

WHELEN[®]

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Installation Guide:
Alpha™ Series
Remote Siren 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) 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 Lead which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to 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!

Mounting the Alpha™ Series Remote Siren Amplifier

1. Locate a suitable mounting location for the Alpha. The vertical wall between the trunk and the passenger compartment is often a good choice and is the method discussed 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 remote amplifier on the proposed mounting location. Using an awl or other suitable tool, scribe the mounting surface where the mounting holes are to be drilled.

CAUTION! As mounting the Alpha will require drilling, it is absolutely necessary to make sure that no other vehicle components could be damaged by the drilling process. If any vehicle component could suffer any potential harm, select a different mounting location.

4. Carefully drill the mounting holes using a drill bit sized for a #8 sheet metal screw.
5. Using the supplied #8 x 5/8" sheet metal screws, secure the remote amplifier to the vertical trunk wall.

Wiring the Alpha Series Siren Amplifier (6-position connector)

Connecting to Power:

1. Extend the RED and BLACK wires through the firewall and into the engine compartment.
2. Follow the factory wiring harness towards your vehicle's battery.

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!

3. Connect the RED wire to one end of a user supplied fuse block. *Do not connect this unit to the battery yet!*
4. Connect the BLACK wire directly to the NEGATIVE battery terminal.

Connecting to Your Speaker (100 watt):

1. Route the YELLOW and BROWN wires along the factory wiring harness towards your speaker.
2. Connect the YELLOW wire to the POSITIVE (+) terminal on the speaker.
3. Connect the BROWN wire to the NEGATIVE (-) terminal on the speaker.

Wiring the Alpha Series Siren Amplifier (9-position connector)

The Alpha series siren configuration and functionality are determined by the user supplied switches connected to the Alpha amplifier. A brief explanation of each of the function wires of the 9-position connector will serve as a guide to help determine the best configuration for your specific needs:

RED

Provides current for customer supplied switch operation (0.5 amp max.).

WHITE/GREEN

Connects to a user supplied horn transfer switch (Fig. 1) enabling the vehicle horn ring to control the siren.

WHITE/BROWN

Activates the *Wail* tone.

WHITE/RED

Activates the *Yelp* tone.

NOTE: Connecting both the *WHITE/BROWN* and *WHITE/RED* wires activates the *Piercer™* tone.

WHITE/ORANGE

Enables *Hands-Free* operation.

WHITE/YELLOW

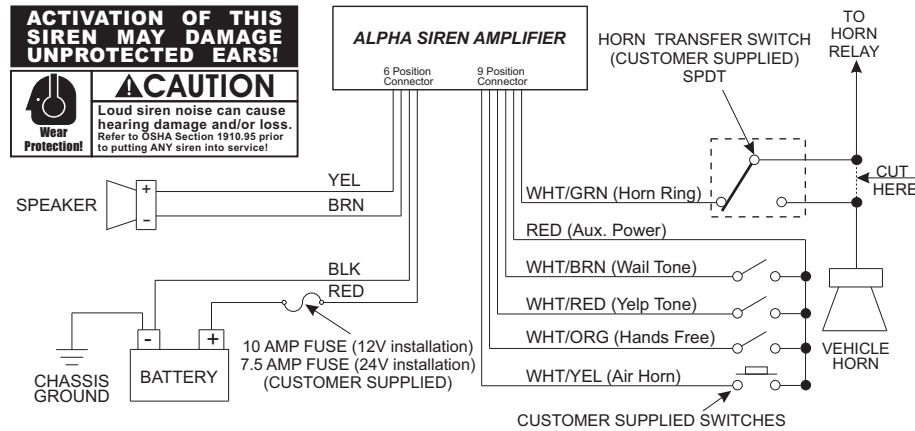
Activates *Air Horn* tone.

WIRE COLOR	+ Battery Terminal	+ Battery Terminal	+ Battery Terminal	+ Battery Terminal	+ Battery Terminal
WHITE/BROWN	WAIL	↓	↓	↓	↓
WHITE/RED	→	YELP	↓	↓	↓
WHITE/BROWN & WHITE/RED	→	→	PIERCER or Hi/Low	↓	↓
WHITE/ORANGE	→	→	→	HANDS FREE MODE ENABLED	↓
WHITE/GREEN	→	→	→	HANDS FREE MODE ACTIVATION	↓
WHITE/YELLOW	→	→	→	→	AIRHORN

The installation of your Alpha series siren amplifier will be complete after the fuse block wire is connected to the POSITIVE (+) terminal of the battery. After this connection has been made, visually inspect the fuses at the back of the amplifier and at the battery. If either of these fuses is blown, carefully inspect all of the circuit wires and make sure they are wired correctly. Replace the blown fuses with ones of an identical amp rating as the original. If these fuses blow after installation or activation, contact Whelen Engineering Technical Support.

Connecting to your Horn Relay:

1. Locate your vehicle's horn relay. Now locate the wire that connects the vehicle horn to the horn relay and cut this wire.
2. Extend each end of the cut wire (using a minimum 16 gauge wire) to a user supplied SPDT horn transfer switch.
3. Connect the wire coming from the horn relay to the switch "wiper" as shown below.
4. Connect the wire coming from the horn to one side of the switch as shown below.
5. Connect the WHITE/GREEN wire from the 9-position connector to the other side of the switch as shown below.



