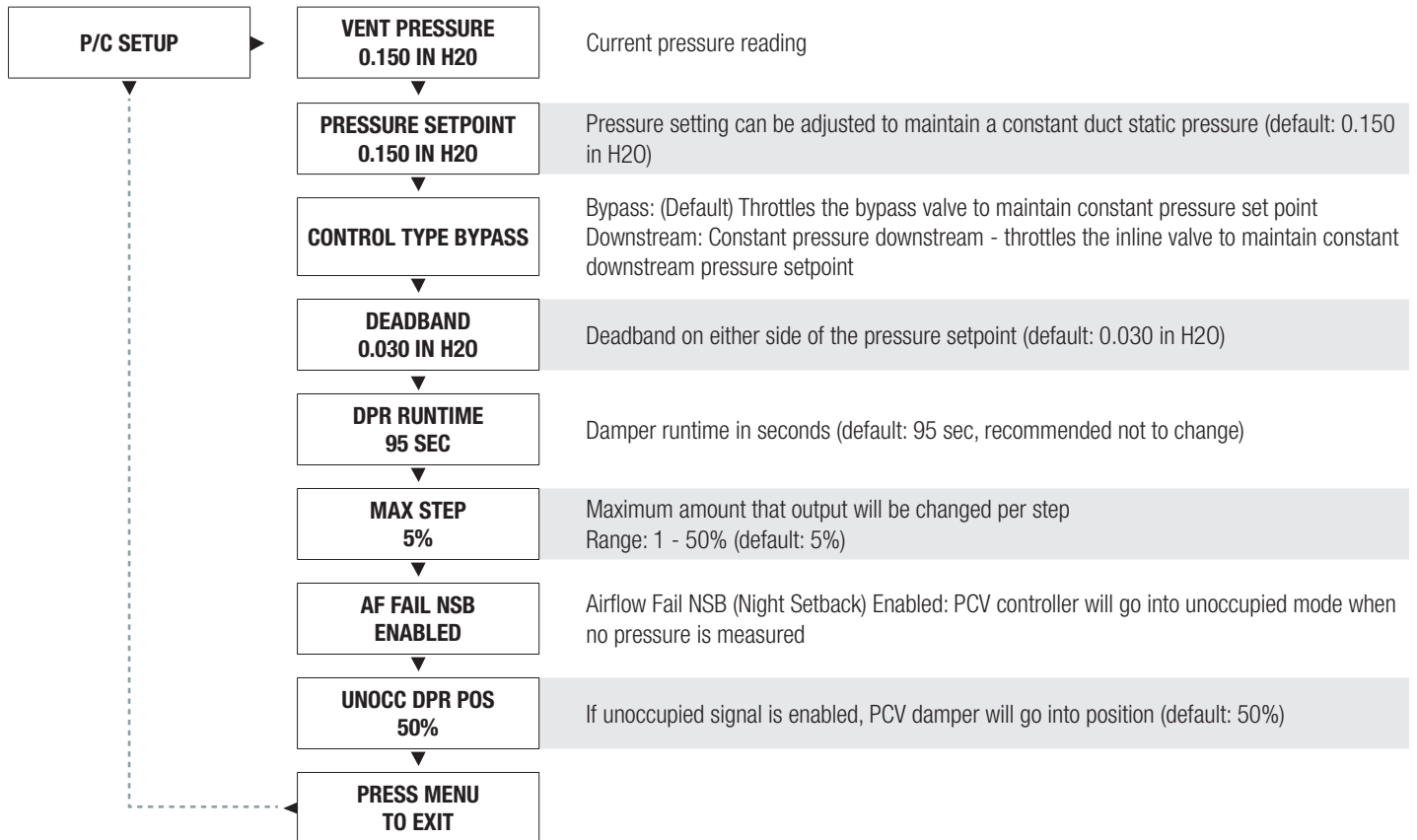
PRESSURE CONTROL VALVE

DISPLAY NAVIGATION

P/C Setup

(Pressure Controller Setup)

Scroll through menu with Up and Down keys. Press 'Enter/Menu' button to apply your changes. *---Saving---* will display as your changes are applied.



