



# SR-44 SIREN AMPLIFIER

## Section 1 General Description

The 620-SR44 Electronic Siren is a fully featured, remotely controlled siren capable of operating on 12 or 24 volts, and with either a 60-watt or 100 watt output. It has been designed and manufactured in Australia.

The operating voltage and power output are selected from within the siren amplifier. This feature alone, makes the SR-44 siren one of the most versatile units on the market today.

Other standard features include wail, yelp, hi-lo, selectable air-horn or instant yelp siren sounds, public address and radio re-broadcast, and relay control of two 30 amp light circuits.

Sirens sounds are controlled by the remote control head pushbutton, the vehicle's horn button or the optional floor mounted foot switch

The remote control head unit is backlit for convenient night time viewing, and is compact enough to be installed into virtually any vehicle.

A heavy steel and aluminium powdercoated enclosure protects the siren amplifier, which may be mounted under a seat or in the boot. Quick connect/disconnect cables join the amplifier to the remote control head and the vehicle's wiring loom, making installation and removal of the unit straightforward.

All of the solid state components used in the siren are mounted on a single printed circuit board (PCB), thus providing an easily serviced modular construction.

All of the above features plus the protection of a (2) two year warranty for the siren amplifier and remote control head, ensure the customer complete satisfaction.

## Section 2 Specifications

### General Specifications

Input Voltage	12 volt selected	11 to 14 volts DC negative ground
	24 volt selected	22 to 28 volts DC negative ground
Standby current		80mA maximum
Operating temperature range		-10° to +65° Celsius
Relay Circuits		30 amps each maximum

### Siren Specifications

Operating Current	Wail selected	7.5a @ 12v 60w 4.0a @ 24v 60w 10.0a @ 12v 100w 5.5a @ 24v 100w
Frequency range	Wail / yelp	500Hz to 1500Hz
Cyclic rate	Wail	10 cycles/Min
	Yelp	150 cycles/Min
	Hi-Lo	60 cycles/Min
Voltage output	60w 11Ω load	50volts p-p (approx)
	100w 11Ω load	60volts p-p (approx)
Output sound level	Average	60w 125dB @ 1m
		100w 128dB @ 1m

### Audio Specifications

Audio frequency range		300Hz to 3000Hz
Audio distortion		10% maximum
Radio input impedance		5 KΩ

### Physical Specifications

Amplifier dimensions		55mm high 155mm wide 205mm depth
Amplifier weight		1.5Kg (approx)
Remote control head dimensions		55mm high 85mm wide 35mm depth
Remote control head weight		200g (approx)
Siren speaker types		1 x 60w 11Ω <b>OR</b> 1 x 100w 11Ω

**Specifications subject to change without notice.**

## Section 3 Installation

### Unpacking and Inspection

Carefully open the shipping carton and remove the contents. Inspect the siren and accessories for damage or shortages. Compare the contents of the shipping carton against the delivery docket. Before any installation work is carried out, plan where the various components will be mounted and what route the wiring will take. Suitable positions will be required for the siren amplifier, siren speaker, remote control head and PTT microphone, and if purchased as an option, the foot switch. Assemble the siren speaker if required, according to the instructions supplied with it.

### Configuring the Siren Amplifier

Determine the operating voltage and power output required for the installation.

#### WARNING

**The Voltage and Output power must be configured correctly. If not, damage to the siren speaker and / or siren amplifier will result.**

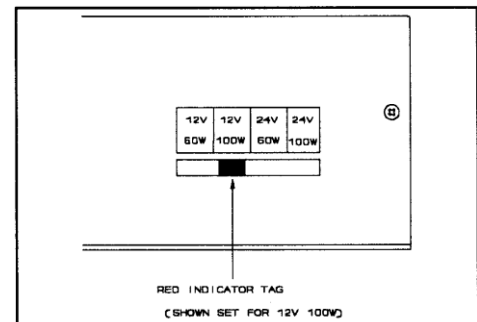
The siren amplifier output settings can be seen by looking in the viewing slot on the side of the siren amplifier. The red indicator tag indicates the current setting. See figure 3.1. There are four options: – 12V-60W, 12V-100W, 24V-60W and 24V-100W. Should the configuration need to be changed proceed as follows. Tools required are a Phillips head screwdriver, needle nose pliers and a small cross head screwdriver.

