TOUCHSCREEN ROOM PRESSURE MONITOR

PMT Series

MANUAL v114

ANTEC controls by price

TABLE OF CONTENTS

INTRODUCTION

General

In this manual, you will find information regarding:

- Touchscreen Room Pressure Monitor (PMT) specifications
- How to install the PMT
- Detailed description of PMT display navigation and configuration
- Troubleshooting information

Product Overview

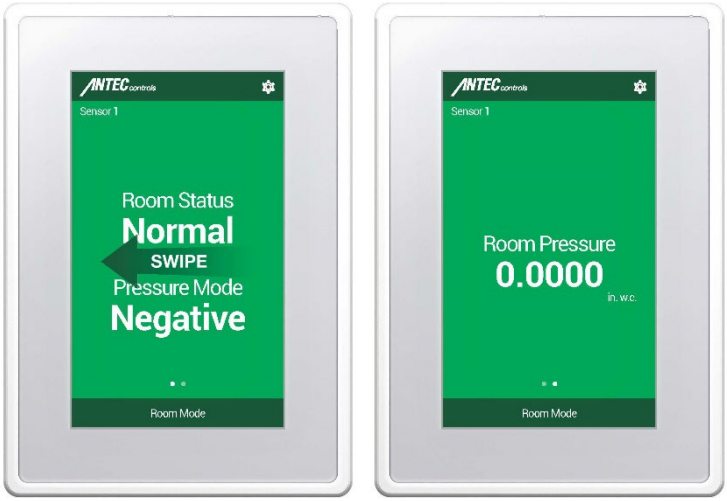
The PMT is designed to provide ease of use pressure monitoring.

The PMT Home screen provides monitoring information in a simple format displaying information including Room Status, Pressure Mode and Isolation Mode.

Upon swiping the screen to the left, room pressure measurement is visually available.

Some of its key features include:

- Password protected menus
- Setup Wizard – Walk through setup of PMT when first powered up
- LED side bars offer 180° viewing of current room status



CAUTION

This mark indicates an important point for the proper function of the PMT. Improper installation or setup may cause unit failure. Pay close attention to all caution points and tech tips throughout this manual.

For local area support, please contact your local Antec Controls Representative

For more information visit www.AntecControls.com

Technical Specifications

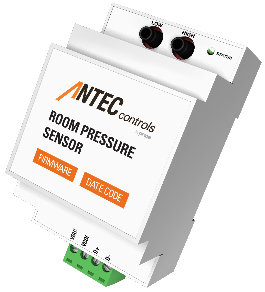
Environmental (Operating)	50°F to 95°F (10°C to 35°C), 0% to 95% R.H. (non-condensing)	
Environmental (Storage)	-22°F to 122°F (-30°C to 50°C), 0% to 95% R.H. (non-condensing)	
Input Power	24 VAC +/- 10%, 50/60 Hz, 34 VA (external loads not included), Class 2	
Inputs	1 Binary Input, 1 Binary/Analog Input, 1 SIN Input	
Outputs	2 Analog Outputs (0 to 10 VDC, Max: 10 mA), 1 Dry Binary Output (Max: 24 VAC/VDC, 100 mA), 1 SIN Power Output (34 VDC, Max: 300 mA)	
Display Type	Capacitive Touch, 4.3 in. (109 mm) TFT/IPS, dimmable	
Resolution	WVGA RGB 480px × 272px	
Communication Protocol	BACnet, SIN	
BACnet	Device Type	B-ASC
	Communication Type	MS/TP (RS-485)
	Communication Speed	9600, 19200, 38400, 76800
	Certification	BTL
	Control Priority Order	1. BACnet 2. Normal Operation
Room Pressure Sensors (SRPS)	Environmental (Operating)	50°F to 95°F (10°C to 35°C), 0% to 95% R.H. (non-condensing)
	Environmental (Storage)	-22°F to 122°F (-30°C to 50°C), 0% to 95% R.H. (non-condensing)
	Input Power	Powered from PMT
	Range	+/- 0.1 in.w.c. (+/- 25 Pa)
	Accuracy	3% of reading
	Pressure Tubing	96in. (2438mm) long, clear, fire-rated 5/32" ID × 9/32" OD × 1/16" W
	Face Plate	ABS plastic (white), Stainless Steel

GETTING STARTED WITH THE PMT

In the Box

Touchscreen Room Pressure Monitor (PMT)

Component	Quantity	Description
Touchscreen Room Pressure Monitor (PMT)	1	Single PMT
120-ohm resistor (not pictured)	2	120-ohm resistors to be used to terminate the SIN and BACnet MS/TP networks



Room Pressure Sensor (SRPS)

Component	Quantity	Description
Room Pressure Sensor	1 for single room application 2 for dual room application 3 for triple room application	Single SRPS
Kink Resistant Air Tubing – 96 in. (2.44 m)	1 for single room application 2 for dual room application 3 for triple room application	Air pressure tubing to connect between Sensor Plate and Room Pressure Sensor
Quick Start Guide	1	Document outlining wiring and installation instructions

Stainless Steel Sensor Plate

Component	Quantity	Description
Stainless Steel Sensor Plate	2 for single room application 4 for dual room application 6 for triple room application	Stainless Steel plate used as pressure sensor inlet
Mounting Hardware Packet	2 for single room application 4 for dual room application 6 for triple room application	Packet containing two screws for j-box mounting of Sensor Plate

OR

ABS Sensor Plate

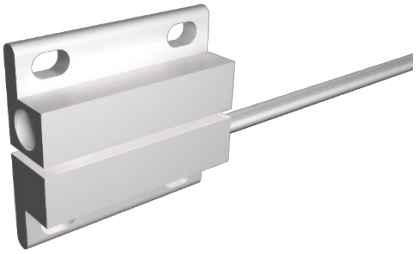
Component	Quantity	Description
ABS Sensor Plate	2 for single room application 4 for dual room application 6 for triple room application	ABS plate used as pressure sensor inlet
	2 for single room application 4 for dual room application 6 for triple room application	Packet containing two screws and two drywall anchors for wall mounting of Sensor Plate

CAUTION

Please ensure you have all components before proceeding. Inspect components for shipping damage. Do not install any components that appear damaged, contact your local Antec Controls Representative for replacements.

For the latest information and videos please visit www.AntecControls.com

Optional Accessories



Door Switch

Door Switches can be wired into the binary input(s) to detect when the door(s) are open.

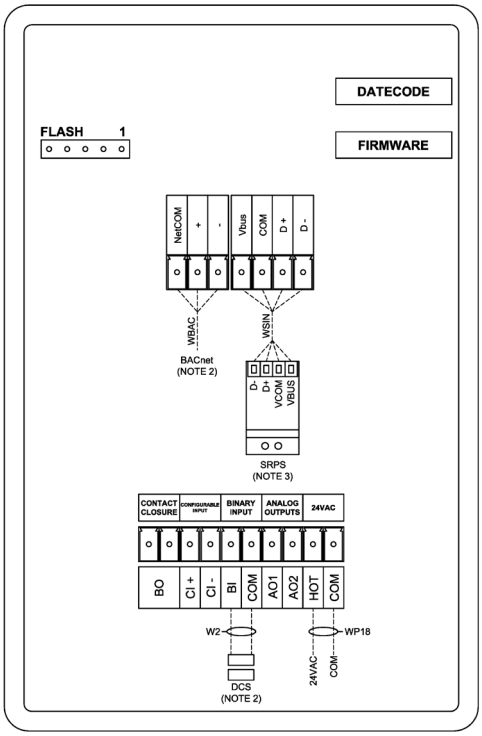
Door Switches are available in either:

Door Contact Switch – Surface Mount

Door Contact Switch – Flush Mount

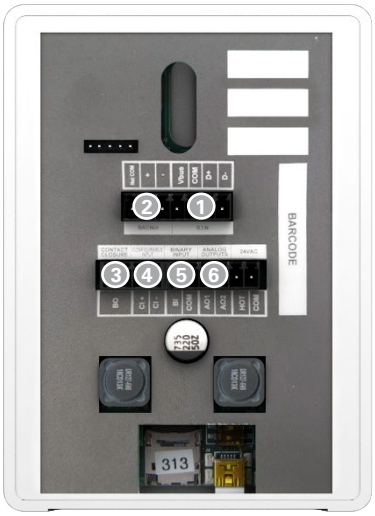
ELECTRICAL INSTALLATION

Sample Wiring Diagram



NOTES:

1. For typical network wiring diagrams see the Sensor Information Network (SIN) and BACnet MS/TP Network sections.
2. All wire connections to the monitor screw connection terminals must be between 16-26 AWG wire.
3. All wire connections to the SRPS screw terminals must be between 12-30 AWG wire.
4. Current and voltage drop should be considered when selecting wire gauge.
5. Wiring above may not reflect those required for your project. Refer to your Antec Controls Project Submittals for project specific wiring diagrams.



Terminal Block Usages

	Description
1	The PMT connects to the room pressure sensor through the SIN (Sensor Information Network) terminal.
2	The PMT has native BACnet capabilities; connection is made through this BACnet MS/TP terminal.
3	The Contact Closure allows the user to provide a binary signal on a variety of inputs.
4	The Configurable Input is typically used for a room mode switch/button; however, it has the same capabilities as the Binary Input.
5	The Binary Input can be used to trigger setback, isolation, alarms, or cautions.
6	The PMT's two Analog Outputs allow the user to provide a configurable 0 to 10 VDC signal on a variety of inputs.

Sensor Information Network (SIN)

What is the Sensor Information Network?