PRESSURE CONTROL VALVE

BACNET NETWORKING

Network Wire Specifications

For the BACnet MS/TP network specific wire is required. Do not use standard power or “thermostat” wire. This wire does not have the necessary requirements for digital communications. While it’s possible it may work (temporarily) the network will be unreliable and not operating at optimal.

BACnet MS/TP Wire type recommendations

- Use 1 balanced twisted pair
- Low capacitance (17pF or less)
- Plenum rated (FT6, CMP ratings)
- 100-120 ohm, Balanced
- (CAT5, CAT5E, CAT6 network cable has excellent specifications and will work in almost any BACnet MS/TP application.)
- **Price recommends using the Orange Complement for (+), the Orange for (-), and the Brown and Brown Complement for the (NET COM) connections. These are paired in a standard CAT5E cable.**

NOTE: NETCOM MUST BE WIRED











Termination

BACnet MS/TP networks must be terminated to ensure proper operation. A network should be terminated twice, once at the beginning and once at the end. Termination helps reduce reflections and noise. The terminating can be done with a 100 ohm resistor across the + and - lines.

Tech Tip: The Price BACnet MS/TP to IP Router has built in termination and it is enabled by default (since the router is typically the beginning of the entire MS/TP network). Now you only have to go and find/terminate that last device.

WIRING ▼

	T568B Color
PIN 1	 white/orange stripe
PIN 2	 orange solid
PIN 3	 white/green stripe
PIN 4	 blue solid
PIN 5	 white/blue stripe
PIN 6	 green solid
PIN 7	 white/brown stripe
PIN 8	 brown solid

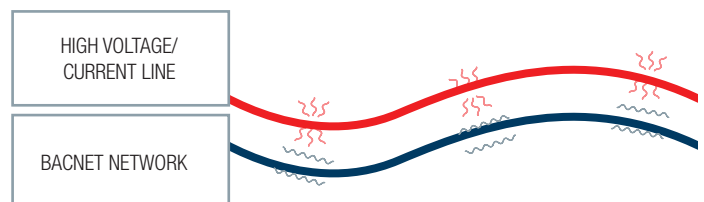
Electrical Noise

Electrical noise can affect both analog signal and digital communications such as BACnet. Therefore do not route high voltage lines next to the BACnet network! Avoid noisy electrical sources such as:

- Variable Frequency Drives
- High current power lines (main panel feeds)
- Fluorescent light fixtures

If you must pass near noisy electrical lines cross at right angles. This will help reduce the amount of noise coupled to the network wires.

