# INSTALLATION &OPERATION MANUAL

**3920/25**
**SIREN**


Code 3, Inc., a subsidiary of
Public Safety Equipment, Inc.

CODE 3 INC. PUBLIC SAFETY EQUIPMENT, INC.

# MODEL 3920/25

## REMOTE COMPACT SIREN

**Contents:**



**IMPORTANT:** ***Read all instructions and warnings before installing and using.***
**INSTALLER:** ***This manual must be delivered to the end user of this equipment.***

# Introduction

The Code 3® Model 3920 siren produces three distinct tones, "Wail", "Yelp" and "Hyper-Yelp". In addition, the siren produces a momentary "Air Horn" tone. The siren features one remote input for selection/control of the siren tones and "Air Horn" as well as Output Short Circuit Protection.

**WARNING!**
**SIREN PRODUCTS:**

Sirens are an integral part of an effective audio/visual emergency warning system. However, sirens are only short range secondary warning devices. The use of a siren does not insure that all drivers can or will observe or react to an emergency warning signal, particularly at long distances or when either vehicle is traveling at a high rate of speed. Sirens should only be used in a combination with effective warning lights and never relied upon as a sole warning signal. Never take the right of way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, or responding at a high rate of speed. The effectiveness of this warning device is highly dependent upon correct mounting and wiring. Read and follow the manufacturers instructions before installing or using this device. The vehicle operator should check the equipment daily to insure that all features of the device operate correctly.

To be effective, sirens must produce high sound levels that potentially can inflict hearing damage. Installers should be warned to wear hearing protection, clear bystanders from the area and not to operate the siren indoors during testing. Vehicle operators and occupants should assess their exposure to siren noise and determine what steps, such as consultation with professionals or use of hearing protection should be implemented to protect their hearing.

This equipment is intended for use by authorized personnel only. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should check all applicable city, state and federal laws and regulations.

Code 3, Inc., assumes no liability for any loss resulting from the use of this warning device.

Proper installation is vital to the performance of the siren and the safe operation of the emergency vehicle. It is important to recognize that the operator of the emergency vehicle is under psychological and physiological stress caused by the emergency situation. The siren system should be installed in such a manner as to: A) Not reduce the acoustical performance of the system, B) Limit as much as practical the noise level in the passenger compartment of the vehicle, C) Place the controls within convenient reach of the operator so that he can operate the system without losing eye contact with the roadway.

Emergency warning devices often 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 severe vehicle damage, including fire.

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.

# Standard Features

The 3920 Remote siren provides the following features:

**Tones:** Wail, Yelp, Hyper Yelp and Air Horn

**Remote Siren Switching** - The siren accepts a ground (earth) signal, from the vehicle's horn switch (or other user supplied switch), and remotely activates the siren as described under the operation section.

# Unpacking & Pre-installation

After unpacking your 3920 siren, carefully inspect the unit and associated parts for any damage that may have occurred in transit. Report any damage to the carrier immediately.

# Installation & Mounting

The 3920 siren is designed to be remotely mounted in a cool dry location such as under a seat or in the trunk. The siren may not be mounted in any location where it will be exposed to high heat or moisture. The 3920 siren is controlled by either proper connection to the vehicle Horn Ring switch and/or by use of the optional remote switch panel. Ease of operation and convenience to the operator should be prime consideration when mounting the siren and controls. Figure 1 shows the switch panel.

**WARNING!**

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.

Ease of operation and convenience to the operator should be the prime consideration when mounting the siren and controls. Adjust the mounting angle to allow maximum operator visibility.

Do not mount the Control Head Module in a location that will obstruct the drivers view.

Mount the microphone clip in a convenient location to allow the operator easy access.

Devices should be mounted only in locations that conform to their SAE identification code as described in SAE Standard J1849. For example, electronics designed for interior mounting should not be placed underhood, etc.

Controls should be placed within convenient reach* of the driver or if intended for two person operation the driver and/or passenger. In some vehicles, multiple control switches and/or using methods such as "horn ring transfer" which utilizes the vehicle horn switch to toggle between siren tones may be necessary for convenient operation from two positions.