The Sensor Information Network (SIN) is a communication protocol between the PMT and the SIN Room Pressure Sensor (SRPS). SIN allows for digital communication between multiple SRPSs and one single PMT touchscreen.

Network Addressing

SIN devices will come from the factory with predefined MAC addresses. No addressing on-site is required. Limit of three SIN devices on one Sensor Information Network.

PMT Configuration Settings

When multiple SRPS are connected to a single PMT, each SRPS will self address. Please ensure that each SRPS is pinged during the Setup Wizard and the SRPS addressing (1, 2 or 3) is recorded to each room placement. Once the wizard is complete, the display order can be adjusted in the Display menu, if required (see User Preferences - Display).

Physical Connection

SIN consists of a four-wire network architecture (VBUS, VCOM, D+ and D-) using a daisy chain connection between each device on the network segment.

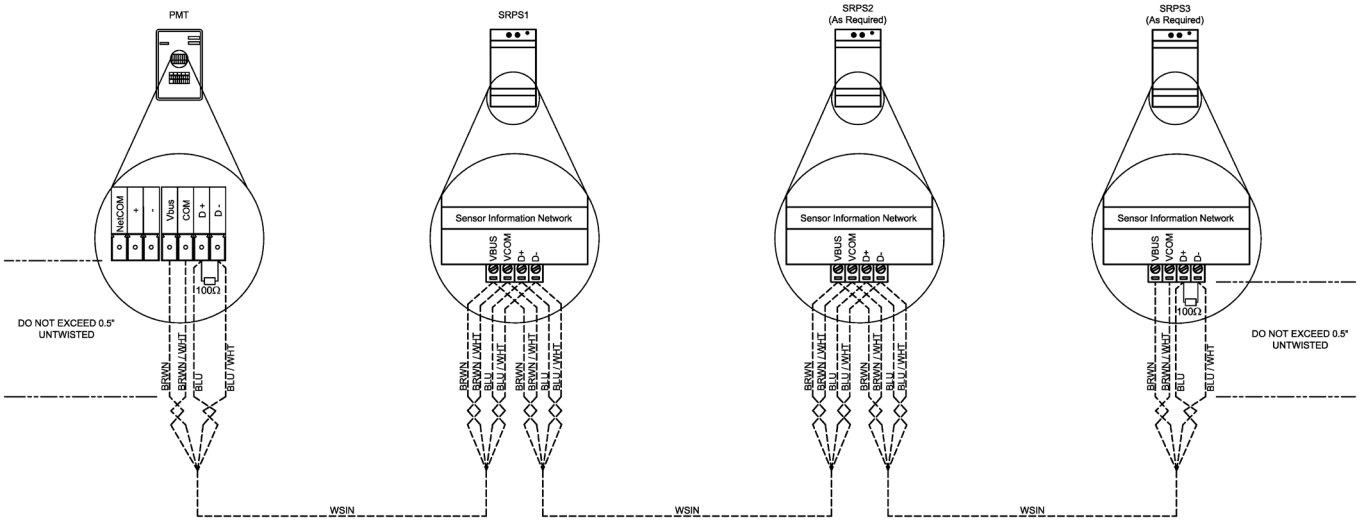
Wiring Requirements

Refer to your Antec Controls Wiring Diagram Package for typical wiring requirements and recommendations.

CAUTION

If the PMT is already set up and an additional SRPS is removed or added to the SIN communication line, please restore defaults on the PMT and re-run the Setup Wizard.

Typical SIN Wiring



NOTE: Installer must use a 120-ohm resistor at both SIN end of line terminations of the "+" and "-" terminals.

BACnet MS/TP Network

What is BACnet?

BACnet MS/TP is a communication protocol for communication between the PMT and the building automation network. BACnet communication allows the end user to verify rooms are operating as expected and allows them to set up trends to monitor safety, and any alarms that occur.

Each PMT will require a connection to BACnet to transmit its information to the Building Management System (BMS).

Network Addressing

When configuring the PMT, the user needs to assign the unique identifying address for the room.

On any BACnet MS/TP network:

- MAC Address can be between 0 and 127 and must be unique to the MS/TP segment.
- Device Instance can be between 0 and 4,194,303 and must be unique to the facility.
- Baud Rate can be 9,600, 19,200, 38,400, or 76,800 and must match that of the Router/System Controller for the MS/TP segment.

BACnet Points

See Touchscreen Room Pressure Monitor (PMT) Product Submittal at AntecControls.com for BACnet Points List.

Physical Connection

BACnet consists of a three-wire network architecture. Daisy chain the +, -, and COM connections of all devices on the network segment. A BACnet MS/TP segment has a limit of:

- Maximum of 32 devices
- Maximum length of 1050 feet (320 meters) for the whole segment

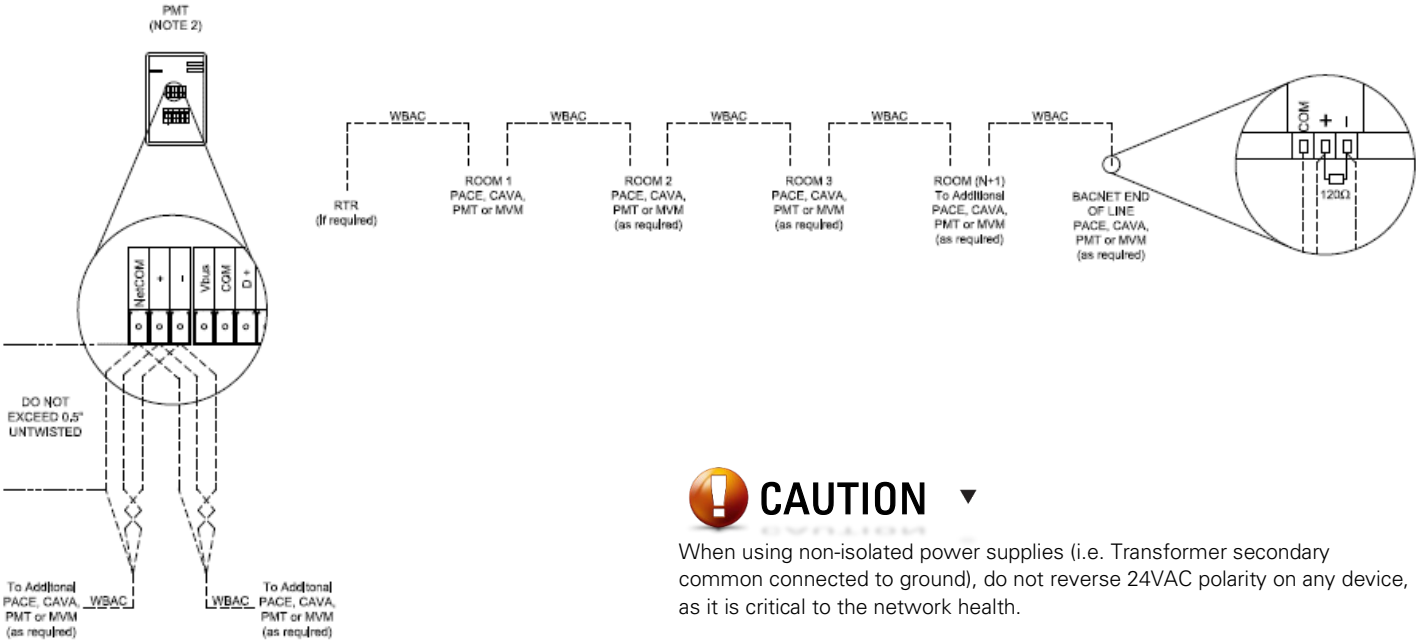
When using shielded cable, ground the shield at one end of the network segment only. Connect the shield of the cable entering a device to that of the cable exiting the device.

Terminate the MS/TP network segment at each end of the network segment by connecting a 120-ohm resistor between the + and – terminals. Remove the termination resistor or disable any network terminations on all devices when adding devices to an existing network segment.

Wiring Requirements

Refer to your Antec Controls Wiring Diagram Package for typical wiring requirements and recommendations.

Typical BACnet Wiring



CAUTION

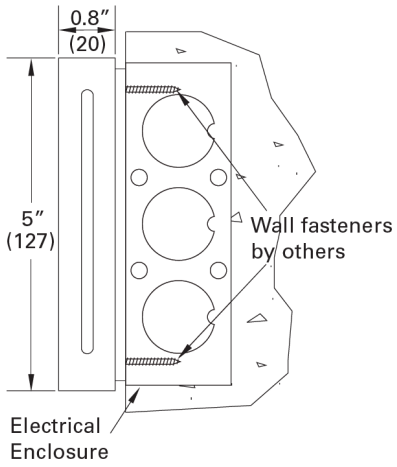
When using non-isolated power supplies (i.e. Transformer secondary common connected to ground), do not reverse 24VAC polarity on any device, as it is critical to the network health.

NOTE: Installer must use a 120-ohm resistor at the BACnet end of line termination.