ELECTRICAL NOISE EXAMPLE ▼



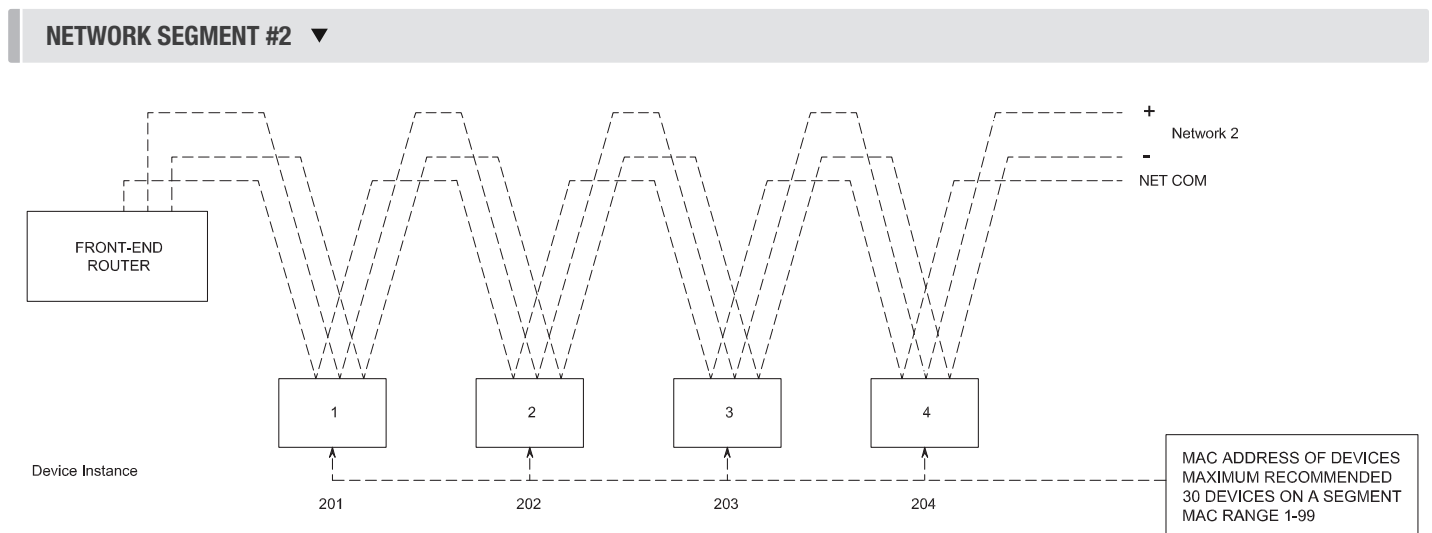
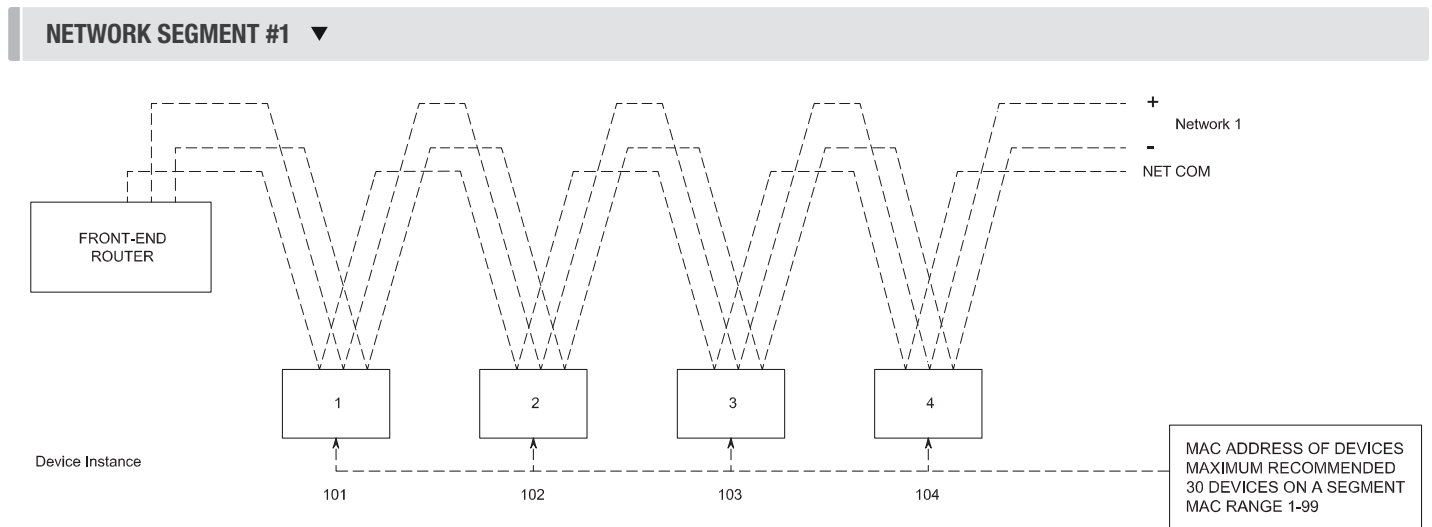
PRESSURE CONTROL VALVE

BACNET NETWORKING

BACnet Networking and Setup

Setting the MAC Address:

MAC (media access control) must be UNIQUE on an MS/TP network segment within building. An installer setting up an MS/TP segment with 30 devices must ensure each device has a UNIQUE MAC Address (Range 1-99). The MAC Address is set through the LCD thermostat.