* *Convenient reach is defined as the ability of the operator of the siren systems to manipulate the controls from his normal driving/riding position without excessive movement way from the seat back or loss of eye contact with the roadway.*

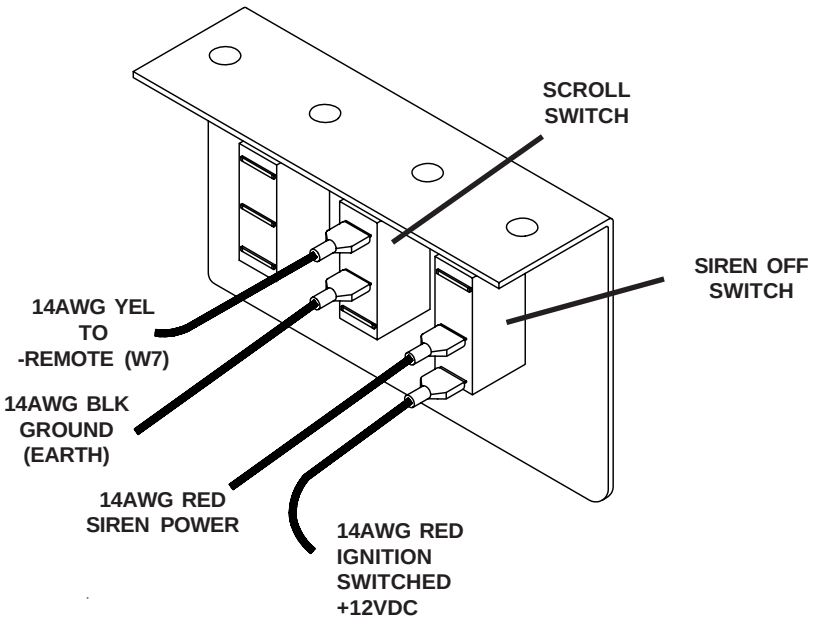



**FIGURE 1**

The siren chassis should be mounted with user provided hardware appropriate for the chosen mounting location.

**NOTE:** Wiring will be performed in subsequent steps that will require access to the interior of the unit. Plan the installation accordingly.

## Wiring

The 3920 siren provides six 1/4" Quickslide connections on the printed circuit board for power, control and speaker connections. Each printed circuit board connection is clearly marked for easy identification. Wiring connections are shown in Figure 2.

Provide a "service loop" of six to eight inches of each wire coming to the siren to allow easy removal and access to the siren.