### Remove the Lid

Detach the siren amplifier lid by removing the six Philips head screws on both sides of the siren amplifier.

### Setting the Operating Voltage

Referring to figure 3.2 for their location lift the five PCB jumpers with needle nose pliers and move them to the correct setting. Move all five jumpers towards the relays for 12-volt operation, and the opposite direction for 24-volt operation.



**Figure 3.1**  
Siren amplifier configuration

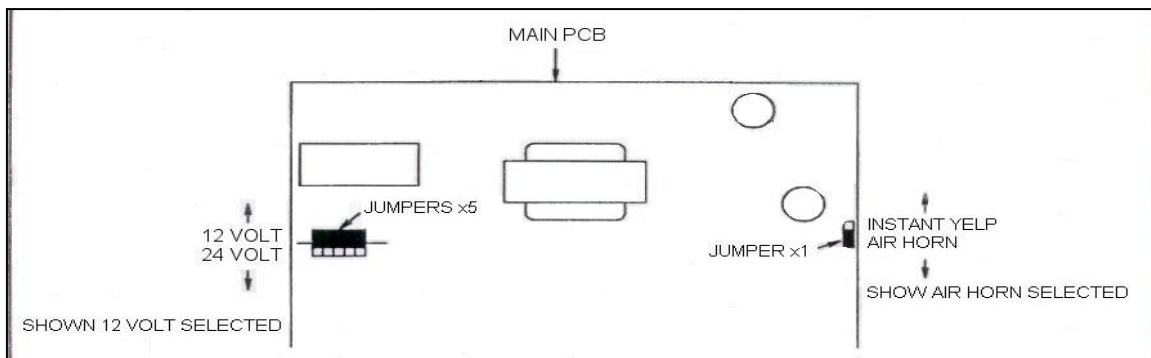
### Setting the Output Power

Referring to figure 3.3, use the small cross head screwdriver to move the white wire with the red indicator tag to the desired position on the 4-way terminal block under the transformer.

If the operating voltage has been selected to 12 volts, then this wire must only be set to 12V 60W or 12V 100W, depending on the siren speaker to be used.

Similarly, if 24 volts has been selected, this wire must only be set to 24V 60W or 24V 100W, again depending on the siren speaker to be used.

Ensure that the red indicator tag terminal is tightened securely in the terminal block after selection.



**Figure 3.2** PCB jumper locations

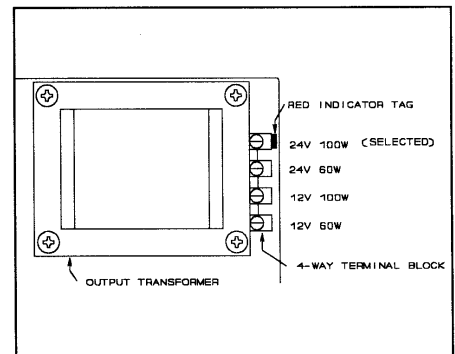
## Setting Instant Yelp or Air Horn

When PA-MAN is selected and the WAIL/YELP/MANUAL button is pressed on the remote control head, the siren will produce either instant yelp or air horn sounds, depending on the setting of the following jumper.

Referring to fig 3.2 for its location, lift the PCB jumper with needle nose pliers and move it to the desired setting.

## Replace the Lid

Replace the siren amplifier lid, taking care not to leave any foreign material inside, and not to trap any wires. Insert and tighten the six Phillips head screws. Ensure the red indicator tag indicates the voltage and power required through the viewing slot.



**Figure 3.3**  
Output power setting

## Mounting the Siren Amplifier

The siren amplifier may be mounted in the boot or under a seat, or other suitable location.

