

# **Wireless Advanced Accessible Pedestrian System (WiAAPS) Installation Guide**

**906-0033**

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# PedSafety

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# WiAAPS Installation Guide

## 906-0033

Revision History			
Revision	Revised By	Revisions	Date
A	Brad		5/16/17
B	Brad		1/29/18
C	Travis	Updated plus added Wave	2/09/21



WiAPB  
 With Wayfinding Sign

WiAPB Wave

WiAPC

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## 2 Introduction

### 2.1 Purpose of this document

This guide covers the installation of the Wireless Advanced Accessible Pedestrian System (WiAAPS) and its related components, Wireless Advanced Push Button (WiAPB), Wireless Advanced Pedestrian Coordinator (WiAPC) and termination board. It does not cover the configuration of the WiAAPS. For details on configuring the WiAAPS, please see the User's Manual.

### 2.2 Additional Information

- See the WiAAPS User's Manual for operational information
- Reference the PedSafety, Intersection Planning Worksheet included with the shipment for location specific information
- See the Installation Quick Guide for a brief graphical installation guide.
- See the APB Mounting Template for an easy to use hole pattern for mounting the WiAPBs.

### 2.3 Contact Information

The first line of contact should be the distributor that the system was purchased from. If you are unable to contact the distributor, contact PedSafety directly.

## 3 Installation

### 3.1 Standard Components

WiAPB 4.0 (two mounting screws on tactile arrow)	WiAPB 5.0/ WiAPB Wave (single mounting screw on tactile arrow)
<ul style="list-style-type: none"> <li>• 1ea Guardian Base Station               <ul style="list-style-type: none"> <li>○ 2ea 1/4-20 x 1" FHP</li> </ul> </li> <li>• 1ea Terminal Door               <ul style="list-style-type: none"> <li>○ 2ea 8-32 x 3/8" Torx Screws</li> </ul> </li> <li>• 1ea USB (type B) cable per installation</li> <li>• 1ea 5x7.75" Sign               <ul style="list-style-type: none"> <li>○ 4ea. 8-32 x 3/8" PHP Screws</li> </ul> </li> <li>• Or 1ea 9x12" or 9x15" Adapter Plate and Sign               <ul style="list-style-type: none"> <li>○ 4ea. 8-32 x 5/8" FHP Screws</li> <li>○ 4ea. 8-32 x 1/4" PHP Screws</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 1ea Guardian Base Station               <ul style="list-style-type: none"> <li>○ 2ea 1/4-20 x 1 ¼" Hex Head Cap</li> <li>○ 2ea Star Lock Washers</li> </ul> </li> <li>• 1ea Terminal Door               <ul style="list-style-type: none"> <li>○ 2ea 8-32 x 3/8" Torx Screws</li> </ul> </li> <li>• 1ea USB (type B) cable per installation</li> <li>• 1ea 5x7.75" Sign               <ul style="list-style-type: none"> <li>○ 4ea. 8-32 x 3/8" PHP Screws</li> </ul> </li> <li>• Or 1ea 9x12" or 9x15" Adapter Plate and Sign               <ul style="list-style-type: none"> <li>○ 4ea. 8-32 x 5/8" FHP Screws</li> </ul> </li> <li>• 4ea. 8-32 x 1/4" PHP Screws</li> </ul>

### 3.2 Installation

It is recommended to use an anti-seize compound on all screws going into the WiAPB. Failure to do so may result in damage to the WiAPB if removal is necessary.

#### 3.2.1 Warranty Void

Do not connect the 120 VAC to the 2 position field wire terminals on the WiAPB as this will cause damage to the unit AND will void terms and conditions of the warranty agreement. Do not install the WiAPB upside down. The wiring terminals must be at the bottom of the WiAPB. Installing the WiAPB upside down will void terms and conditions of the warranty agreement.

#### 3.2.2 Tactile Arrow Orientation

Mount the WiAPB with the tactile arrow pointing directly to the crossing destination THE PEDESTRIAN RELIES ON THIS INFORMATION TO CROSS SAFELY. The tactile arrow is field selectable (left or right) and may be installed at the factory or shipped separately in the box. Installation requires one or two security screws depending on the model and a special bit. PedSafety provides this hardware with the shipment.

### 3.2.3 Angle Mounting

An Angle Mounting Kit (PN 502-0951) is available if necessary to ensure a precise fit, especially on decorative or small diameter poles where the APB needs to be angled to provide accurate directionality of the arrow. This kit contains bumper screws and a chase cover to cover the wiring chase on the back of the unit. A Swivel Mounting Bracket (PN 5030207) is available for larger angular adjustments.