TECH TIP ▼

Each device needs a unique MAC and Device Instance. All devices must be at the same baud rate. 24 VAC HOT and COMMON polarities are critical and must not be reversed on ANY devices! Reverse polarity will stop communication on that MS/TP segment.

NET COM wire must be connected at each device and is critical for BACnet network reliability.

Use one twisted pair for + and -, and another twisted pair for NET COM for optimal noise cancellation.

PRESSURE CONTROL VALVE

BACNET NETWORKING

Setting the Device Instance (Coupled MAC and DI)

Device Instance:

A Device Instance number identifies a device within an entire building, therefore giving it a unique number or Address, much like a telephone ext. number. A building can have one telephone number, but all the extensions have a unique number to identify them. A Device Instance number would work the same way and must be unique throughout the building. The Device Instance number is user set through the LCD Thermostat or the LCD-SETUP tool.

Below is a table defining how a Device Instance number is obtained.

NOTE: Each device on a network segment must be set to run at the same speed or baud rate.

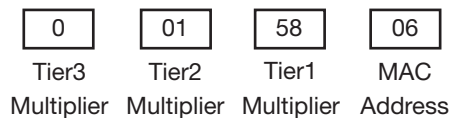
Description	Default Value (Factory)	Notes
MAC Address	6	Value: limited to 1-99
Tier1 (x100)	58	Value: limited to 0-99
Tier2 (x10,000)	1	Value: limited to 0-99
Tier3 (x1,000,000)	0	Value: limited to 0-4

Example Device Instance setup with Default settings:

- MAC Address = 6 (6 x 1 = 6) – Set through software
- +
TIER 1 = 58 (58 x 100 = 5800) – Set through software
- +
TIER 2 = 1 (1 x 10,000 = 10,000) – Set through software
- +
TIER 3 = 0 (0 x 1,000,000 = 1,000,000) – Set through software

=

Final Device Instance = 0,015,806



LCD-SETUP ▼



TECH TIP ▼

When using a PCV controller and no LCD thermostats are on site, you must purchase a setup tool in AIO known as a LCD-SETUP and use this to configure the PCV controller. Remember all settings are stored in the PCV Controller and not the thermostat.

PRESSURE CONTROL VALVE

BACNET NETWORKING

Setting the Device Instance (De-coupled MAC and DI)

Device Instance:

A Device Instance number identifies a device within an entire building, therefore giving it a unique number or Address, much like a telephone ext. number. A building can have one telephone number, but all the extensions have a unique number to identify them. A Device Instance number would work the same way and must be unique throughout the building. The Device Instance number is user set through the LCD Thermostat or LCD-SETUP tool.

Below is a table defining how a Device Instance number is obtained.

NOTE: Each device on a network segment must be set to run at the same speed or baud rate.

Description	Example Value	Notes
Tier 1 (x01)	4	Value: limited to 1-99
Tier 2 (x100)	58	Value: limited to 0-99
Tier 3 (x10,000)	1	Value: limited to 0-99
Tier 4 (x1,000,000)	0	Value: limited to 0-4

Example Device Instance setup with table settings from above:

- TIER 1 = 4 (4 x 1 = 4) – Set through software

+

TIER 2 = 58 (58 x 100 = 5800) – Set through software

+

TIER 3 = 1 (1 x 10,000 = 10,000) – Set through software

+

TIER 4 = 0 (0 x 1,000,000 = 1,000,000) – Set through software

=

Final Device Instance = 0,015,804

0	01	58	04
Tier4	Tier3	Tier2	Tier1
Multiplier	Multiplier	Multiplier	Multiplier

PRESSURE CONTROL VALVE

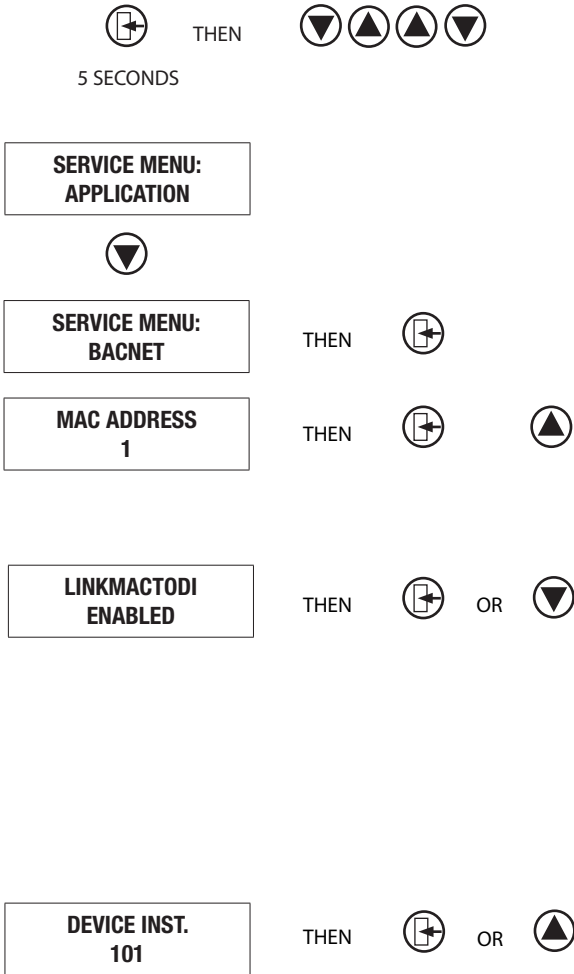
BACNET NETWORKING

BACnet Service Menu

Each controller's MAC address, Device Instance, and Baud rate are set in the BACnet sub-menu of the service menu accessed through an LCD thermostat or LCD setup tool. For information on how to select a MAC address and Device Instance for any controller on a network, see the following pages.

To set the controller's BACnet settings, enter the **Service Menu** and adjust settings as follows:

NOTE: When the screen displays a flashing value, that value is ready to be changed and can be adjusted by pressing the arrow keys. Pressing **Menu** will save the value.



Hold down the **Menu** button on the LCD Thermostat for **5 seconds** until prompted for a passcode; use ▲ and ▼ to enter the passcode; **DOWN, UP, UP, DOWN**.

The screen will now display "Service Menu: Application."

Scroll down to the BACnet sub-menu.

Press the **Menu** button to enter this menu.

Screen will now show "MAC Address." Press **Menu**, and now "1" will begin flashing; this means you can now scroll **UP** or **DOWN** with the arrow keys to select a new MAC address. Once you arrive at your desired number, press **Menu** to save.

By default, the MAC address will appear as the last 2 digits of the device instance. This can be changed so that the MAC is completely independent of the device instance by changing 'Enabled' to 'Disabled'. If there is no specific need to do this, Price recommends leaving it enabled (for Price PRTUs systems and most other scenarios, there is no need to switch to disabled).

The device instance defaults to 100, but will be displayed with the last 2 digits as the MAC if the previous screen was set to enabled. Press **Menu** then use the arrow keys to change the device instance.

NOTE: Each Menu press will allow changes in different tiers of the device instance (so that you don't have to scroll for extended periods to get into the millions range - supposing that's where you need to set your device instance).

PRESSURE CONTROL VALVE

BACNET NETWORKING

BACnet Service Menu Continued

Each controller's MAC address, Device Instance, and Baud rate are set in the BACnet sub-menu of the service menu accessed through an LCD thermostat or LCD setup tool. For information on how to select a MAC address and Device Instance for any controller on a network, see the following pages.