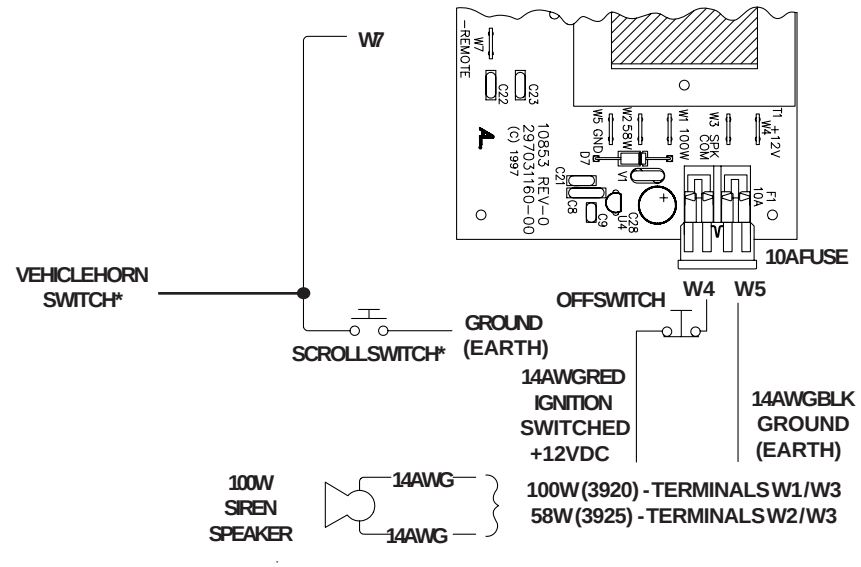



**FIGURE 2**

**WARNING!**

CONNECTION OF A 58 WATT SPEAKER TO THE 100 WATT TERMINAL WILL CAUSE THE SPEAKER TO BURN OUT, AND WILL VOID THE SPEAKER WARRANTY!
The sound projecting opening should be pointed forward, parallel to the ground, and not obstructed or muffled by structural compounds of the vehicle. Concealed or underhood mounting in some cases will result in a dramatic reduction in performance. To minimize this reduction, mount the speaker so the sound emitted is projected directly forward and obstruction by vehicle compounds such as hoses, brackets, grille, etc. is minimized.
Electromechanical sirens and electronic siren speakers should be mounted as far from the occupants as possible using acoustically insulated compartments and isolation mountings to minimize the transmission of sound into the vehicle. It may be helpful to mount the device on the front bumper, engine cowl or fender; heavily insulate the passenger compartment; and operate the siren only with the windows closed.
Each of these approaches may cause significant operational problems, including loss of siren performance from road slush, increased likelihood of damage to the siren in minor collisions, and the inability to hear the sirens on other emergency vehicles. APPROPRIATE TRAINING OF VEHICLE OPERATORS IS RECOMMENDED TO ALERT THEM TO THESE PROBLEMS DURING OPERATIONS.

## SpeakerConnections

The siren is designed with a single 100 Watt speaker. **Do not connect a speaker which is not rated at 100W, 11 ohms.**

**WARNING!**

IMPORTANT WARNINGS TO USERS OF SIRENS: "Wail" and "Yelp" tones are in some cases (such as in the state of California) the only recognized siren tones for calling for the right of way. Ancillary tones such as "Air Horn", "Hi-Lo", and "Hyperlo" in some cases do not provide as high a sound pressure level. It is recommended that these tones be used in a secondary mode to alert motorists to the presence of multiple emergency vehicles or to momentarily shift from the primary tone as an indication of the imminent presence of an emergency vehicle.

# SirenOperation

The Model 3920 siren is remotely controlled either from the siren's control panel, SCROLL switch or (if connected) the vehicle's horn switch. The siren tone will change each time the control switch is pressed (Wail, Yelp, HyperYelp). The siren will change to "Air Horn" mode if the control switch is held. From the Standby mode a short momentary push on the control switch will produce the wail siren tone. With each successive momentary signal on the remote input line, the siren scrolls to the next tone. The normal sequence of tones is: Wail, Yelp and HyperYelp. Holding the switch for a prolonged period will produce "Air Horn". Each push on the vehicles horn switch will also sound vehicles horn as wired in Figure 2. It is recommended that customers use auxiliary switch and horn transfer relay(both optional equipment).

## "Instant On" Feature

As a result of the "Instant On" design, the siren is ready for operation whenever +12Vdc power is supplied. To restrict operation of the siren when the vehicle is off, connect the siren to an ignition controlled +12Vdc supply line.

**NOTE:** The "Instant On" design of the siren keeps the unit powered and ready to operate when the vehicle ignition is ON. Depressing the "OFF" button momentarily removes power from the siren. When the "OFF" button is released power is restored and the siren reverts to standby mode.

**WARNING!**

Any electronic device may create or be affected by electromagnetic interference, After installation of any electronic device, operate all equipment simultaneously to insure that operation is free from interference.

The 3920 siren is remote controlled via the -REMOTE (W7) terminal. The terminal marked +REMOTE (W6) is not used.
The terminal marked - REMOTE (W7) requires a momentary ground (earth) signal to cause the siren to activate or change tones.

