

# WHELEN<sup>®</sup>

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### Installation Guide: Euro-1 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](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.

- 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.
- 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<sup>®</sup>, 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!**



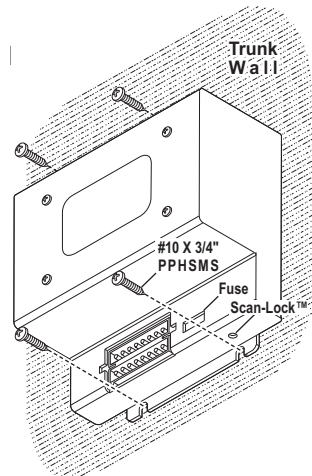
**CAUTION**  
Loud siren noise can cause hearing damage and/or loss. Refer to OSHA Section 1910.95 prior to putting ANY siren into service!

**Congratulations on selecting the Euro-1 Siren. This siren offers a unique and distinctive collection of features designed to allow the user to customize the operation of this siren to suit their individual needs. Features include:**

- Compact design
- Power to drive two 100 watt speakers
- Scan-Lock™ siren tone programming
- Hands Free operation
- Tone Completion Operation
- 5 Programmable modes of operation
- Harmonically rich composite air horn tones

**Specifications:**

Input Voltage ..... 12.8 V DC  
 Input Current: ..... @ 15 V DC @ 5.5 OHMS 16 AMPS Max.  
 Input Fuse ..... 20 amps  
 Speaker Impedance ..... 5.5 ohms Minimum  
 Operating Temperature ..... -30°C. to +60°C  
 Storage Temperature ..... -40° C to +70°C  
 Humidity ..... 99% Non condensing  
 Output Voltage ..... @ 15 V DC @ 11 ohms 34V RMS Max.  
 Output Power ..... @ 15 V DC @ 11 ohms 105 Watts Max.



**Mounting:**

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.

**CAUTION! Mounting the siren will require drilling. It is absolutely necessary to make sure that no other vehicle components could be damaged while drilling. If any vehicle component could suffer any potential harm, select a different mounting location.**

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.

**Wiring / Power:**

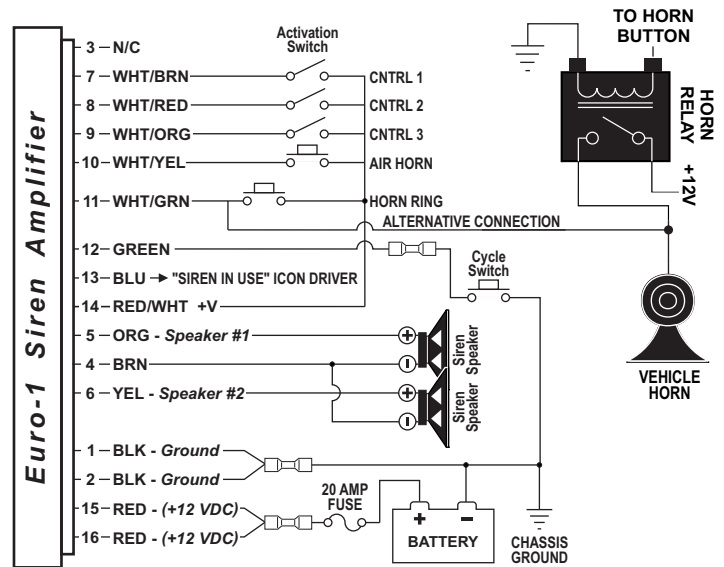
**WARNING! All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**

Wire Gauge / AWG	22	20	18	16	14	12	10	FEET
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							

1. Using appropriately sized wire, extend the two (2) RED wires along the factory wiring harness to the POSITIVE +12VDC battery terminal.
2. Connect the RED wires to one end of a user supplied fuse block. *Do not connect this fuse block to the battery yet.*
3. Using appropriately sized wire, extend the two (2) BLACK wires along the factory wiring harness to the NEGATIVE battery terminal.