To set the controller's BACnet settings, enter the **Service Menu** and adjust settings as follows:

NOTE: When the screen displays a flashing value, that value is ready to be changed and can be adjusted by pressing the arrow keys. Pressing **Menu** will save the value.



THEN



OR



The baud rate is the speed that the MS/TP network runs at. EVERY device on the network must run at the same speed. Price controllers are defaulted to a baud rate of 73800, but can be changed to 38400, 19200, or 9600. For a network segment with all Price controllers (including Price PRTU systems), it's recommended that the baud rate be left at 76800.

*Choose lower baud rates only when integrating with devices by other manufacturers whose maximum speed is lower than 76800 (eg. 38400).



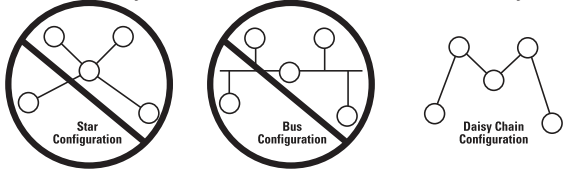
Once all settings are made, scroll down to press **Menu** to exit. The controller will then re-start, this is because all BACnet info is only read once at startup. If you had left the MAC set in hardware, and adjusted the DIP switch settings to set the MAC address, you would have to manually restart the controller by cycling 24 VAC power for the new MAC address to take effect (setting through software makes the restart happen automatically however).

PRESSURE CONTROL VALVE

MAINTENANCE

Troubleshooting





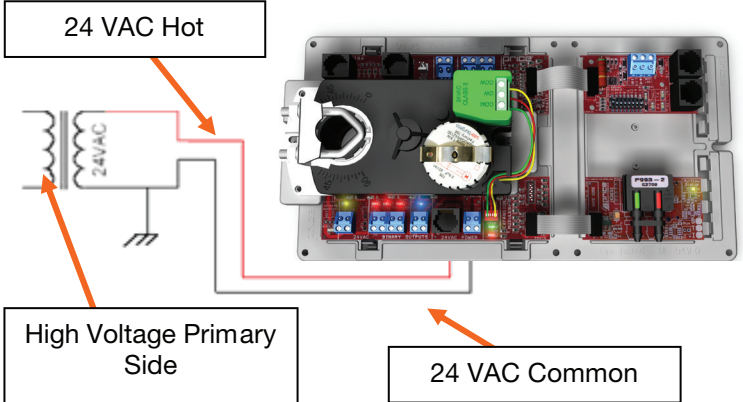
The following information is provided in the event that the PIC does not appear to function properly after installation.

Fault	Solution
<p>PIC controller appears to be not responding or have no power. Green light on the controller is not blinking. Thermostat green indication light not on, or LCD screen is blank.</p>	<p>Check thermostat first for either green indication light, or LCD display. If either of these does not appear, then check the PIC controller for power (green blinking light). If no power is present, check 24VAC power with a Multimeter. Cycle power to the controller. If this doesn't restore power, check the power that is feeding that controller for your problem</p>
<p>Damper acts erratically</p> 	<p>Check actuator mounting; ensure that the damper is fully closed when the actuator is in the fully closed position. Pivot the grey release clutch on the actuator and move by hand, ensuring that the set screw on the damper shaft is torqued down tight and no slipping is occurring. Ensure the 3 wires in the actuator itself are wired correctly: green to COM, red to CW, and yellow to CCW.</p> <p>Ensure the static pressure probe is connected to the HI (RED) side port of the transducer. Leave the LO (Green side) port of the transducer open to atmosphere.</p>
<p>BACnet Communication Errors</p> 	<p>BACnet</p> <p>MS/TP is based on a RS-485 network. It must be wired in a daisy chain configuration. A daisy chain means that there is only one main cable, and every network device is connected directly along its path.</p>  <p>DO NOT use Star, Bus, "T", or any other type of network configuration. Any of these other network configurations will result in an unreliable network, and make troubleshooting almost impossible.</p> <p>Correct polarity is imperative on MSTP wiring. Always ensure that the positive terminal on a device has the same color wire connected to it throughout the network, same for the negative terminal. Eg. 2 wire conductor with black and white wires – black to the positive terminal, and white to the negative terminal. Keep this consistency throughout the network.</p>