Install the siren using the SCROLL switch provided on the siren control panel as shown in Figures 1 & 2. **DO NOT CONNECT ANY WIRE TO THE +REMOTE (W6) INPUT TERMINAL.**

*The -REMOTE (W7) input is compatible with most ground switched vehicle Horn Ring switches and may, optionally, be connected as shown in Fig 2. This allows the siren to be operated by depressing the vehicle's horn switch. A quick, sharp tap on the horn will turn the siren on. Additional taps will scroll the siren to the next tone. Depressing the horn for a longer period will produce "Air Horn". When using the vehicle's horn switch to control the siren it is recommended that the vehicle's horn switch be routed through a transfer relay (not included). This will allow the normal operation of the vehicle horn to be interrupted while the siren is in operation.

**WARNING!** Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connection. Do not use insulation displacement connections (e.g. 3M Scotchlock type connections). Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. High ambient temperatures (e.g. underhood) will significantly reduce the current carrying capacity of wires, fuses, and circuit breakers. Use "SXL" type wire in engine compartment. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
Particular attention should be paid to the location and method of making electrical connection and splices to protect these points from corrosion and loss of conductivity.
Ground terminations should only be made to substantial chassis components, preferably directly to the vehicle battery.
The user should install a fuse sized to approximately 125% of the maximum Amp capacityin the supply line to protect against short circuits. For example, a 30 Amp fuse should carry a maximum of 24 Amps. DO NOT USE 1/4" DIAMETER GLASS FUSES AS THEY ARE NOT SUITABLE FOR CONTINUOUS DUTY IN SIZES ABOVE 15 AMPS. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

### Output Short Circuit Protection

The 3920 siren is equipped with output short circuit protection. This system uses electronic circuitry (instead of fuses or circuit breakers) to protect the siren driver and wiring from damage due to short circuits. In the event of a short circuit on the siren output lines, the siren senses the excessive current draw and shuts down the siren output. Once the short has been removed, the siren will return to normal operation.

# Specifications

Input Voltage: 10 to 16 VDC, negative ground (earth).
(Note: Operation above 15 VDC for an extended period of time may result in speaker damage.)

Operating Current: One 100 watt speaker - 8 Amps

Idle Current: 35 ma.