MECHANICAL INSTALLATION

Installation and Mounting Instructions

Touchscreen Installation Instructions

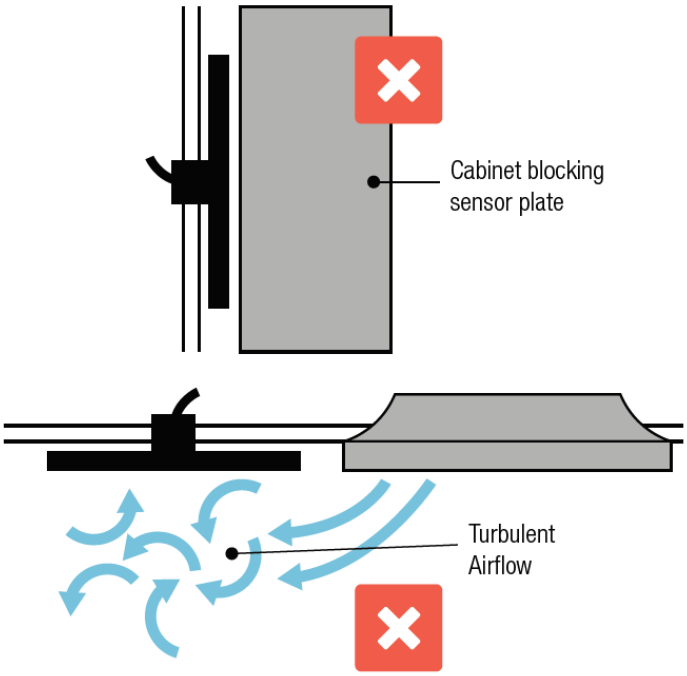


Mount the Touchscreen Room Pressure Monitor (PMT) near the doorway using a standard single-gang electrical box (by Others) at a height of five feet (5 ft, 1.52 m). The recommended installation torque is 3 in-lb (0.34 Nm) to ensure a flush mount on the wall.

Ensure LED bars are not blocked by other devices on the wall.

Leave space below the PMT to ensure the set screw can be tightened.

Pressure Sensor Installation Instructions



Selecting a Location for Installation

There are three components that are to be installed for each space that requires pressure monitoring:

1. A Sensor Plate inside the room
2. A Sensor Plate outside the room
3. A Room Pressure Sensor

NOTE: If the PMT is monitoring multiple spaces, the following steps will need to be repeated for every space.

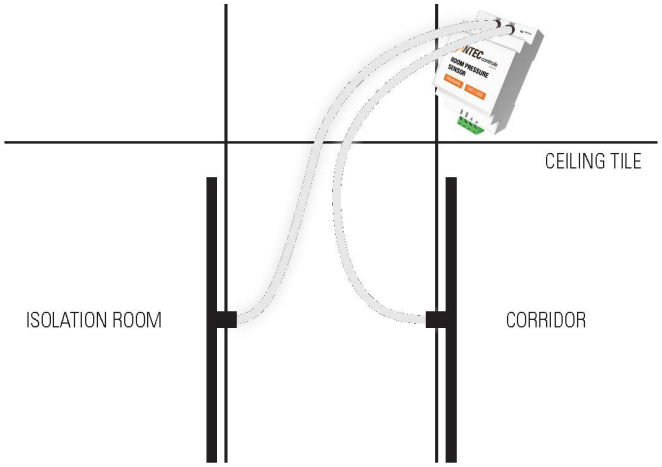
Begin by determining installation locations for each of these components.

1. The best installation location for the Sensor Plates is typically above a doorway. When determining the location for the Sensor Plates:
   a. Ensure that nothing can be placed in front of the pressure sensor, blocking its ability to measure the room pressure accurately.
   b. Be wary of diffuser placement in relation to the sensor. Turbulent airflow passing over the Sensor Plate can cause unstable pressure readings.
2. The Room Pressure Sensor can be mounted in the plenum space either in the room, or in the reference space. Important notes:
   a. **The sensor must be placed in a location where the ninety-six inches (96", 2.44 m) pressure tubing provided with the SRPS can reach both pressure plates.**
   b. The sensor should be easily accessible for wiring and setup.

CAUTION

Incorrect placement can affect the sensor's readings.

Once the installation locations have been selected, the Sensor Plates can be mounted using the followings steps.



Prior to mounting the Sensor Plates, cut the ninety-six inches (96 in., 2.44 m) clear tubing to the required length for the distance from each plate to the sensor. Example: If the plate for the isolation room is five feet (5 ft, 1.52 m) from the SRPS and the plate for the corridor is three feet (3 ft, 0.91 m), cut the provided tubing into one five-foot (5 ft, 1.52 m) and one three-foot (3 ft, 0.91 m) length.

To mount the ABS Sensor Plate directly to the wall:

1. Cut a one inch (1 in., 25.4 mm) hole for the tubing to pass through.
2. Use the Sensor Plate to mark the holes for the anchors (anchors require 3/16 in. (4.8 mm) drill). Drill hole and install the provided anchors.
3. Push the clear tubing onto the pickup on the back of the Sensor Plate.
4. Run the tubing through the one inch (1 in., 25.4 mm) hole in the wall and mount the Sensor Plate to the surface using the provided screws.
5. Connect the tubing to the Room Pressure Sensor (SRPS).
   a. Monitored space to high pressure port.
   b. Reference space to low pressure port.

To mount the stainless-steel Sensor Plate to a single gang electrical box:

1. Knockout a hole for the tubing to pass through.
2. Push the clear tubing onto the pickup on the back of the Sensor Plate.
3. Run the tubing through the electrical box or conduit.
4. Using the provided screws, mount the Sensor Plate to the electrical box.
5. Connect tubing to the Room Pressure Sensor (SRPS).
   a. Monitored space to high pressure port
   b. Reference space to low pressure port.

CAUTION ▼

Make note if the tubing is reversed when installed. If the corridor is connected to the high-pressure port on the SRPS, the reading can be reversed during setup.

Do not extend the pressure tubing past the provided length of 96 in. (2.44 m). Extending the tubing past this length can result in degradation of the pressure reading.

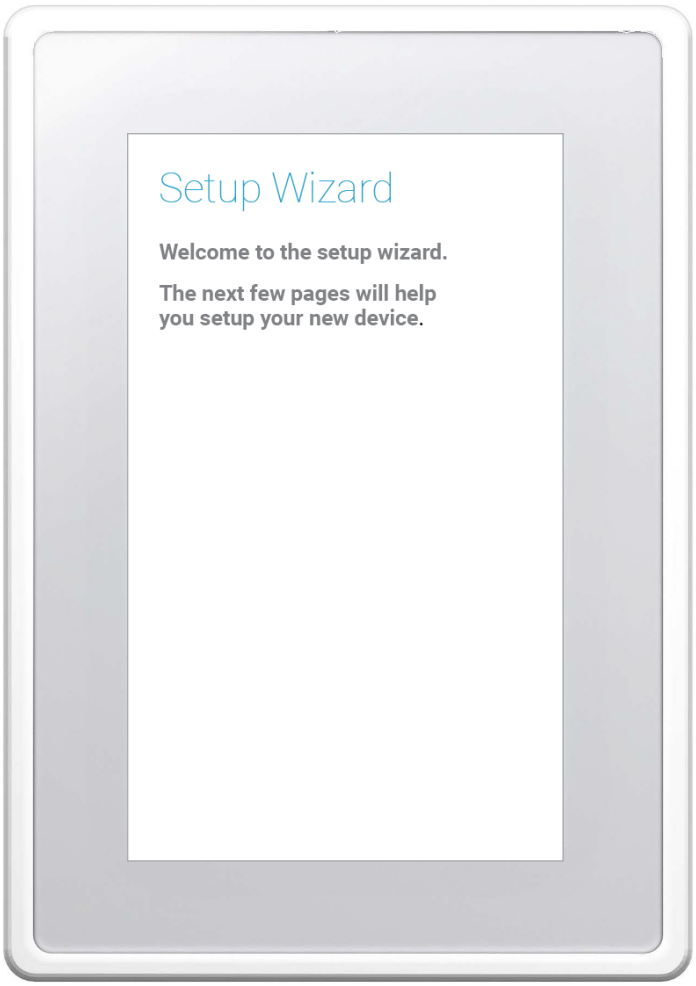
Do not connect tubing from the SRPS to any other pressure measurement devices or other SRPS sensors.

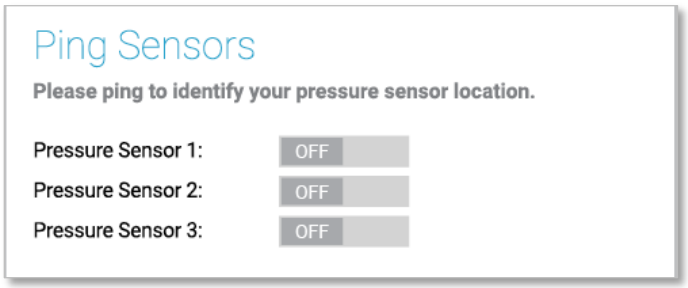
Do not tee off the tubing to connect to any additional devices.