PRESSURE CONTROL VALVE

MAINTENANCE

Troubleshooting - Continued

Fault	Solution
<p>BACnet Communication Errors</p> 	<p>BACnet MS/TP networks must be terminated to ensure proper operation. A network should be terminated twice, once at the beginning and once at the end. Termination helps reduce reflections and noise. The terminating can be done with a 100 ohm resistor across the A+ and B- lines, but most Price controllers have the option for enabling termination by flipping DIP switch #8 to the ON position. The network speed or baud rate must be the same throughout the network.</p> <p>NOTE: The default speed for Price BACnet MS/TP controls is 76800. BACnet MS/TP currently supports 4 standard speeds which are: 9600, 19200, 38400 and 76800.</p>
<p>BACnet Communication Errors</p> 	<p>Binary Address must be unique for each device on the network. No two devices can have the same Address. This includes if you are incorporating a Price product into an existing network. Determine the existing binary Addressing scheme for the existing network. The Address is set on the Addressable DIP switches on the PIC.</p>
<p>BACnet Communication Errors</p> 	<p>Grounding and 24VAC polarity: Proper grounding is absolutely essential when wiring the MS/TP BACnet Network. Proper grounding will prevent many potential problems that can occur in a network of devices. Common symptoms of a poorly grounded network can include inconsistent BACnet MS/TP communications and damage from voltage spikes. The most practical method of grounding is to ground every 24VAC transformer common/neutral used to power the controls.</p> <p>Connect the “common/neutral” wire of the SECONDARY side of the transformer to earth ground – such as the ground screw on in the electrical box.</p>
<p>BACnet Communication Errors</p> 	<p>NOTE: Flipping 24VAC HOT and COMMON will cause the BACnet MS/TP Network to stop communicating!!! Ensure HOT and COMMON are not reversed on ANY controllers.</p> <p>WARNING: Controllers will still power up and run even if HOT and COMMON are reversed. However output signals to other devices such as heaters, relays, etc will not work as intended!</p> 

PRESSURE CONTROL VALVE

MAINTENANCE

Hardware Specifications

Power Requirements	24VAC, 47-63 Hz 6VA (not including output loading) NEC Class II
Ambient Ratings	32° to 131° F (0° to 55° C) 10 to 90% RH (non-condensing)
Outputs	24VAC Binary Output. Max 0.5Amps each, MAX 1.85A total Switched HOT or Switched COMMON <ul style="list-style-type: none">• Fan• Stages of heat or heat open/close (x3)• Cooling• Damper CW• Damper CCW Analog 0-10VDC (x4). Max: 10mA each <ul style="list-style-type: none">• Fan (ECM)• Heat• Cool• Aux
Inputs	Thermistor Sensor (10k Type J thermistor) Analog 0-10V inputs (x2). 20k ohm input impedance <ul style="list-style-type: none">• Thermostat Inputs• Room Setpoint Dial• Temperature Sensor (10K Type J Thermistor)• Accuracy of +/- 0.5°F from 55°F to 85°F (+/ 0.25°C from 13°C to 25°C) Pressure Transducer (Kavlico Differential transducer) Pressure Range: 0-2"
Communication ports	BACnet MS/TP Connection (optional) <ul style="list-style-type: none">• Communication speeds: 9,600, 19,200, 38,400, 76,800 (default)• Maximum recommended devices per MS/TP segment: 30 devices• For local setup using Price USB LINKER service tool
Size	11" x 5.75" x 2.75"
Weight	1.8lb. (816g)

This document contains the most current product information as of this printing.
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