

1 Overview

The Cypress EnviroSystems Wireless Pneumatic Thermostat (WPT) retrofits an existing pneumatic thermostat to provide Direct Digital Control (DDC) like zone control functionality at a fraction of the time and cost without disturbing occupants.

The WPT enables remote monitoring of zone temperature, branch pressure, remote control of setpoints, and programmable setback or setup of the pneumatic HVAC systems. It also enables integration with utility Demand Response programs.

The WPT Demo System is a mock-up of an installed WPT system. The demo system allows a user to demonstrate how the WPT reacts to setpoint changes, and how to navigate the web application.

1.1 Components

The WPT Demo System includes the following components:

- WPT Demo Stand, consisting of a WPT mounted on a display stand along with a pressure regulator, main pressure gauge, branch pressure gauge and pneumatic connections
- Compressor with a hose
- USB HUB (HUSB) with external antenna
- CR123 Batteries (x2)
- 2MM hex Allen wrench
- 1/16" hex Allen wrench
- WPT Demo Laptop with power adaptor

2 WPT Demo System Setup

The overall WPT Demo System setup procedure includes:

- Starting the WPT Demo Laptop
- Connecting the HUSB to the laptop
- Setting up the WPT Demo Stand
- Calibrating the WPT
- Accessing the WPT web application

Important:

Please make sure to follow the procedure in the same order mentioned below to ensure a smooth demo setup.

Please **DO NOT** change the system configuration or install other software applications in the WPT Demo Laptop as it may cause the WPT Demo application to malfunction.

2.1 Start the WPT Demo Laptop

1. Set the WPT Demo Laptop in a secure location.
2. Connect the power adapter to the laptop.



Connect the
power adapter

Figure 1. WPT Demo Laptop

3. Turn ON the laptop power and login to Windows:

Username: cypress

Password: cypress123

2.2 Connect the HUSB to the Laptop

Connect the external antenna to the HUSB and connect the HUSB to the USB port of the laptop.



Figure 2. Connecting the HUSB to the Laptop

2.3 Setup the WPT Demo Stand



Figure 3. WPT Demo Stand

1. Connect the compressor air hose to the pressure regulator.
2. Connect the compressor power cable to a power socket and turn ON the compressor.
3. Open the front cover of the WPT, insert batteries, replace the cover, and press any button to turn it ON.

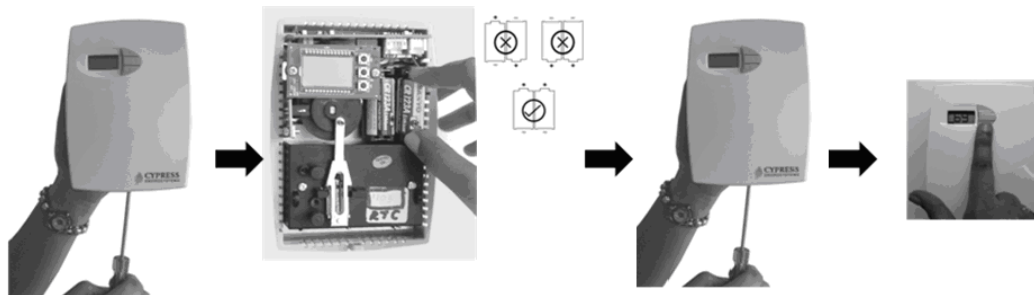


Figure 4. Starting the WPT

4. Adjust the main pressure to 20 PSI using the **Main Pressure Regulator** knob.
5. Adjust the WPT setpoint to 55°F and verify that the branch pressure increases above 13 PSI.
6. Adjust the WPT setpoint to 85°F and verify that the branch pressure drops below 3 PSI.

Note: If branch pressure does not change when increasing and decreasing the WPT setpoint, recalibrate the WPT per Section 2.4.

2.4 Calibrate the WPT

Note: This section is only required if the WPT does not respond as expected during startup in Section 2.3.

WPTs may go out of calibration due to movement during travel. Use the following procedure to calibrate the WPT.

1. Remove the front cover of WPT. Allow the WPT to acclimatize to the ambient temperature. This can take 5 to 10 minutes after setting the demo stand in place.

Note: The bi-metallic spring is very sensitive to body heat. Keep hands away from and do not breathe directly on the WPT to minimize calibration errors.

2. Adjust the main pressure to 20 PSI using the Main Pressure Regulator knob.
3. The black throttling range adjuster has been factory set to the location marked on the lever as shown in Figure 5. The factory setting provides a Throttling Range of about 4°F. The bi-metallic strip can be damaged if enough care is not taken while moving the throttling range adjuster. Use a gentle nudging motion on the throttling range adjuster, without exerting force on the bi-metal strip as this type of force will likely damage the bi-metallic strip.