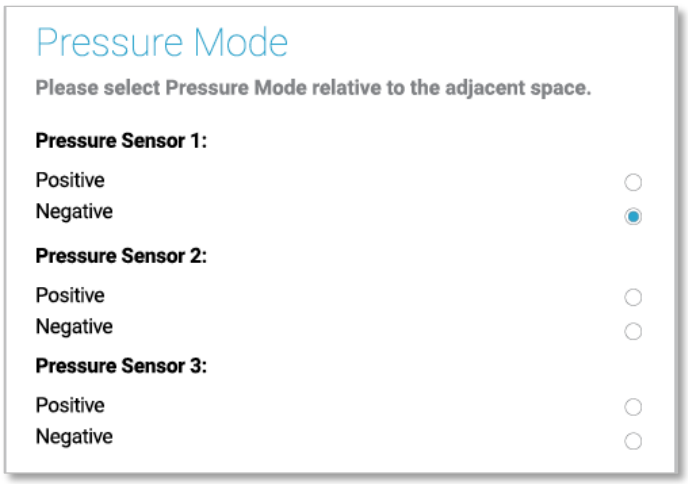
DISPLAY NAVIGATION

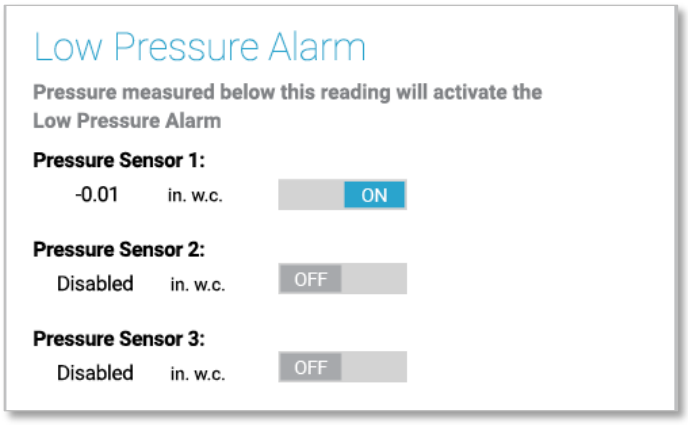
Initial Setup

When the PMT is first powered on, it will prompt the user to step through a Setup Wizard to help configure the device. The following menus will be displayed. At any point in the device setup the user can access previous selections in the menu. Any value not initially configured in the Setup Wizard can be configured through the Settings in normal operation. Swipe or press Next/Previous to navigate through menus.







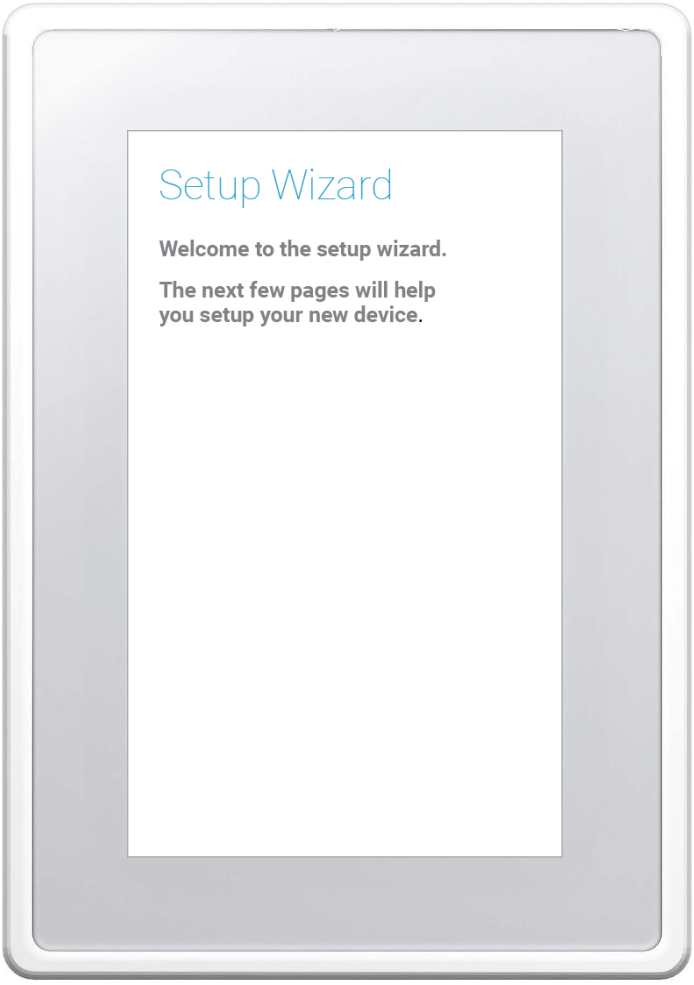


CAUTION

When pinging a sensor, the LED on the Room Pressure Sensor will flash to notify the user where it is installed. This should be noted by the installer for advanced installation purposes.

The sensors must be pinged any time the Wizard has begun, i.e. if power is lost during start-up or if defaults are loaded onto the PMT.

Sensors cannot be added after the Wizard has been completed. If an additional sensor is required after the PMT's initial setup, defaults must be loaded and the sensors must be rediscovered.



High Pressure Alarm

Pressure measured above this reading will activate the High Pressure Alarm

Pressure Sensor 1:
-0.0500 in. w.c. ON

Pressure Sensor 2:
Disabled in. w.c. OFF

Pressure Sensor 3:
Disabled in. w.c. OFF

Room Mode Key Switch

Do you have a Room Mode Key Switch installed?

- Yes ○
- No ◉

Door Switch

Do you have a Door Switch installed?

- Yes ○
- No ◉

BACnet

Setup BACnet at this time?

- Yes ◉
- No ○

MAC Address

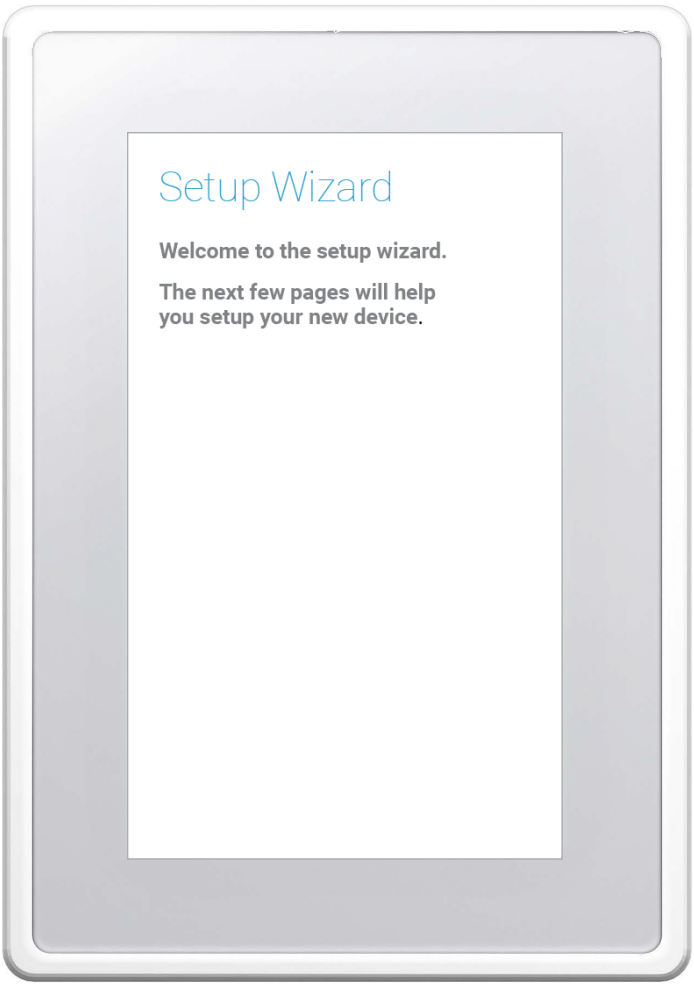
1

Device Instance

158001

Baud Rate

- 9600 ○
- 19200 ○
- 38400 ○
- 76800 ◉



Review

Scroll to see complete list

Pressure Sensor 1:

PRESSURE MODE	Negative
LOW PRESSURE ALARM	-0.01 in. w.c.
HIGH PRESSURE	-0.05 in. w.c.

Pressure Sensor 2:

Pressure Sensor 3:

Global Settings:

ROOM MODE KEY SWITCH	No
DOOR SWITCH	No
BACNET	Yes
MAC ADDRESS	1
DEVICE INSTANCE	158001
BAUD RATE	76800

Home Screen

The PMT Home Screen displays once the PMT Setup Wizard has been completed.

The Home Screen provides the user with a clear indication of the monitor mode, status, and pressure reading.

Single Room Monitoring

Single Room Display Components

	Display Component	Description
1	Monitor Name	The current name of the monitor is displayed. This is configurable through the User Preferences menu.
2	Settings Button	Allows access to settings. This is password protected. Default Password: **1-6-6-4**.
3	Room Status	Indicates whether the room is maintaining the desired setpoints in its current mode.
4	Pressure Mode	Indicates whether the room is in Negative or Positive Isolation mode.
5	Room Mode	Allows the user to select between Isolation and Setback modes. If a switch/button to control room mode is installed, this option will be disabled on the PMT Home Screen. This ensures that control is maintained from only one location and ensures that the physical switch/button will always match the Room Mode. This is password protected and the password is configurable through the User Preferences menu. Default Password: **1-2-3-4**.

Single Room Setback Mode

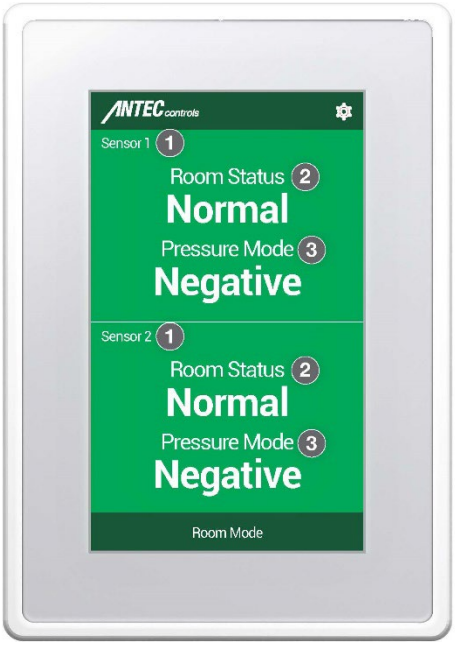
Once in Setback mode, the PMT will continue to monitor room pressure; however, all alarms will be disabled. The Home Screen will only show the room status.