**Wiring / Speakers:**

1. Extend the ORANGE, YELLOW and BROWN wires along the factory wiring harness towards your speakers.
2. Connect YELLOW wire to POSITIVE (+) terminal of speaker #1 and ORANGE wire to POSITIVE (+) terminal on speaker #2.
3. Connect BROWN wire to NEGATIVE (-) terminal on both speakers.



**Control Switches:**

The Euro-1 siren amplifier has six control inputs available, however; not all control inputs will need to be wired depending on the "Mode of Operation" chosen by the user. Five of the control inputs (CNTRL 1-3, air horn and horn ring) are activated by applying positive voltage (VBAT) to them, the RED/WHITE wire (pin 14) is a current limited output that can be used for this purpose (see wiring diagram). The last input (CYCLE) is activated by applying ground to it. Refer to the Air bag warning on Page 1 before extending any wires into the interior of the vehicle.

**Operation:**

**Siren in use:** This output will become active (+VBAT) whenever a tone is being produced by the siren.

**Modes:** There are five modes of operation built into the Euro-1 siren amplifier. Mode 5 is the factory default mode. See the "Mode Programming" section to change the mode of operation if desired.

*The following tables show the factory default tone settings. See the "tone programming" section to make desired changes.*

**MODE 1**

CONTROL / input	OPERATION	AIR HORN / switch*	HORN RING & CYCLE / switch
CNTRL 1	Wail	Airhorn	Yelp
CNTRL 2	Yelp	Airhorn	Hi/Lo
CNTRL 3	HF-Standby	Airhorn	HF cycle (Wail, Yelp)***
AIRHORN	Airhorn	Airhorn	Airhorn

\* The AIRHORN switch produces airhorn as a main tone as well as an override tone.  
 \*\*\* HF cycle: tones are activated by a single tap on the horn ring or cycle switch. The first tap produces a WAIL tone (a steady rise and fall tone). A second tap produces a YELP tone (a fast rise and fall tone). The next tap returns the siren to a WAIL tone and the cycle repeats itself. Two quick successive taps will stop the siren.

**MODE 2**

CONTROL / input	OPERATION	AIR HORN / switch*	HORN RING & CYCLE / switch
CNTRL 1	Wail	Airhorn	Yelp
CNTRL 2	Yelp	Airhorn	Hi/Lo
CNTRL 3	MANUAL-Stby	Airhorn	Wail coast to stop
AIRHORN*	Airhorn	Airhorn	Airhorn

\* The AIRHORN switch produces airhorn as a main tone as well as an override tone.

**MODE 3** This mode has a fixed set of tones that can not be changed.

CONTROL / input	OPERATION	HORN RING & CYCLE SWITCH
CNTRL 1	HF-Standby	HF Cycle (Tritone, Wail, Piercer*)

\* HF cycle: tones are activated by a single tap on the horn ring or cycle switch. The first tap produces a tritone sequence. A second tap produces a WAIL tone (a steady rise and fall tone). A third tap produces a piercer tone (a rapid rise and fall tone). The next tap returns the siren to tritone and the cycle repeats itself. Two quick successive taps will stop the siren.

**MODE 4**

CONTROL / input	OPERATION	AIR HORN / switch*	HORN RING & CYCLE SWITCH
CNTRL 1	Wail	Airhorn	Yelp
CNTRL 2	Instant** HF (Wail, Yelp)	Airhorn	No Change
CNTRL 3	Instant** MANUAL (Wail, Coast)	Airhorn	No Change
AIRHORN*	Airhorn	Airhorn	Airhorn

\* The AIR HORN switch produces AIR HORN as a main tone as well as an override tone.

\*\* The word 'instant' implies that activating CNTRL2 will generate the HF cycle on it's own, and that activating CNTRL3 will generate the Manual tone on it's own.