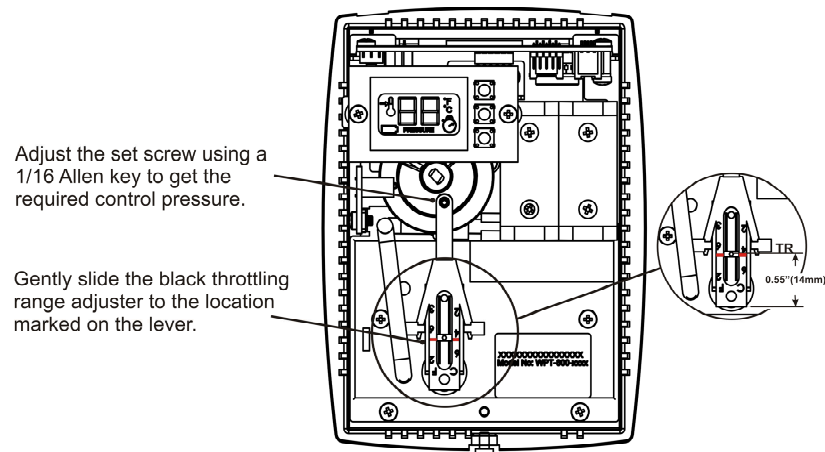


Figure 5. Calibrating the WPT

4. Adjust the setpoint manually using the ▲ and ▼ keys to match the ambient temperature value displayed on the LCD. Press OVR to confirm.
5. Set the WPT to the branch line pressure measurement mode. Press the OVR and ▼ keys simultaneously, then press OVR four times.

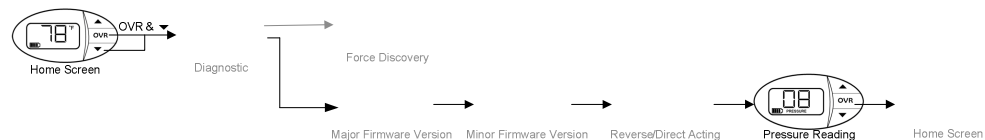


Figure 6. Accessing the Pressure Measurement Mode on the WPT

6. Use a 1/16" hex Allen wrench and very carefully turn the calibration set screw on the thermostat lever as shown in Figure 5, until the branch pressure reads around 8 PSI. Use extreme caution not to allow the lever to rotate sideways while adjusting the setscrew. Damage to the bi-metallic spring can result if the end of the lever is allowed to move left, or right, by more than 1/16". Note down the temperature displayed on the LCD. It should be consistent with the ambient temperature of the environment.

Note: Turning the calibration set screw clockwise decreases the branch pressure and turning it counter-clockwise increases the branch pressure.

2.5 Access the WPT Web Application

Open the Internet Explorer and type the URL <http://localhost/> to access the WPT web application.