Multi-Room Monitoring

The PMT can also be used to monitor the pressure in multiple rooms. Up to three rooms can be monitored simultaneously on one display.

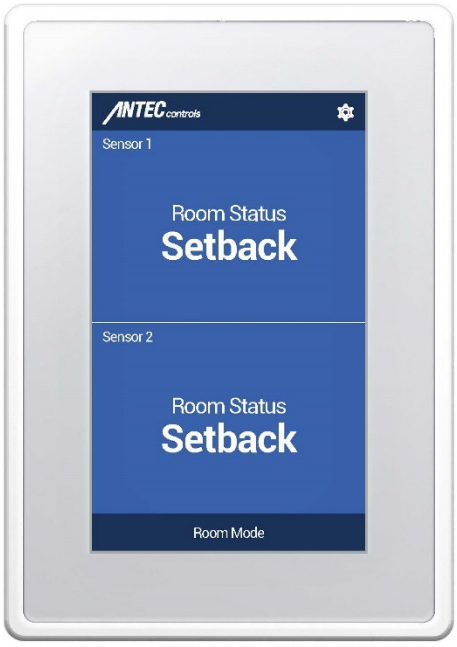
The Multi-Room Monitoring display will include the Monitor Name, Settings menu, and Room Mode buttons, similar to Single Room Monitoring.

In addition, the following will be displayed for each individual room.



Multi-Room Display Components

	Display Component	Description
1	Room Name	The name of the room associated with each room pressure sensor. Each name is customizable through the User Preferences menu.
2	Room Status	Indicates whether each individual room is maintaining its pressure setpoint in its current mode.
3	Pressure Mode	Indicates whether each individual room is in Negative or Positive Isolation mode. Each room can be configured individually for either Negative or Positive Isolation.



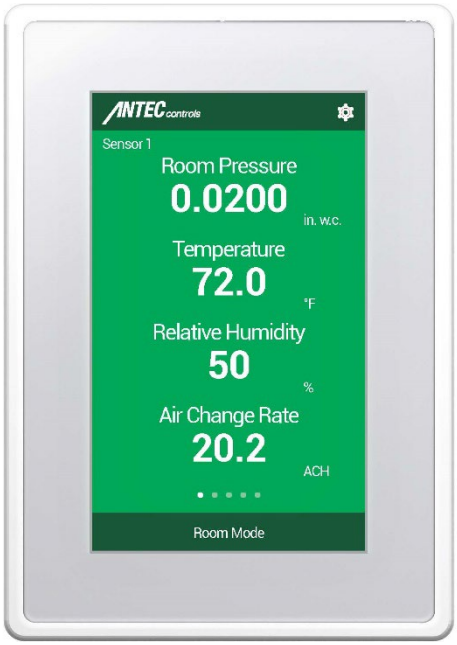
Multi-Room Setback Mode

When the monitor is put into Setback Mode, all rooms will go into Setback. All rooms will still monitor pressure, but the alarms in every room will be inactive.

CAUTION

Each individual room can be configured with its own alarms or cautions. For example, when one room goes into alarm, the alarm indication will be isolated to that display section of the monitor.

BACnet Point Monitoring



Single Screen BACnet Point Monitoring:

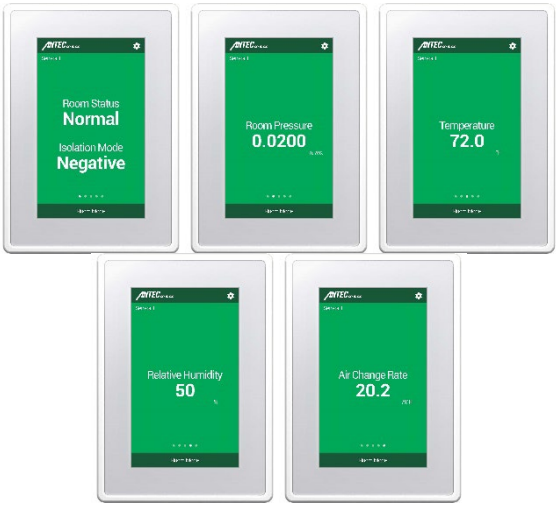
The user can configure the PMT to show any combination of Temperature, Relative Humidity, or Air Change Rate from another device. These values can come from any device on the same BACnet MS/TP communication line as the PMT.

Once configured to display the appropriate values, there are multiple display configurations available for the Home Screen of the PMT.

All BACnet points for a single room can be displayed on a single screen.

CAUTION

This display method is only available when monitoring a single room



Multiple Screen BACnet Point Monitoring:

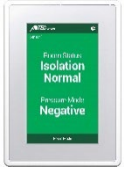
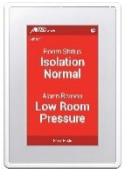
When monitoring multiple rooms, the BACnet points for each room will be displayed on a single screen. The user can then swipe to display the different environmental values for each room.

CAUTION

The user's location in the multiple screens is indicated at the bottom of the screen above the Room Mode button.

PMT Operation

When fully set up the PMT can be set to monitor positive or negative pressure. Alarms for low/high pressure are fully field configurable. The PMT has four Room Status Conditions:

Mode	Status	LCD Display	LED Bars	Alarm
Negative/Positive Pressure Monitoring (Room Occupied)	Normal – Pressure reading within low/high setpoints		Green	Off
Negative/Positive Pressure Monitoring (Room Occupied)	Caution – Pressure reading outside low/high caution setpoints		Yellow	Off
Negative/Positive Pressure Monitoring (Room Occupied)	Alarm – Pressure reading outside low/high alarm setpoints		Red	On
Neutral (Room Setback)	Setback – Pressure measured but no alarms		Blue	Off

Silence Screen:

When occupied, the PMT will monitor and display the primary room pressure.

If the pressure reading is within the low and high alarm setpoints, the LED bars will be green and the alarm will be off.

If the pressure reading is outside of either the low or high alarm setpoints, the LED bars will turn red and the local alarm will turn on.

Alarm Silence

Used to temporarily mute the local alarm for a selected number of minutes. This silence time defaults to a five minute delay.

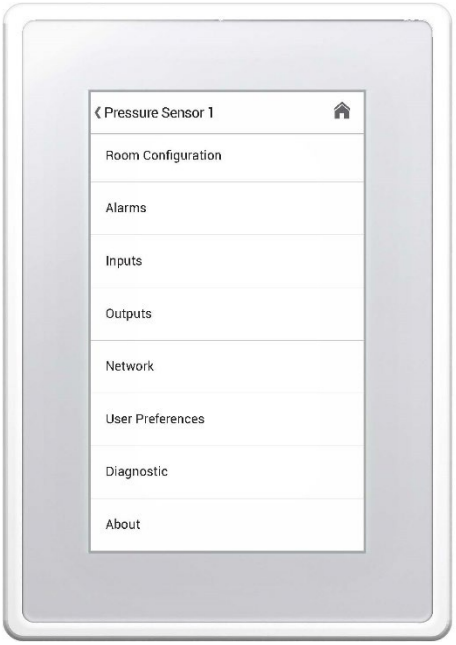
Time delay adjustable in the Alarms menu on page 20.

If the Room Pressure Sensor (SRPS) is unplugged from the PMT while in occupied mode, the LED bars will turn red and the local alarm will turn on.

SETTINGS

The settings are accessible through the Home Screen and are password protected (see Home Screen section).

These menus allow the user to change any of the configurable options on the PMT.



Menu Item	Description
Room Configuration	Used to adjust room mode as well as isolation mode.
Alarms	Used to configure all alarms for the PMT, as well as adjust mute times.
Inputs	Used to configure the pressure sensor, Binary Input, Configurable Input, and BACnet Input points.
Outputs	Used to configure the Binary Output and the Analog Outputs.
Network	Used to set the address and instance of the PMT for BACnet communication.
User Preferences	Allows the user to change the room mode password, as well as adjust display settings.
Diagnostic	Diagnostic information is available under this menu. The user is able to power cycle the PMT or restore factory defaults.
About	Displays current details about the PMT including firmware version and application version.

Room Configuration

The Room Configuration menu can be used to adjust the room mode and the isolation mode.

Menu Item	Available Options/Range	Description
Room Mode	Setback Isolation	Used to switch between Isolation and Setback.
Pressure Mode	Positive Negative	Used to set the monitor to Negative Isolation or Positive Isolation relative to the adjacent space. When multiple pressure sensors are detected, the Pressure Mode for each of the sensors will be available in the Pressure Mode sub-menu.

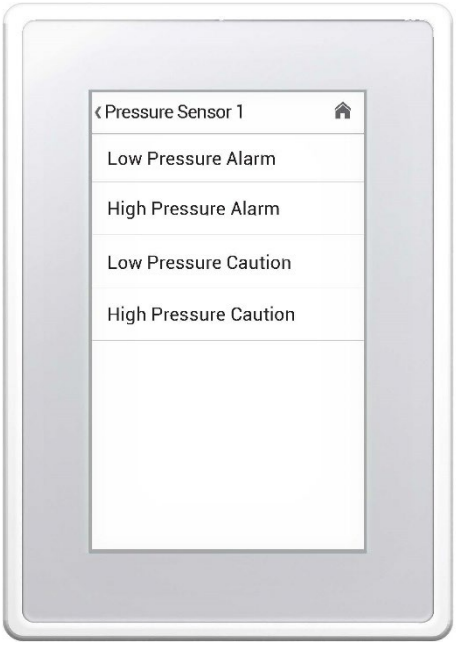
Alarms

The Alarms menu is used to configure the high and low pressure alarms, as well as the caution alarms.