\*\*\* HF cycle: tones are activated by a single tap on the CNTRL2 switch. The first tap produces a WAIL tone (a steady rise and fall tone). A second tap produces a YELP tone (a fast rise and fall tone). The next tap returns the siren to a wail tone and the cycle repeats itself. Two quick successive taps will stop the siren.

**MODE 5**

CONTROL / input	OPERATION	AIR HORN / switch*	HORN RING & CYCLE SWITCH
CNTRL 1	Wail	Airhorn	10 Second Yelp
CNTRL 2	HF-Standby	Airhorn	HF Cycle (Wail, Yelp, Piercer)**
CNTRL 3	HF-2 Cycle Standby	Airhorn	HF 2 Cycle (Wail, 10 sec. Yelp)**
AIRHORN*	Airhorn	Airhorn	Airhorn

\* The Airhorn switch produces Airhorn as a main tone as well as an override tone.

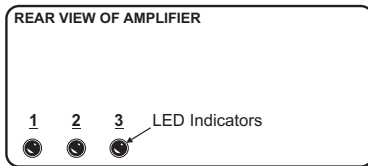
\*\* HF cycle: Tones are activated by a single tap on the horn ring or cycle switch. The first tap produces a WAIL tone (a steady rise and fall tone). A second tap produces a YELP tone (a fast rise and fall tone). A third tap produces a Piercer tone. The next tap returns the siren to a WAIL tone and the cycle repeats itself. Two quick successive taps will stop the siren.

\*\*\* HF 2 cycle: Tones are activated by a single tap on the horn ring or cycle switch. The first tap produces a WAIL tone (a steady rise and fall tone). A second tap produces a YELP tone (a fast rise and fall tone). The next tap returns the siren to a WAIL tone or after 10 seconds the siren automatically returns to a WAIL tone and the cycle repeats itself. Two quick successive taps will stop the siren.

**Programming the Euro 1:**

**WARNING: Never try to program the siren while it is wired to the vehicle. The siren must be removed from the vehicle before programming. A low level audio device is built into the siren so siren tones can be heard during programming.**

There are three important operational characteristics of the Euro1 that can be reconfigured; *Mode of Operation, Tone Selection and Tone Completion Operation.* Use the Scan-Lock™ button to place Euro1 in configuration mode, as well as select desired changes. Three LEDs, on the rear of the amplifier indicate the selected mode of operation during the configuration process. The procedure for each is outlined below. The Scan-Lock™ button (Fig. 1) can be activated with a pen or similar object.



**Siren Tone Programming Procedures:**

**With Scan-Lock™ the tonal operation of the siren can be customized to fit your needs. Scan-Lock™ is used to change the default siren tones as shown below.**

**To change the primary tone for CNTRL1 & CNTRL2 switch positions:** Activate the siren control switch that you wish to change: **To cycle forward through tones**, press the Scan-Lock™ switch 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 generated, it is automatically saved for that rotary switch position

**To change the override tone for CNTRL1 & CNTRL2 switch positions:** Activate the siren control switch that you wish to change the override tone on. Press and hold the Horn ring or the CYCLE switch: **To cycle forward through tones**, press the Scan-Lock™ switch 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 override tone for that control switch. Release the Horn ring or the CYCLE switch.

**To change a tone in the hands free cycle (for MODE 1):** Place the siren in HF standby, by Activating the CNTRL3 switch. Using the HORN RING or the CYCLE switch, advance to the tone that you wish to change: **To cycle forward through tones**, press the Scan-Lock™ switch 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 generated, it will automatically be saved for that hands-free cycle position.

**To change a tone in the hands free cycle (for MODE 4):** Using the CNTRL2 switch, advance to the HF tone that you wish to change: **To cycle forward through tones**, press the Scan-Lock™ switch 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 generated, it will automatically be saved for that hands-free cycle position.

