

# Wireless Advisor Advanced Pedestrian System (WiAAPS) Installation Guide

**906-0033**

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# WiAAPS Installation Guide

## 906-0033

Revision History		
Revision	Revised By	Date
A	Brad	8/30/17



APC



APB

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## 2 Introduction

### 2.1 Purpose of this document

This guide covers the installation of the Wireless Advisor Advanced Pedestrian System (WiAAPS) and its related components, APB, APC 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 Campbell Company Message 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 APBs.

### 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 Campbell Company directly.

## 3 Installation

### 3.1 Standard Components

- 1(+) ea. APB
  - 2ea 1/4-20 x 1" FHP Screws
- 1(+) ea. Terminal Cover Plate
  - 2ea 8-32 x 3/8" Pinned Torx Screws
- 1(+) ea. 1ea 5x7 Sign
  - 4ea. 8-32 x 3/8" PHP Screws
- Or 1(+) ea. 9x12 or 9x15 Adapter Plate and Sign
  - 4ea. 8-32 x 1/2" FHP Screws
  - 4ea. 8-32 x 1/4" PHP Screws
- 1 ea. APC with Power Cable
- 1 ea. APC Input Cable (25 conductor)
- 1 ea. APC Output cable (9 conductor)
- 1 ea. 7ft Power Cable (2 conductor)
- 1 ea. Termination Board
- 1 ea. APC Antenna

### 3.2 Installation

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

#### 3.2.1 Warranty Void

Do not connect the 120 VAC to the 2 position field wire terminals on the APB station as this will cause damage to the unit. This will void terms and conditions of the warranty agreement.

Do not install the APB upside down. The wiring terminals must be at the bottom of the station. Installing the station upside down will void terms and conditions of the warranty agreement.

#### 3.2.2 Tactile Arrow Orientation

Mount the APB 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 two security screws and a special bit. Campbell Company provides this hardware with the shipment.

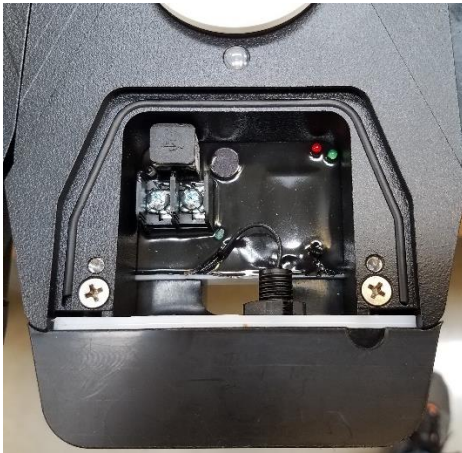
An Angle Mounting Kit is available if necessary to ensure a precise fit, especially on decorative or small diameter poles where the station needs to be angled to provide accurate directionality of the arrow. This kit contains bumper screws and a chase cover to cover the wiring chase on the back of the unit.

### 3.2.3 APB Installation

Each station is pre-configured for a specific location as reflected by the Intersection Worksheet. If the stations are not installed in the correct locations, the audio messages may not be correct. Incorrect messages are a safety hazard. The WiAAPS should not be left running as long as they are incorrect. If the stations are not installed in the correct position, see the WiAAPS User's Manual on how to re-configure them.

#### Mounting the Pedestrian Stations

1. Refer to the APS APB Mounting Template for hole specifications.
2. Mark the point where the APB will be centered 36" to 42" 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. Route the field wiring from the pole through the wire chase at the bottom of the station.
7. Attach the pedestrian station to the pole using two 1/4 - 20 FHP screws.
8. Connect cabinet field wires to screw terminals on the PCBA.



*Figure 1*

9. Secure protective terminal door with screws.
10. Attach the adapter plate and/or sign using provided hardware.
11. Repeat these steps for all stations at the intersection.

### Mounting the APC Termination Board

1. Locate a rail that spans the entire side of the cabinet wall to mount the termination board shown in Figure 2. 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 (APBs 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 APB Output connection on APC.



Figure 2. Termination Board

### Installing the APC

1. Place the APC on shelf inside the cabinet. If shelf space is limited, Campbell Company 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 APBs as possible.
3. Connect the antenna cable connector to the connector on the top of the APC.



Figure 3

### 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 worksheet that came with the shipment to identify the pedestrian phases (P2, P4, P6, P8, etc.) required.



2. Route the DB25 APC input cable in Figure 4 from the front of the APC to the traffic controller cabinet load switch outputs. Secure the excess cable in a loop and tie neatly to avoid confusion.
3. Attach the APC 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.

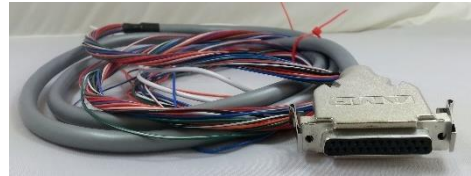


Figure 4. DB25 APC Input Cable

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

1. Identify the pedestrian pushbutton inputs in the traffic controller cabinet (PB2, PB4, PB6, PB8, etc.)
2. Route the DB9 APC output cable in Figure 5 from the front of the APC to the pedestrian pushbutton inputs.
3. Attach the APC 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 5. 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 6 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 6. 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. The red status light should be blinking when the APC begins communicating with the APBs. (May take up to a minute to establish communications.)
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 APC to a network.

## 4 Wireless Connection

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

1. Turn on Power to the APC.
2. Verify that all the APBs are now powered up
3. Press B1 on the front of the APC. Verify that the display shows that all APBs are at an ↑ (up arrow) status
4. If they are not, and the APBs are playing the “Not in Service” message, then the wireless radios need to be manually connected.
5. Log in to the APC
6. Click on the “XBee MAC” Tab
7. Click on “List all MAC Addresses”
8. Note: If more addresses come up on the list than the number of APBs installed in the intersection, verify the MAC address for each APB before continuing.
9. Select the MAC Address and click “Add” for each of the installed APBs.

## 5 Post Installation

### 5.1 Operational Check

1. The WiAAPS comes fully configured from the factory. When first powered up, an audible locator tone will be present at the pedestrian station.
2. Depress the push button and verify the red LED turns on with an audible acknowledgement message “Wait”. (No acknowledgment message in Extended Press APS mode). Verify that 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.

## 6 Appendix A: Acronyms, Abbreviations & Definitions

Term	Meaning
Adapter Plate	An aluminum plate that mounts to the APB to display crosswalk signs.
APB	Advanced Pedestrian Button
APC	Advanced Pedestrian Coordinator
APB	Fully integrated APS station that contains the microcontroller, push button, speaker, adapter plate
Extended Press	On APS, holding the pedestrian push button down from 1-3 seconds may activate special features, including audible beaconing and extended pedestrian clearance interval.
Intersection Worksheet	Document containing the intersection specific information including where to install pedestrian stations.
Station ID	Intersection unique identification number for each APB
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.