Menu Item	Available Options / Range	Description
Pressure Sensor 1	See page 20	This option will be available when a single SRPS is installed. Allows access to all alarm and caution settings for the associated sensor.
Pressure Sensor 2	See page 20	This option will be available when two SRPS are installed. Allows access to all alarm and caution settings for the associated sensor.
Pressure Sensor 3	See page 20	This option will be available when three SRPS are installed. Allows access to all alarm and caution settings for the associated sensor.
Door Switch	See page 20	This option will be available when a door switch has been configured for use with the PMT. Once available it allows the user to configure an alarm to operate based on the usage of the door switch. See Inputs section of this manual for instructions on configuring the door switch.
Alarm Mute Time	1 to 30 minutes	Sets the length of time for which all alarms will be muted.

Alarms – Pressure Sensor

Pressure Sensor 1, Pressure Sensor 2, and Pressure Sensor 3 have the following options.



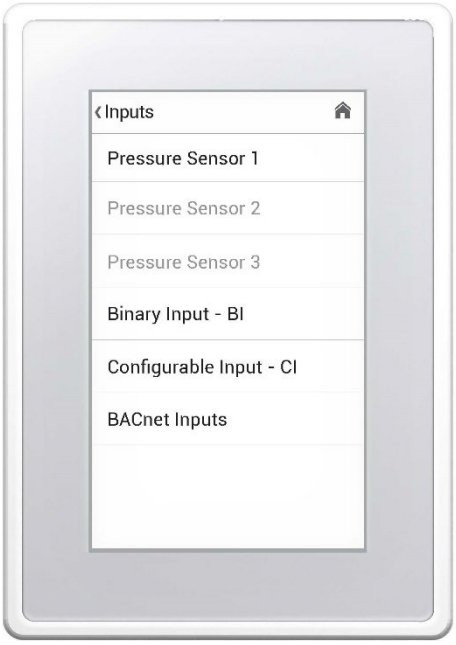
Menu Item	Available Options/Range	Description
Low Pressure Alarm	Setpoint On/Off Delay On/Off	Set the activation point for the Low Pressure Alarm, as well as the time delay of this alarm. The Low Pressure Alarm on the PMT is used to indicate if the room is too close to neutral, i.e. *not pressurized enough*.
High Pressure Alarm	Setpoint On/Off Delay On/Off	Set the activation point for the High Pressure Alarm, as well as the time delay of this alarm. The High Pressure Alarm on the PMT is used to indicate if the room is too negative or positive (depending on Pressure Mode), i.e. *over pressurized*.
Low Pressure Caution	Setpoint On/Off Delay On/Off	Set the activation point for the Low Pressure Caution alarm, as well as the time delay of this caution alarm.
High Pressure Caution	Setpoint On/Off Delay On/Off	Set the activation point for the High Pressure Caution alarm, as well as the time delay of this caution alarm.

Alarms – Door Switch

Menu Item	Available Options/Range	Description
Door Alarm	Disabled Enabled	Allows the user to configure the Door Alarm.
Delay	0 to 600 seconds	Enables and sets the door alarm delay.
Caution During Alarm Delay	No Yes	Enables caution mode during the user-set delay period.

Inputs

The Input menus allow the user to configure all the Binary and Analog Inputs for a variety of different applications.



Menu Item	Available Options/Range	Description
Pressure Sensor 1	See page 21	Used to configure the Pressure Sensor 1. This includes adjusting scale and offset factors as well as the option to reverse the sensor state.
Pressure Sensor 2	See page 21	Used to configure the Pressure Sensor 2. This includes adjusting scale and offset factors as well as the option to reverse the sensor state.
Pressure Sensor 3	See page 21	Used to configure the Pressure Sensor 3. This includes adjusting scale and offset factors as well as the option to reverse the sensor state.
Binary Input - BI	See page 22	Configure the Binary Input. The user can assign the usage of this input (door, setback, alarm, caution) as well as view its current state.
Configurable Input - CI	See page 22	This input is typically used with a room mode switch/button. It can also be used as a second binary input (door, setback, alarm, caution).
BACnet Inputs	See page 23	Used to configure which BACnet points will be displayed on the Home Screen.

NOTE: The PMT will prioritize inputs in the following order:

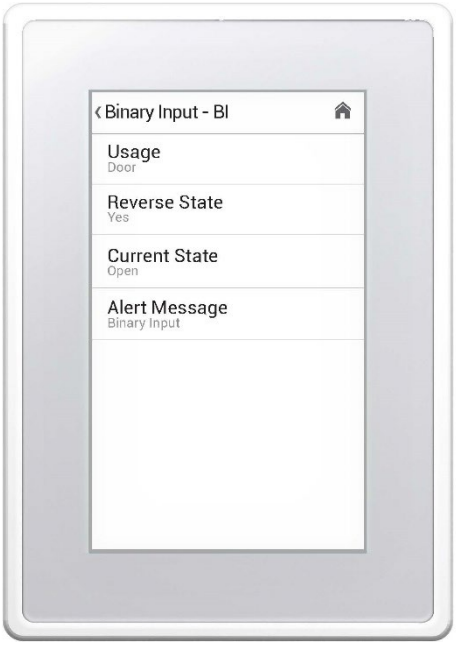
1. Room mode switch/button
2. BACnet
3. Binary Input
4. Configurable Input

Inputs – Pressure Sensor 1, Pressure Sensor 2, Pressure Sensor 3

Pressure Sensor 1, Pressure Sensor 2, and Pressure Sensor 3 have the following options.

Menu Item	Available Options/Range	Description
Reverse Sensor Reading	No Yes	Gives the user the option to reverse the direction of the pressure reading if the pressure sensor was installed backwards.
Scale Factor	0.50 to 2.00	Use this setting to adjust the room pressure reading to match a reading taken by a manometer. e.g. If a balancer's reading is 10% higher than the PMT's reading, set the scale factor to 1.100. Default: 1.000 (No adjustment).
Offset (Applied after Scale Factor)	-0.0050 to 0.0050	This setting applies a fixed offset to the room pressure reading. DO NOT use this value as the primary adjustment method to the room pressure reading. Use only if required when performing a calibration at two or more pressure readings. Default: 0.0000 in.w.c.
Sensor Averaging	5 seconds 10 seconds 15 seconds 20 seconds 30 seconds 40 seconds 1 minute	Allows the user to set the sensor averaging time. Default: 10 seconds.
Pressure Sensor Connected	Read Only	Displays the state of the pressure sensor connection.
Pressure Sensor Value	Read Only	Displays the current pressure sensor value. This is the same reading as displayed on the main screen. Scale factors and offset are applied.
Ping Pressure Sensor	No Yes	Identifies which sensor is connected as Pressure Sensor 1. The SRPS that is pinged will be indicated by a flashing Status light on the SRPS.

Inputs – Binary Input - BI

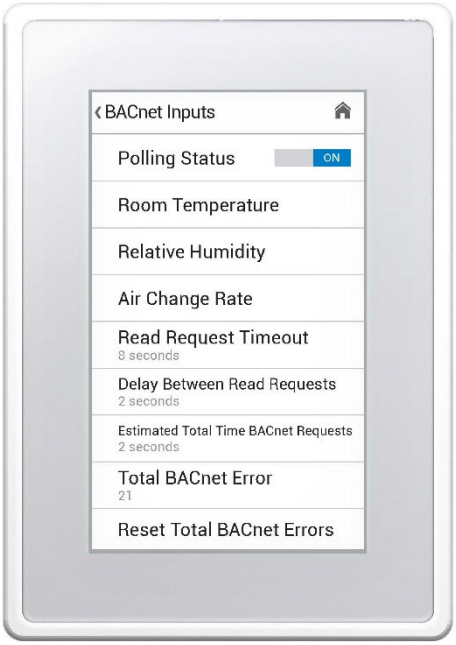


Menu Item	Available Options/Range	Description
Usage	None	The Binary Input is not tied to any functionality within the PMT. Its current state is visible to the BACnet front end.
	Door	This allows the user to configure a door switch. Once selected for the Binary Input, the user must configure the "Door Switch" setting under the Alarms menu.
	Setback	When the Binary Input is open/closed the monitor will change to Setback mode.
	Alarm	When the Binary Input is open/closed the monitor will go into Alarm mode.
	Caution	When the Binary Input is open/closed the monitor will go into Caution mode.
Reverse State	No Yes	Allows the user to reverse the action of the Binary Input.
Current State	Read Only	Displays the current state of the Binary Input.
Alert Message	User defined	Allows the user to configure the alert message on the home screen. Only available when BI Usage is set to Alarm or Caution.

Inputs – Configurable Input - CI

Menu Item	Available Options/Range	Description
Usage	None	The Configurable Input is not tied to any functionality within the PMT. Its current state is visible to the BACnet front end.
	Door	This allows the user to configure a door switch. Once selected for the Configurable Input, the user must configure the "Door Switch" setting under the Alarms menu.
	Setback	When the Configurable Input is open/closed the monitor will change to Setback mode.
	Alarm	When the Configurable Input is open/closed the monitor will go into Alarm mode.
	Caution	When the Configurable Input is open/closed the monitor will go into Caution mode.
	Room Mode	When a room mode switch/button is enabled, the Configurable Input will have full control of the room mode. It allows the user to change between Setback and Isolation mode.
Reverse State	No Yes	Allows the user to reverse the action of the Configurable Input.
Current State	Read Only	Displays the current state of the Configurable Input.
Alert Message	User defined	Allows the user to configure the alert message on the home screen. Only available when CI Usage is set to Alarm or Caution.