**Tone List for: HANDS FREE / CNTRL 1 & 2 Primary and Override**

- Tones off \*\*
- Wail 750\_1570\_12cm . . . . . 750 - 1570Hz 12c/m
- Yelp 750\_1570\_158cm . . . . . 750 - 1570Hz 158c/m
- Hilo 550\_650 . . . . . 550Hz for 1s . . . . . 650Hz for 1s
- Airhorn-Hi . . . . . variable composite\*
- Airhorn -Lo. . . . . variable composite\*
- Piercer 750\_1570\_800cm . . . . . 750 - 1700Hz 800c/m
- Mechanical simulated . . . . . 4.4c/m
- Ambulance: Netherlands & Holland . . . . . 635Hz for .90s. . . . . 800Hz for .90s  
475Hz for .90s. . . . . 800Hz for .90s
- Airhorn Hilo 30cm . . . . . variable 1s. . . . . variable for 1s
- Alt Wail 500 1650 10.5cm . . . . . 500 1650 10.5cm
- Alt Yelp 500 1650 255cm . . . . . 500 1650 255cm
- H-Wail 850\_1700\_15cm . . . . . 850 - 1700Hz 15c/m
- Wail 600\_1200\_16cm . . . . . 600 - 1200Hz 16c/m
- Yelp 600\_1200\_267cm . . . . . 600 - 1200Hz 267c/m
- Martin tone . . . . . hi/lo variable composite. . . . . same
- H\_hilo\_composit\_46cm . . . . . composite for .65s. . . . . composite for .65s
- Composite\_tritone\_\_17cm . . . . . 423Hz for .90s. . . . . 533Hz for .90s  
316Hz for .90s. . . . . 533Hz for .90s
- Pulsed yelp/airhorn . . . . . mixed tones
- Triton 475\_635\_800\_45cm . . . . . 475Hz for .337s. . . . . 800Hz for .337s  
635Hz for . . . . . 337s800Hz for .337s
- Standard . . . . . 450Hz for .909s. . . . . 600Hz for .909s
- Denmark . . . . . 450Hz for .50s. . . . . 600Hz for .50s
- Sweden . . . . . 530Hz for 1s . . . . . 700Hz for 1s
- Police (Austria) . . . . . 430Hz for 1.2s. . . . . 575Hz for 1.2s
- Ambulance (Austria) . . . . . 400Hz for .75s. . . . . 530Hz for .75s
- Canarias . . . . . 420Hz for .306s. . . . . 516Hz for .306s
- Police (Netherlands) . . . . . 600Hz for .455s. . . . . 800Hz for .455s
- Police (Holland) . . . . . 600Hz for .909s. . . . . 800Hz for .909s
- Guardia Urbana . . . . . 550Hz for .441s. . . . . 750Hz for .441s
- Deutschland . . . . . 432Hz for .75s. . . . . 575Hz for .75s
- Alemania . . . . . 362Hz for .75s. . . . . 485Hz for .75s
- Gendarmerie(France) . . . . . 430Hz for .545s. . . . . 735Hz for .545s
- Police (France) . . . . . 430Hz for .545s. . . . . 575Hz for .545s
- Fire(France) . . . . . 430Hz for 1.1s. . . . . 483Hz for 1.1s
- UMH(France) . . . . . 430Hz for .545s. . . . . 650Hz for .545s
- DIN 14610 . . . . . 450Hz for .75s. . . . . 600Hz for .75s
- Fire/Ambulance (Italy) . . . . . 392Hz for 1.0s. . . . . 660Hz for .167s  
392Hz for 167s . . . . . 660Hz for .167s
- Police (Italy) . . . . . 466Hz for 1.0s. . . . . 622Hz for .167s  
466Hz for .167s. . . . . 622Hz for .167s
- Ambulance . . . . . 420Hz for .167s. . . . . 516Hz for .167s  
420Hz for .167s. . . . . pause for .300s
- Ambulance (France) . . . . . 420Hz for .167s. . . . . 516Hz for .306s  
420Hz for .167s. . . . . pause for 1.5s

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