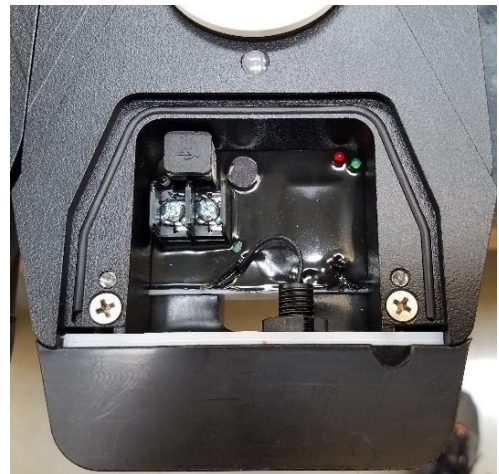
Angle adjustments of up to 85 degrees can be obtained with the Swivel Bracket installation, or use the Angle Mounting Kit for smaller angle adjustments.

### 3.2.4 WiAPB Installation

Each WiAPB is pre-configured at the factory for a specific location as reflected by the Intersection Planning Form. If the WiAPBs are not installed in the correct locations, the audio messages may not be correct, in addition units in the wrong position can affect phasing and could direct a pedestrian to cross when it is unsafe.. Incorrect messages are a safety hazard. The WiAAPS should not be left running in this situation. If the WiAPBs are not installed in the correct position, see the WiAAPS User's Manual on how to re-configure them.

#### Mounting the APBs

1. Refer to the APS APB Mounting Template for hole specifications.
2. Mark the point where the center of the pushbutton on the WiAPB will be centered 42" to 48" from the ground.
3. Drill and tap for a 1/4-20 screw 2" above APB center.
4. Drill and tap for a 1/4-20 screw 8 1/2" above APB center.
5. Drill a 1" through hole. This hole can be anywhere from 2 1/4" to 5 1/2" below the lower of the 2 mounting holes (from step 3 above).
6. Loosely attach the APB to the pole one of the two 1/4 - 20 FHP screws in the top mounting hole. This will allow the APB to hang freely while completing the wiring steps.
7. Route the field wiring from the pole through the wire chase at the bottom of the APB.
8. Connect cabinet field wires to screw terminals on the PCBA.
9. Install and tighten the second 1/4 - 20 FHP mounting screw, and tighten the screw loosely installed in step 6 above.
10. Secure protective terminal door with screws.
11. Attach the adapter plate and/or sign using provided hardware.
12. Repeat these steps for all APBs at the intersection.



## 3.2.5 WiAPC Installation

### Mounting the WiAPC Termination Board

1. Locate a rail that spans the entire side of the cabinet wall to mount the termination board shown in Figure 1. It is recommended to choose an area at the bottom of the cabinet close to the entrance of the pedestrian field wires.
2. The termination board back plate has two 1/4" holes for fastening the plate on a cabinet rail. With two 1/4-20 x1/2" PHP, secure the back plate onto the cable rail.
3. Identify the pedestrian field wires that will land on the termination board. With any pair of field wires (WiAPBs do not need to be in any particular order), connect both wires in sequential order to the terminal block. Strip the field wire ends to 1/4" and slide them into the corresponding female terminal connection. Tighten the set screw above to ensure a good connection. Repeat for the remaining field wires.
4. Attach the 7 ft. two wire power cable from the 2-position terminal on the Termination Board to the WiAPB Output connection on the WiAPC.

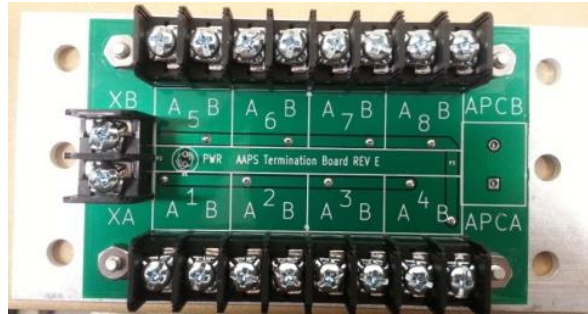


Figure 1. Termination Board

### Installing the WiAPC

1. Place the WiAPC on shelf inside the cabinet. If shelf space is limited, PedSafety provides optional mounting solutions.
2. When installing the antenna on the outside of the cabinet, try to get the best line of sight to as many WiAPBs as possible. Ideal location of the antenna is on the side of the cabinet
3. Connect the antenna cable connector to the connector on the top of the APC. Antenna extension cables are available from Campbell Company if the attached antenna cable is not long enough to reach the desired antenna mounting location.



Figure 2

### Installing the Input Cable (DB25)

1. Identify the outputs to the pedestrian display from the traffic controller cabinet for the pedestrian phases. Reference the intersection planning form that came with the shipment to identify the pedestrian phases (P2, P4, P6, P8, etc.) required.
2. Route the DB25 WiAPC input cable in Figure 3 from the front of the WiAPC to the traffic controller cabinet load switch outputs. Secure the excess cable in a loop and tie neatly to avoid confusion.



3. Attach the WiAPC input connections to Pedestrian Display Outputs (W and DW), and ground to traffic controller cabinet Pedestrian Display Outputs. See the Installation Quick Guide for wiring colors and labels.