Inputs – BACnet Inputs



Menu Item	Available Options/Range	Description
Polling Status	On Off	Allows the user to enable polling to monitor BACnet points for Room Temperature, Relative Humidity and Air Change Rate.
Room Temperature	See next page	Allows the user to configure the BACnet settings to display Room Temperature from a BACnet MS/TP device. After pressing on Room Temperature, a list of available rooms to configure will be shown.
Relative Humidity	See next page	Allows the user to configure the BACnet settings to display Relative Humidity from a BACnet MS/TP device. After pressing on Relative Humidity, a list of available rooms to configure will be shown.
Air Change Rate	See next page	Allows the user to configure the BACnet settings to display Air Change Rate from a BACnet MS/TP device. After pressing on Air Change Rate, a list of available rooms to configure will be shown.
Read Request Timeout	0 to 10 seconds	Allows the user to configure the time until a new BACnet request is sent after a BACnet Timeout error occurs. Alternatively, Read Request Timeout can be changed on the BAS by changing the APDU Timeout value. The APDU Timeout value is in milliseconds.
Delay Between Read Requests	0 to 60 seconds	Allows the user to configure the time between BACnet read requests.
Estimated Total Time BACnet Requests	Read Only	Displays the approximate total time of a BACnet request.
Total BACnet Error	Read Only	Displays the total number of errors BACnet has received. The maximum total BACnet error value that can be displayed is 100.
Reset Total BACnet Errors	Yes No	Resets the value of total BACnet errors.

NOTE: BACnet monitoring for Room Temperature, Room Humidity, and Air Change Rate is limited to a maximum number of rooms as there are SRPS sensors connected to the PMT, i.e. the user cannot set the PMT to display Room Temperature from two rooms if only one is connected to the PMT.

Inputs – BACnet Inputs (Room Temperature, Relative Humidity, Air Change Rate)

The below menu is typical for the configuration of each monitoring point for Room Temperature, Relative Humidity and Air Change Rate in each room.

Menu Item	Available Options/Range	Description
Enabled	On Off	Enables monitoring of the BACnet point. Once the user enables monitoring for this point, the user will be allowed access to the following options.
Device Instance	0 to 4194303	Allows the user to input the device instance value.
Object	AI AV AO	Allows the user to choose the object type for the monitored point.
Object Id	0 to 65535	Allows the user to input the Object Id value.
Current Value	Read Only	Displays the current reading for the monitored point.
Error Message	Read Only	Displays one of the following error messages associated with a BACnet communication error.
	Disabled	The BACnet Input is not enabled.
	Timeout	BACnet connection with the device could not be found on the BACnet network.
	Unknown Device	The entered Device Instance could not be found on the BACnet network.
	Unknown Object	The entered Object or Object Id could not be found on the BACnet network.
	Error Class: **XX** Error Code: **XX**	Where **XX** will be the decimal number of the BACnet error code.
	None	No BACnet errors are present.

CAUTION ▼

Any devices being used for Temperature, Humidity, or Air Change Rates must be located on the same BACnet MS/TP trunk as the PMT.

Outputs

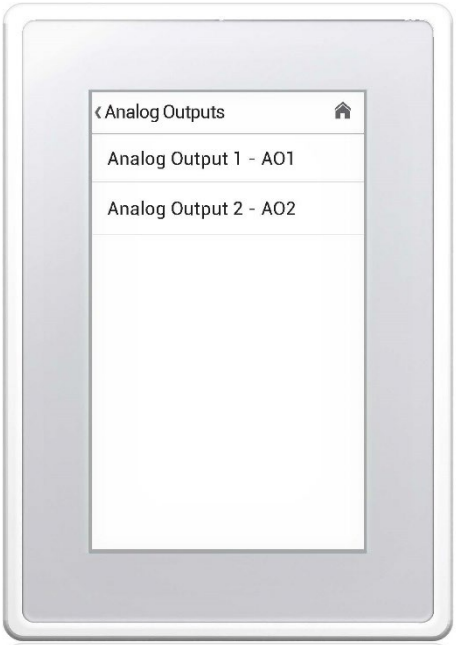
The Output menus allow the user to configure all the Binary and Analog Outputs for a variety of different applications.

Menu Item	Description
Binary Output - BO	Used to set the usage of the Binary Output between multiple types of usages.
Analog Outputs- AO	Used to set the usage of the Analog Outputs between multiple types of usages.

Outputs – Binary Output - BO

Menu Item	Available Options / Range	Description
Usage	None	The Binary Output is unused.
	Alarm	The BO will be active when the monitor goes into Alarm while in Isolation Mode.
	Caution	The BO will be active when the monitor goes into Caution while in Isolation Mode.
	Normal	The BO will be active when the monitor is in normal operation while in Isolation Mode.
	Setback	The BO will be active when the monitor is in Setback mode.
	Door Status	The BO will be active when the door is open/closed (depending on the door switch state).
	Binary Input – BI	The BO will follow the status of the Binary Input.
	Configurable Input – CI	The BO will follow the status of the Configurable Input.
	Low Pressure	The BO will be active when the room pressure is below the set Low Pressure Limit.
	High Pressure	The BO will be active when the room pressure is above the set High Pressure Limit.
Reverse State	No Yes	Allows the user to reverse the action of the Binary Output.
Current State	Read Only	Displays the currents state of the Binary Output.

Outputs – Analog Outputs



The PMT has two available Analog Outputs. AO1 and AO2 have the following options.

Menu Item	Available Options / Range	Description
Usage	None	The Analog Output is unused.
	Pressure -0.1 to 0.1 in.w.c. (-25 to 25 Pa)	The AO will be scaled proportionally from a -0.1 to +0.1 in.w.c. (-25 to 25 Pa) over 0 VDC to 10 VDC. • 0 VDC will correspond to -0.1 in.w.c. (-25 Pa) • 10 VDC will correspond to +0.1 in.w.c. (25 Pa) This value can be programmed for Pressure Sensor 1, 2, or 3.
	Pressure 0 to -0.1 in.w.c. (0 to -25 Pa)	The AO will be scaled proportionally from 0 to +0.1 (0 to 25 Pa) in.w.c. or 0 to -0.1 in.w.c. (0 to -25 Pa) over 0 VDC to 10 VDC. • 0 VDC will correspond to 0 in.w.c.(0 Pa) • 10 VDC will correspond to either +0.1 in.w.c. or -0.1 in.w.c. (25 Pa or -25 Pa) This value can be programmed for Pressure Sensor 1, 2, or 3.
	Pressure – Alarm	The AO will output the active value (voltage) when the room is in Pressure – Alarm mode.
	Pressure – Caution	The AO will output the active value (voltage) when the room is in Pressure – Caution mode.
	Pressure – Normal	The AO will output the active value (voltage) when the room is in Pressure – Normal mode.
	Setback	The AO will output the active value (voltage) when the room is in Setback mode.
	Door Status	The AO will output the active value (voltage) based on the door switch status.
	Binary Input – BI	The AO will output the active value (voltage) based on the current status of the Binary Input.
	Configurable Input – CI	The AO will activate based on the Configurable Input status.
	Low Pressure	The AO will output the active value (voltage) when room pressure is measured below the set Low Pressure Alarm threshold when the room is in Isolation mode.
	High Pressure	The AO will output the active value (voltage) when room pressure is measured above the set High Pressure Alarm threshold when the room is in Isolation mode.
Inactive Value	0.00 to 10.00 VDC	Sets the output voltage when the Analog Output is inactive. This value is not configurable when "Pressure -0.1 to 0.1 in.w.c." and "Pressure 0 to -0.1 in.w.c." are selected.
Active Value	0.00 to 10.00 VDC	Sets the output voltage when the Analog Output is active. **NOTE:** This value is not configurable when Usage is set to "Pressure -0.1 to 0.1 in.w.c." or "Pressure 0 to -0.1 in.w.c."
Current Voltage	Read Only	Displays the current output voltage of the analog output.

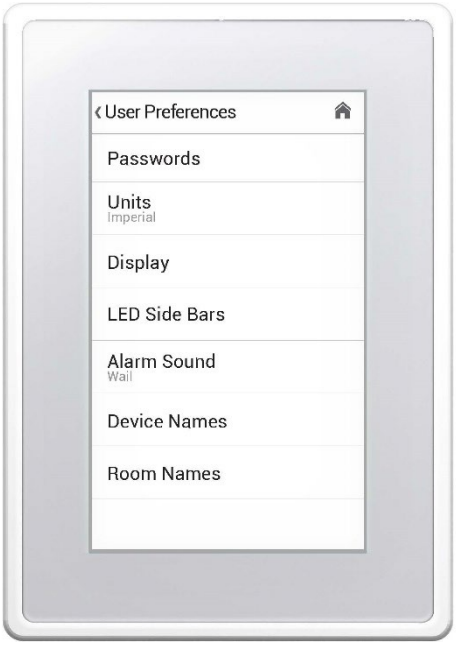
Network

The Network menu is used to access all options for the BACnet communication. The PMT has native BACnet available as standard.