Alpha Siren Specifications

	12 Volt	24 Volt
INPUT VOLTAGE	13.5 VDC \pm 20%	26.5 VDC \pm 20%
INPUT CURRENT (OFF)	0 mA	0 mA
INPUT CURRENT (STANDBY)	175 mA (TYP.)	250 mA (TYP.)
INPUT CURRENT (SIREN)	8 Amps (TYP.)	4 Amps (TYP.)
OUTPUT VOLTAGE SPEAKER	34 V RMS (MAX.) (1) 11 ohm	34 V RMS (MAX.) (1) 11 ohm
OUTPUT POWER	105 WATTS (MAX.) @ 15 VDC	105 WATTS (MAX.) @ 30 VDC
H/R VOLTAGE	INPUT VOLTAGE or GROUND	INPUT VOLTAGE or GROUND
H/R CURRENT	15 mA (TYP.)	15 mA (TYP.)
OPERATING TEMP.	-30° C. to +60°C.	-30° C. to +60°C.
OPERATING HUMIDITY	95% Non-Condensing	95% Non-Condensing

Hands-Free Siren Activation (Default)...

The Alpha siren amplifier, when installed according to the above wiring diagram, offers the ability to activate siren tones using the vehicle's steering wheel horn ring. After the horn transfer switch has been set to siren operation, the hands-free mode is enabled when switch 3 is closed. After hands-free mode is enabled, pressing the horn ring button will start the Wail siren tone. A second press of the horn ring button will change the siren tone from Wail to Yelp. A third press will change the siren tone from Yelp to Piercer™. The siren tones will continue to cycle from Wail to Yelp to Piercer with each subsequent press of the horn ring button. Two, rapid presses on the horn ring button ends hands-free siren tone generation until the horn ring button is pressed again. At that time the cycle is repeated.

To exit the hands-free mode, end current siren tone with two, rapid horn ring presses, turn off switch 3 and return the horn transfer switch to its normal operating position. Normal vehicle horn operation is then restored.

Manual Siren Activation (Optional)...

The Alpha siren amplifier, when installed according to the wiring diagram on page 4, offers manual siren activation using the vehicle's steering wheel horn ring as a momentary switch. After the horn transfer switch has been set to siren operation, the horn ring button will now activate the manual siren tone. The default manual siren tone "ramps up" to a predetermined level and continues at that level until the manual switch is released. When the switch is released, the tone is immediately terminated.

Dip Switch Functions Explained...

Some of the default functions of the Alpha™ siren amplifier can be customized (via Dip Switches) to suit the needs of the operator. In the default factory configuration, each dip switch is in the Down (ON) position. The following section will explain dip switch functionality in both the ON and OFF position:

Dip Switch #1

Down (Default) Tone 3 & Hands-Free 3rd tone are Enabled
Up (Optional) Tone 3 & Hands-Free 3rd tone are Disabled

Dip Switch #2

Down (Default) Tone 3 & Hands-Free 3rd tone are Piercer™
Up (Optional) Tone 3 & Hands-Free 3rd tone are Hi/Low

Dip Switch #3

Down (Default) Tone 3 is the override tone for Yelp
Up (Optional) Airhorn is the override tone for Yelp

Dip Switch #4

Down (Default) Wail has normal Yelp override
Up (Optional) Wail has 10 second override for Yelp

Dip Switch #5

Down (Default) Manual tone ramps up to a pre-determined level and, upon release, terminates
Up (Optional) Manual tone ramps up to a pre-determined level and, upon release, ramps down and terminates

Dip Switches #6, #7 & #8

NOTE: Unlike dip switches #1 through #5, where each dip switch functions independently of the others, dip switches #6, #7 and #8 are used in conjunction with each other to achieve a specific function.

Dip Switch 6	Dip Switch 7	Dip Switch 8	Description of system functionality
ON	ON	ON	Default Configuration
OFF	ON	ON	Wail has priority over all tones (except Airhorn). Hands-Free is not effected in this setting.
ON	OFF	ON	Yelp has priority over all tones (except Airhorn). Hands-Free is not effected in this setting.
OFF	OFF	ON	Manual siren operation replaces Hands-Free operation. The vehicle's horn ring now acts as the manual siren tone activation button. Hands-Free siren functions are not available.
OFF	OFF	OFF	Yelp has priority over all tones(except Air Horn). Manual siren operation replaces Hands-Free operation. The vehicle's horn ring now acts as the manual siren tone activation button. Hands-Free siren functions are not available.
ON	ON	OFF	System emulates WS610 siren. If the Alpha is to be configured for WS610 emulation, it must be wired as shown below.*

ON = DOWN OFF = UP

*In this configuration, a Wail tone is generated by closing the switch (SW1) connected to the WHT/BRN wire. Pressing the momentary switch (MSW1) connected to the WHT/RED wire changes the tone to Yelp. Subsequent presses of the momentary switch will cause the tones to alternate between Wail and Yelp. Opening SW1 ends siren tone generation. Pressing the momentary switch, while SW1 is open, will cause a Yelp tone to be generated for as long as the momentary switch is pressed.

If a simulated Airhorn tone is desired, connect a normally open momentary switch to the WHT/YEL wire. When +12VDC is applied, the desired Airhorn tone will be generated.

