

# WHELEN<sup>®</sup>

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Installation Guide:  
Model PAP112  
Power Airhorn Plus™ Amplifier

**DANGER!** Sirens produce extremely loud emergency warning tones! Exposure to these tones without proper and adequate hearing protection, could cause ear damage and/or hearing loss! The Occupational Safety & Health Administration ([www.osha.gov](http://www.osha.gov)) provides information necessary to determine safe exposure times in Occupational Noise Exposure Section 1910.95. Until you have determined the safe exposure times for your specific application, operators and anyone else in the immediate vicinity should be required to wear an approved hearing protection device. Failure to follow this recommendation could cause hearing loss!

### Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.

### Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

### Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

**⚠ WARNING:** This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.
- Failure to use specified installation parts and/or hardware will void the product warranty.
- If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro®, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.
- Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.
- For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).
- If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.
- It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.
- FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!

**ACTIVATION OF THIS  
SIREN MAY DAMAGE  
UNPROTECTED EARS!**



**CAUTION**

Loud siren noise can cause hearing damage and/or loss. Refer to OSHA Section 1910.95 prior to putting ANY siren into service!

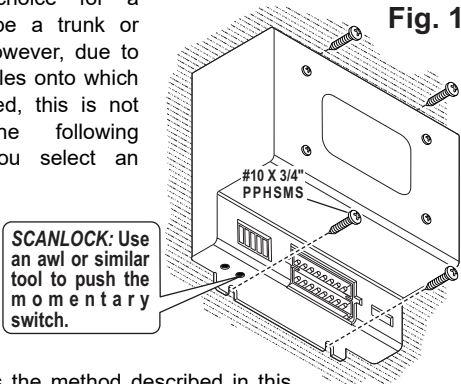
The **Power Airhorn Plus™ Amplifier**, like all Whelen components, can be installed in many different types of vehicles.

**Installation:**

**Caution:** As it will be necessary to drill holes into the mounting surface, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins.

The most common choice for a mounting area would be a trunk or similar compartment. However, due to the wide variety of vehicles onto which this unit can be installed, this is not always possible. The following guidelines will help you select an acceptable alternative:

1. Locate a suitable mounting location. The vertical wall between the trunk and the passenger compartment is often a good choice and is the method described in this manual.
2. Be sure that the remote amplifier fits properly and does not interfere with any parts of the trunk lid or seat back.
3. Position the amplifier onto the mounting location. Using an awl or other suitable tool, scribe the mounting surface where the mounting holes are to be drilled.
4. Carefully drill the mounting holes using a #16 drill bit.
5. Using the supplied #10 x 3/4" sheet metal screws, secure the remote amplifier to the vertical trunk wall (Fig. 1).



**Wiring / Power:**

**WARNING!** All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and **FUSED** at the battery to carry that load. **DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

**NOTE:** Although a 20 amp fuse (customer supplied) is required to be used in the fuse block, do not install the fuse until *all* of the wire connections are completed.

1. Extend the RED wire along the factory wiring harness to the POSITIVE +12VDC battery terminal.
2. Connect the RED wire to one end of a user supplied fuse block. *Do not connect this fuse block to the battery yet.*
3. Extend the BLACK wire along the factory wiring harness to the NEGATIVE battery terminal. Wire the unit (Fig. 2)