Figure 3. DB25 APC Input Cable

#### Installing the WiAPC Output Cable (DB9)

1. Identify the pedestrian pushbutton inputs in the traffic controller cabinet (PB2, PB4, PB6, PB8, etc.)
2. Route the DB9 WiAPC output cable in Figure 4 from the front of the WiAPC to the pedestrian pushbutton inputs.
3. Attach the WiAPC output connections PB1 – PB8 to the cabinet's pushbutton inputs, and GND to the cabinet's pushbutton input common. See the Installation Quick Guide for wiring colors and labels.



Figure 4. DB9 APC Output Cable

#### Connect 120 VAC

1. Make sure the power switch is in the OFF position before attaching the 120 VAC cord.
2. The 120 VAC power cable shown in Figure 5, or a cable with a standard 120V molded cord end is supplied with the WiAAPS system.
3. Connect the green wire to the cabinet ground.
4. Connect the blue wire to 120 VAC Neutral
5. Connect the brown wire to the 120 VAC terminal (hot) in the cabinet.
6. Note that some cables can have an alternate coloring. Green should be connected to earth ground, black to 120VAC (hot), and white to AC neutral.



Figure 5. 120VAC Power Cord

#### Power Up Sequence

1. Verify that all cables are connected to the front of the APC.
2. Turn the power switch to the RESET position allowing the APC to power up.
3. The APC display will show a green up arrow or down arrow for each APB.

#### Ethernet Connectivity to Traffic Control Network

1. See the WiAAPS User's Manual for instructions on how to connect the WiAPC to a network.

## 4 Wireless Connection

### **SEE WiAAPS USERS MANUAL FOR DETAILED OPERATIONAL INSTRUCTIONS**

1. Turn on Power to the WiAPC.
2. Verify that all the WiAPBs are now powered up
3. Press B1 on the front of the WiAPC. Verify that the display shows that all WiAPBs are at an ↑ (up arrow) status
4. If they are not, then the WiAPBs need to be manually connected. WiAPBs will not be playing any sound in this case. See the WiAAPS User's Manual for detailed instructions.
5. Log in to the WiAPC
6. Click on the "APB Setup" Tab
7. Click on "Search for APBs"
8. Note: If more addresses come up on the list than the number of WiAPBs installed in the intersection, verify the MAC address for each WiAPB before continuing.
9. Select the MAC Address and click "Add" for each of the installed WiAPBs.
10. The MAC Address for the WiAPB can also be entered manually on the APB Setup Tab.

## 5 Post Installation

### 5.1 Operational Check

1. The WiAPB comes fully configured from the factory. When first powered up, an audible locator tone will be present at the WiAPB.
2. Depress the push button for less than one second (known as a “momentary” press) and verify the red LED turns on with an audible acknowledgement message “Wait.” Verify that the pedestrian call is transmitted to the traffic controller.
3. Following a momentary press, verify the Walk message is present and the vibro-tactile button vibrates concurrently with the walk sign.
4. Repeat again with an extended press and verify the red LED turns on and an audible location message plays.
5. After the Walk message, verify an audible locator tone is present during the clearance interval (Flashing Don’t Walk).
6. Recheck all units for a full cycle to ensure all options and features operate as desired.
7. Depending on intersection location, factory default settings for volume, AGC, and vibro-tactile settings may require modifications.

### 5.2 Wave Operational Check

After completing the above operational check, and if the WiAPB is a WiAPB Wave, proceed to check the operation of the Wave sensor. This can be done in the following way.

1. Wave a hand in front of the Wave sensor. Verify the red LED turns on with an audible acknowledgment message “Wait.” Verify that the pedestrian call is transmitted to the traffic controller.
2. Following a momentary press, verify the Walk message is present and the vibro-tactile button vibrates concurrently with the walk sign.
3. Repeat again with an extended press by holding a hand in front of the unit for the extended press time. Verify that the red LED turns on and an audible location message plays.
4. After the Walk message, verify an audible locator tone is present during the clearance interval (Flashing Don’t Walk).
5. If you experience any Wave sensor settings during the operational check contact PedSafety Tech Support at 208-345-7459 option 2.

## 6 Appendix A: Acronyms, Abbreviations & Definitions

Term	Meaning
Adapter Plate	An aluminum plate that mounts to the APB to display crosswalk signs.
WiAPB	Wireless Advanced Pedestrian Button. A fully integrated accessible pedestrian station.
WiAPC	Wireless Advanced Pedestrian Coordinator
Extended Press	On APS, holding the pedestrian push button down from 1-3 seconds may activate special features, including audible beaoning and extended pedestrian clearance interval.
Intersection Worksheet	Document containing the intersection specific information including where to install APBs.
WiAPB ID	Intersection unique identification number for each WiAPB
Termination Board	Circuit board that consolidates the pedestrian field wiring to 2 wires.
MAC Address	Unique 16-digit address that identifies each individual Wireless radio.