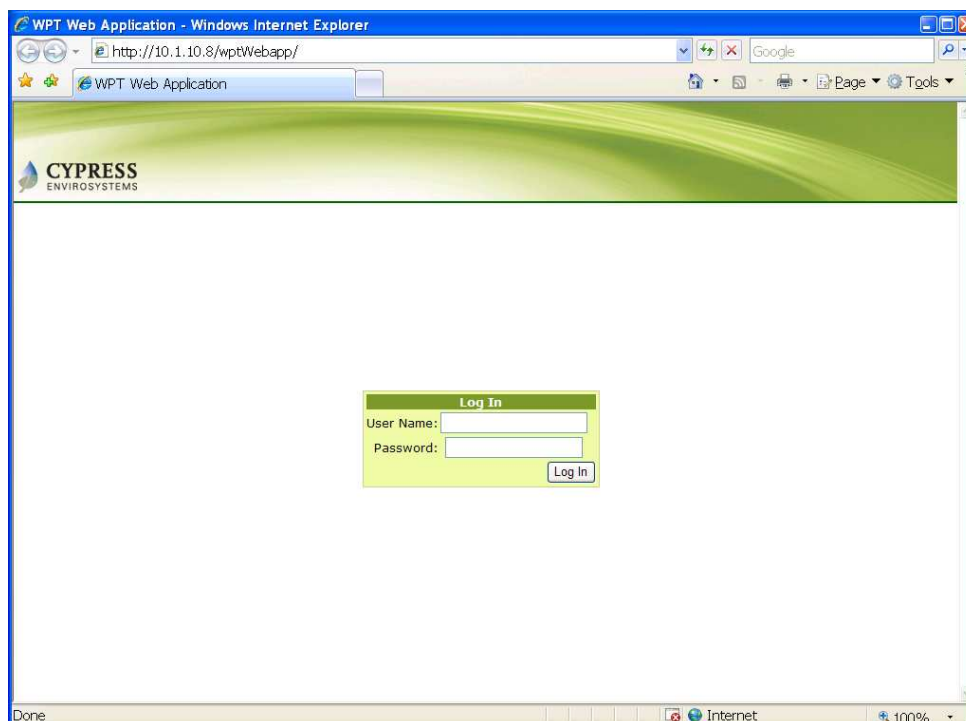


Figure 7. Accessing the WPT Web Application

Login to the WPT Web Application using the following information:

Username: demo

Password: demo

The Dashboard will be displayed with the latest reading and the current timestamp.

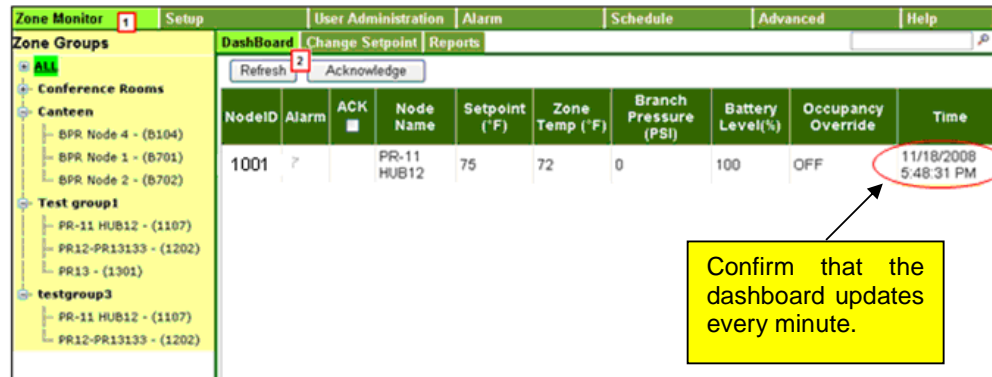


Figure 8. WPT Web Application Dashboard

Change the setpoint from the WPT Web Application. Confirm that the setpoint is updated on the WPT within 1-2 minutes.

Note: After the setpoint is changed on the WPT, it takes an additional 1 minute before the new setpoint value is updated on the dashboard. Pressing the keypad while WPT is updating the setpoint may delay the update time.



Figure 9. Changing the Setpoint

Return to the Dashboard and click the **Refresh** button 1 minute after the setpoint changes on the WPT to confirm the new setpoint on the Dashboard.

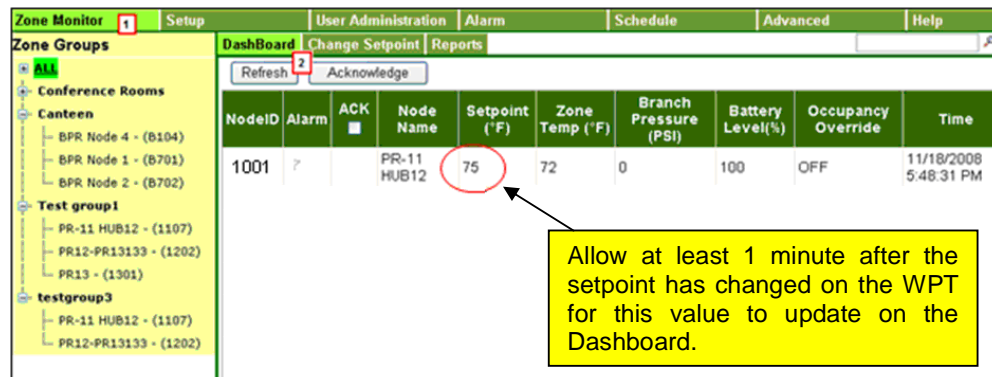


Figure 10. Setpoint Update on the Dashboard

3 Troubleshooting the WPT Demo System

Symptoms / Error	Solutions
WPT Demo Laptop not booting	Check the power supply to the WPT Green Box.
The branch pressure does not change by changing the setpoint	Check the Main pressure and calibrate the WPT, if required.
WPT USB Reader Application is not visible	If the WPT USB Reader application is closed, restart it by double clicking on the "WPT_USBReader" icon on the WPT Green Box Desktop.
Latest WPT readings are not updated on the Dashboard	Click Refresh button on the Dashboard Check and make sure the WPT USB Reader application is running. Check and make sure the WPT's Network ID is 1 and Node ID is 1001 If problem persists, restart the laptop.

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