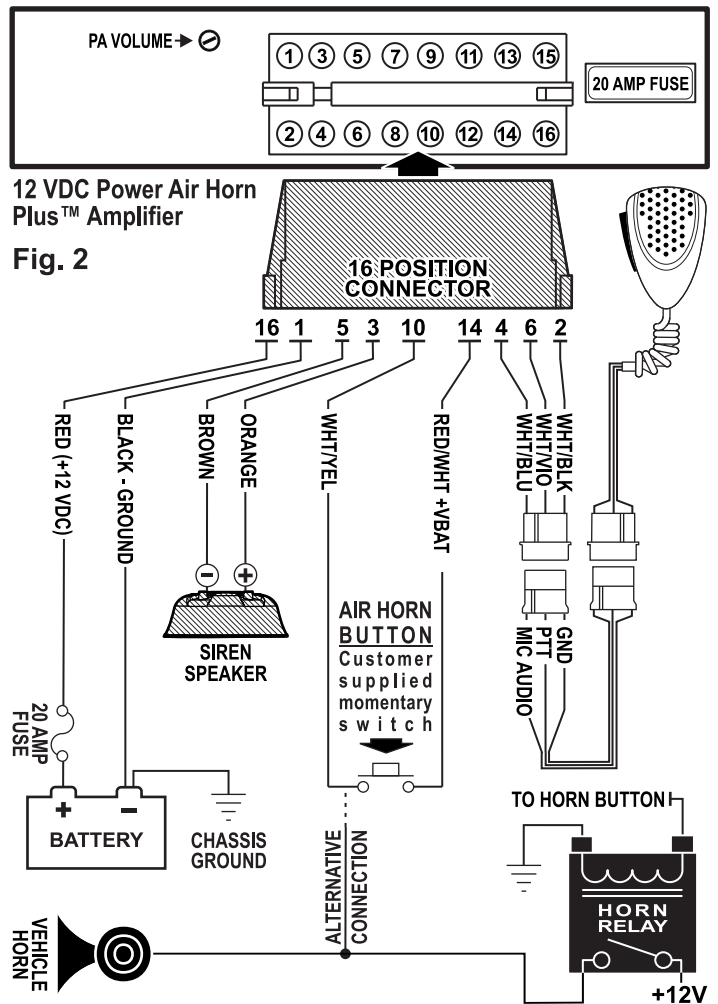
Wire Gauge / AWG	22	20	18	16	14	12	10	TERMINAL
Current Draw AMPS	10	3	5	7.5	12	19.5	31	49
	20	INS	INS	4	6	9.5	15.5	24.5
	Distance in Feet							

**Wiring / Speaker:**

1. Extend the ORANGE and BROWN wire along the factory wiring harness towards your siren speaker.
2. Connect the ORANGE wire to the POSITIVE (+) terminal and the BROWN wire to the NEGATIVE (-) terminal of the speaker.

**Microphone Volume Control:**

Microphone volume can be adjusted by adjusting the PA Volume screw (Fig. 2). The volume is increased by turning the screw clockwise and decreased by turning the screw counter-clockwise.



**Operation:**

Press and hold the Air Horn switch (Customer supplied) to broadcast a simulated air horn tone. Pressing the "push to talk" switch on the microphone will enable public address operation.

**To change the tone for the AIRHORN:** Press and hold the AIRHORN switch (Customer supplied). **To cycle forward through tones**, press the Scan-Lock™ switch (Fig. 1) for less than 1 second and release. **To cycle backward through tones**, press the Scan-Lock™ switch for more than 1 second and release. When the desired tone is present, it will automatically be saved as the AIRHORN tone. Release the AIRHORN switch.

AIR HORN tone list		
• TONE OFF	• AIR HORN - HI	• AIR HORN - LO
• PULSED AIR HORN - HI	• PULSED AIR HORN - LO	

**Specifications:**

INPUT VOLTAGE	12.8 VDC ±20%
I-IN 13.5V	8 AMPS (TYP)
OUTPUT VOLTAGE	34V RMS (MAX)
SPEAKER	100 WATTS @ 11 OHM
CONTROL VOLTAGE	INPUT VOLTAGE
CONTROL CURRENT	125mA (TYP)
PTT CONTROL VOLTAGE	< 1 VOLT
PTT CTRL CURRENT	15mA (TYP)
OPERATING TEMP.	-30°C TO +60°C
OPERATING HUMIDITY	95% NON CONDENSING
STANDBY CURRENT	0 mA