Menu Item	Available Options / Range	Description
Connection Type	Disabled BACnet	Allows the user to enable/disable BACnet communication. If BACnet is not configured in the Setup Wizard, this will default to disabled.
MAC Address	1 to 127	Allows the user to set the BACnet MS/TP address. **NOTE:** Ensure that no duplicate MAC addresses exist on any network segment.
Device Instance	1 to 4,189,999	This is the BACnet address and must be unique on your building site.
Baud rate	9,600 19,200 38,400 76,800	This sets the BACnet MS/TP Baud Rate. All devices on a BACnet segment must run at the same Baud Rate.
Write Settings Over BACnet	Disabled Standard Open	This sets the write privilege of the device. See the BACnet points list in the Touchscreen Room Pressure Monitor (PMT) Product Submittal at AntecControls.com for the write privileges for each of these selections.

User Preferences

User Preferences can be used to change display settings, alter passwords, adjust the color scheme and rename the device.



Menu Item	Available Options / Range	Description
Passwords	0-0-0-1 to 9-9-9-9	Enable or disable the room mode password. Allows the user to set the room mode password. Setting the password to 0-0-0-0 will disable the password. Default: 1-2-3-4
	1-0-0-0 to 9-9-9-9	Allows the user to set the settings menu password. Default: 1-6-6-4
Units	Imperial Metric	Enables how units appear on the device and BACnet.
Display		Adjust the display settings, including Home Screen configuration, brightness, inactivity dim, and inactivity timeout.
LED Side Bars	Off Solid Color Blink Color	This menu allows the user to set the action of the LED Side Bars during each different mode. The sidebar brightness can also be adjusted in this menu. Blinking lights are available only for Caution and Alarm modes.
Alarm Sound	No Tone Steady 2KHz Wail Red Alert	This sets the type of alarm the PMT will emit.
Device Names	User defined	Allows the user to set the name of the PMT that appears as the BACnet device name.
Room Names	User defined	Allows the user to set the names of the rooms associated with each of the sensors. It is recommended that the rooms are very clearly named to easily identify the rooms on the Home Screen.

User Preferences - Display

Menu Item	Available Options / Range	Description
Display Configuration		Allows the user to change the order of the displayed sensors on the Home Screen.
Display Brightness		Set the active display brightness.
Dim Inactive Display	No Yes	Allows the user to dim the display when inactive.
Inactivity Timeout	15 seconds 30 seconds 1 minute 2 minutes 10 minutes 30 minutes	Set the length of time before the display will dim. Default: 15 seconds.
Single Room Page Type	Multi Page Single Page	Set the page type between multi and single. Only available when monitoring a single room.

Diagnostic

The Diagnostic menu is used to display critical information for the PMT including device up time, the connection state of the pressure sensor as well as the current pressure reading. This menu can also be used to power cycle the PMT and restore factory defaults.

Menu Item	Available Options / Range	Description
System Up Time	Read Only	Displays the elapsed time since last power cycle of the PMT.
Pressure Sensor Connection Status	Read Only	Displays the connection state of the pressure sensor.
Pressure Sensor Readings	Read Only	Displays the current sensor readings from each of the connected sensors.
Restore Factory Defaults	No Yes	This resets the PMT to factory defaults, restarts the device, and then prompts the user to navigate the Setup Wizard.
Reset Device	No Yes	This option will power cycle the PMT.

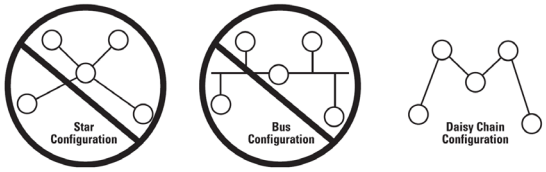
About

The About menu displays current information pertaining to the device operating system and version numbers.

Menu Item	Available Options / Range	Description
Model	Read Only	Displays the model, PMT.
Application Version	Read Only	Displays the current operating system application version.
Firmware Version	Read Only	Displays the current firmware version.
Operating System Version	Read Only	Displays the current operating system version.
Kernel Version	Read Only	Displays the current kernel version.
Sensor Information	Read Only	Displays the Hardware and Software information for each of the connected pressure sensors.

TROUBLESHOOTING

The following information is provided in the event the PMT does not appear to be functioning normally after installation.

Problem	Solution
BACnet Communication Errors	1. BACnet 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.  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 will make troubleshooting difficult. Correct polarity is imperative on MS/TP wiring. Always ensure that the positive terminal on a device has the same color wire connected to it throughout the network and same for the negative terminal, e.g. two wire conductor with black and white wire – black to the positive terminal and white to the negative terminal. Keep this consistent throughout the network. 2. The network should be terminated twice: once at the beginning and again at the end of each run. This is strongly recommended. The network speed or Baud Rate must be the same throughout the network. NOTE: The default speed for Antec Controls BACnet MS/TP controls is 76,800. BACnet MS/TP currently supports 4 standard speeds which are: 9,600, 19,200, 38,400, 76,800. 3. 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 an Antec Controls product onto an existing network. Determine the existing addressing scheme for the existing network. The address is set using the Network Service menu. 4. Grounding and 24 VAC 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 24 VAC transformer common/neutral used to power the controls. Connect the "common/neutral" wire of the secondary side of the transformer to earth ground – such as the ground screw in the electrical box. 5. Reset the Total BACnet Errors value in the BACnet Inputs menu. If the Total BACnet Errors value changes to zero and continues to increase, an error is present. Check the Error Message for each configured BACnet Input. Timeout: Ensure the device that the PMT is polling from has 24 VAC power. Check the BACnet wiring that connects the PMT to the device the PMT is polling from. Ensure the wires are correct and seated properly. Unknown Device: Ensure the device that the PMT is polling from has 24 VAC power. Check the Device Instance of the device the PMT is polling from. Ensure the Device Instance input on the PMT matches. Check the Baud Rate of the device the PMT is polling from. Ensure the Baud Rate on the PMT matches. Check the BACnet wiring that connects the PMT to the device the PMT is polling from. Ensure the wires are correct and seated properly. Unknown Object: Check the Object Id and Object Type of the object the PMT is polling from. Ensure the Object Id and Object Type inputs on the PMT matches. Error Class: xx / Error Code: xx: The BACnet error class and code can be searched on the Internet, which will indicate the corresponding error message. See the Technical Support section of this manual if additional service is needed. NOTE: Reversing 24 VAC hot and common will cause the BACnet MS/TP network to stop communicating. Ensure hot and common are not reversed on any controllers. 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.

PMT is Non-Responsive	Check the power connection to the PMT. Ensure the monitor has 24 VAC power with a voltmeter. Cycle power to the monitor.
Binary Output Not Functioning	Ensure the PMT has 24 VAC power. Ensure the Binary Output has been configured to the appropriate usage.
Analog Outputs Not Functioning	Ensure the PMT has 24 VAC power. Ensure the Analog Output has been configured to the appropriate usage. Using a voltmeter, confirm that there is a voltage output between 0 to 10 VDC. Ensure the output terminal or wire is not shorted to ground or power connection.
PMT Alarms – Missing Pressure Sensor	Ensure Pressure Sensor is connected. Check the Pressure Sensor cable for damage. Ensure the Pressure Sensor is powered.
Unable to Maintain Room Pressure	Ensure low and high-pressure alarms and cautions are set to the scheduled values. Ensure room is tightly sealed. This includes checking door jams and the gap underneath the door.
PMT Screen Not Clearly Visible (dim)	Adjust the brightness settings under User Preferences.
PMT Will Not Allow Room Mode to be Changed	Check the state of the configurable input and the binary input. If one of these inputs is set to control the setback mode, the PMT will not allow a user to switch room mode with this input.
Pressure Reading Frozen or Less Responsive	Check pressure line to sensor and ensure it is not kinked and is properly seated on nipple. Verify averaging time set in Input menu.
Pressure Reading Inaccurate or Unstable	Check draft from nearby diffusers. Ensure there is no air stream in front of sensor. Ensure airflow is not blowing directly over sensor.
	Check the pressure tubing for any kinks or blockages. To clear any blockages in the tubing, disconnect the pressure tubing from the SRPS and blow on the tubing.
	Check the pressure sensor for any blockages. To clear any blockages in the pressure sensor itself, blow gently on the tubing while it is connected to the SRPS.
	Check the tubing length. If the tubing is >10 ft (3.05 m) of total length there may be issues with signal degradation.
	Ensure that the tubing for the SRPS isn't connected to any other pressure measurement devices.
PMT Screen Does Not Power Up	Re-seat SD card on the back of the PMT.
Pressure Sensor is not detected or missing	Verify wiring matches the typical SIN wiring. LED Code for the SRPS: Steady ON: No request from the PMT. The sensor is not communicating. Flashing green: Currently responding to a PING request from the PMT. Steady OFF: Transmitting data to the PMT. If the PMT does not request data for 5 seconds, the light turns back on. When the light is off (and the sensor is powered up) you know that it has been recognized by the PMT and is sending data.
PMT is showing White LED Sidebars	Check the power connection to the PMT. Ensure the monitor has 24 VAC power with a voltmeter and that the transformer is appropriately sized (>34 VA). Cycle power to the monitor.
PMT is alternating White and Red LED Sidebars	May indicate that power is inconsistent or has dropped below 18 VAC. Ensure the monitor has 24 VAC power with a voltmeter and that the transformer is appropriately sized (>34 VA). Cycle power to the monitor.

If the settings password is forgotten, contact Antec Controls to reset.

Replacement Parts

Replacement parts are available. Please contact your local Antec Controls Representative.

Technical Support

If technical support is required, please contact us:
By Email: Applications@AntecControls.com
By Phone: 866.884.3524
Hours of Operation: Monday – Friday, 8:00 AM to 4:30 PM CST

NOTE: If you will need support after hours, please contact us 48 hours in advance.

ANTEC controls by price

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