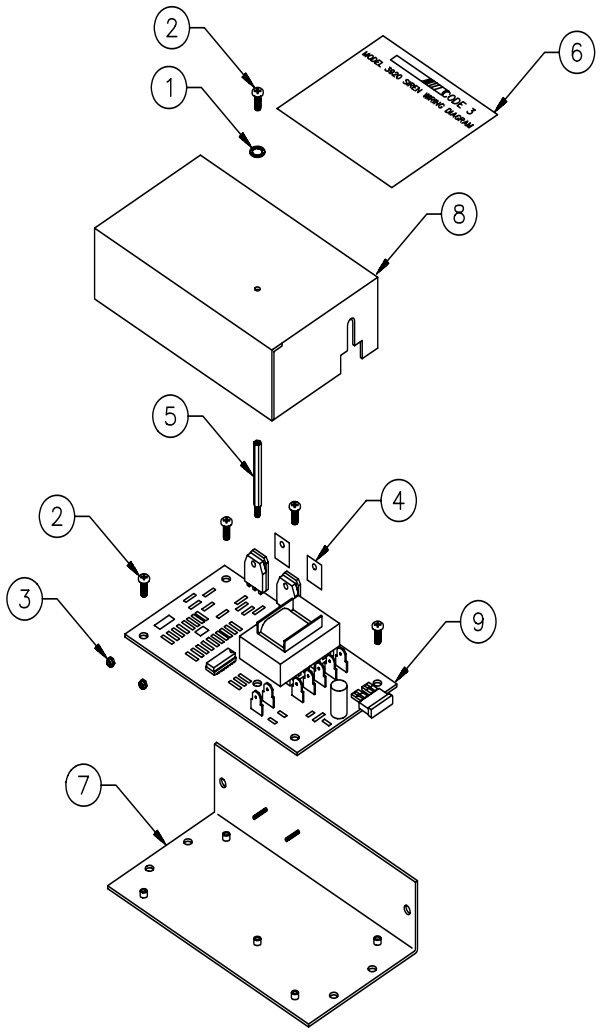
# Maintenance

Your Code 3® Remote Compact siren has been designed to provide trouble free service. In case of difficulty, see the Troubleshooting Guide on page 7. A primary cause of failure is shorted or open wires. The majority of the short/open circuits have been found where wiring passes through firewalls, roofs, etc. If difficulty persists, contact the factory (using the phone numbers listed on the back of this document) for troubleshooting advice or return instructions. CODE 3®, maintains a complete parts inventory and service facility at the factory and will repair or replace (at the factory's discretion) any unit found to be defective under normal use and in warranty. **Any attempt to service a unit in warranty by anyone other than a factory authorized technician without the express written consent of the factory, will void the warranty.** Units out of warranty can be repaired at the factory on either a flat rate or parts/labor basis. Contact the factory service department for details and return instructions. CODE 3®, is not liable for any incidental charges related to the repair or replacement of a unit unless otherwise expressly agreed to in writing by the factory.

# TroubleShootingGuide

| PROBLEM | CAUSE | REMEDY |
|---|---|---|
| No speaker output. | A. Siren not connected. | A. Check siren wiring and connections. |
| | B. Fuse missing/open. | B. Replace fuse. |
| | C. Speaker wires/speaker shorted. | C. Check siren wiring and connections. |
| Fuse blows. | A. Power connections reversed. | A. Check power connections. |
| | . | |
| No output from speaker, tones heard inside siren amplifier module. | A. Speaker not connected, open circuit in speaker wiring. | A. Check speaker wiring. |
| | B. Speaker failure. | B. Replace speaker. |
| Siren tones volume too low/garbled. | A. Low voltage to siren amplifier. | A. Check wiring for bad connections. Check vehicle charging system. |
| | B. Defective speaker/high resistance wiring. | B. Check speaker wiring/replace speaker. |

# Exploded View




# Parts List

| Ref No. | Description | Part No. | Qty. |
|---|---|---|---|
| 1 | #6 Internal Tooth Star Lock Washer | T00150 | 1 |
| 2 | Machine Screw, Hex Head, 6-32 x .250 | T01030 | 5 |
| 3 | Locking Nut, 4-40 | T03594 | 2 |
| 4 | Transistor Insulating Pad | T06363 | 2 |
| 5 | Standoff, M/F, 6-32 x 1.5 | T10854 | 1 |
| 6 | Wiring Label (3920) | T10856 | 1 |
| | Wiring Label (3925) | T07255 | 1 |
| 7 | Electronics Tray Assembly | S71395 | 1 |
| 8 | Cover | T08668 | 1 |
| 9 | Siren Amplifier PCB, Assembled and Tested | T50018 | 1 |

# Notes

# WARRANTY

Code 3, Inc.'s emergency devices are tested and found to be operational at the time of manufacture. Provided they are installed and operated in accordance with manufacturer's recommendations, Code 3, Inc. guarantees all parts and components except the lamps to a period of 1 year (unless otherwise expressed) from the date of purchase or delivery, whichever is later. Units demonstrated to be defective within the warranty period will be repaired or replaced at the factory service center at no cost.

Use of lamp or other electrical load of a wattage higher than installed or recommended by the factory, or use of inappropriate or inadequate wiring or circuit protection causes this warranty to become void. Failure or destruction of the product resulting from abuse or unusual use and/or accidents is not covered by this warranty. Code 3, Inc. shall in no way be liable for other damages including consequential, indirect or special damages whether loss is due to negligence or breach of warranty.

**CODE 3, INC. MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY INCLUDING, WITHOUT LIMITATION, WARRANTIES OF FITNESS OR MERCHANTABILITY, WITH RESPECT TO THIS PRODUCT.**

# PRODUCT RETURNS

If a product must be returned for repair or replacement*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

*Code 3, Inc. reserves the right to repair or replace at its discretion. Code 3, Inc. assumes no responsibility or liability for expenses incurred for the removal and /or reinstallation of products requiring service and/or repair.; nor for the packaging, handling, and shipping: nor for the handling of products return to sender after the service has been rendered.

Problems or questions? Call our tachnical assistance hotline (314) 996-2800
www.CODE3PSE.COM

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