### **CAUTION!**

The amplifier must not be mounted in the engine compartment, or in locations where it may be subjected to heat or moisture.

The amplifier must have adequate ventilation as it gets warm during normal operation.

- The siren amplifier is fixed to a flat or slightly uneven surface by screwing through the four holes in the lid.
- Using the siren amplifier as a template, mark the positions for the mounting screws.
- Drill four holes of the size required for the mounting screws at the positions marked.
- Secure the siren amplifier with self-tapping screws.

## Mounting the Remote Control Head

The remote control head utilises a mounting bracket that enables it to be mounted on top of, underneath or vertically on a dashboard or centre console.

- Use the bracket as a template to mark the position for the mounting screws.
- Drill two holes of the size required for the mounting screws at the positions marked.
- Secure the mounting bracket with the supplied self-tapping screws.
- Secure the remote control head to the mounting bracket with the supplied hex head screws and flat washers. The longer of the two screws may be used to secure the P-clip for the PTT microphone cable. Do not use screws longer than 16mm.
- Adjust the tilt of the remote control head to the desired angle and tighten the hex head screws. Do not over tighten.

## Mounting the Optional Footswitch

- Locate a suitable position on the floor that enables the operator to activate the switch easily.
- Use the footswitch as a template to mark the position of the two mounting holes.
- Drill two holes of the size required for the mounting screws at the positions marked.
- Screw the footswitch securely into position.

## Mounting the Siren Speaker

The SR-44 Siren is designed to operate with one 11 ohm 60 watt or one 11 ohm 100 watt siren speaker. Ensure that you have the correct rated speaker to match the output power selected in the siren amplifier. Both types of speakers are weatherproof and may be mounted on a roof bar, bull bar or under the bonnet.

Install the siren speaker in the desired location, drilling any extra holes in the mounting bracket if necessary. Due to the varying types of mounting methods that may be encountered, and to keep waste to a minimum, mounting hardware is not supplied. Ensure that the speaker is securely fixed into position.

## Wiring the Siren Amplifier

The siren amplifier has two short wire looms protruding from the rear – one with an 8-way male connector attached for the siren wiring, the other a 4 way male connector for the lights wiring. A single wire also protrudes for the optional footswitch. On the front of the siren amplifier there is a 10-way flat ribbon connector for the remote control head, and a 4-way connector for the PTT microphone. Female connector housing and crimp terminals are provided to complete the wiring. Two metre PTT microphone and remote control head cables are provided. Four-metre cables are available if required. To order, contact Australian Warning Systems.

Refer to figures 3.4 and 3.5 in conjunction with these instructions. Use wire of the same gauge or heavier when wiring the siren.

Using a suitable crimping tool, or pliers and a soldering iron, attach the female connectors to the necessary wires as outlined below, and then insert them into the correct holes in the female connector housing. Ensure that the terminals are attached securely to the wire, as a loose terminal may cause erratic operation of the siren.

When wires and cables pass through metal panels etc., make sure they are protected from abrasion with grommets or tape.

### **CAUTION!**

***Do not insert the fuse in the positive lead fuse holder until all other wires are terminated and plugged in.***

## Wiring the 8-way Connector (Siren)

- Connect the two white wires to the siren speaker.
- Connect the grey wire to the switched side of the vehicle's horn via the supplied isolation diode. The isolation diode must be installed the correct way for the horn button to control the siren tones.
- To install the diode correctly, proceed as follows.
- For positive switching horns, connect the red side of the isolation diode to the switched side of the horn. The black side connects to the grey wire in the 8-way loom to the siren.
- For negative switching horns, connect the black side of the isolation diode to the switched side of the horn. The red side connects to the grey wire in the 8-way loom to the siren.
- Connect the blue wire to the vehicle's dash light circuit.
- Connect the two brown wires to the vehicle's two-way radio speaker.
- Connect the black wire to a solid earth point or the negative battery terminal.
- Connect the red wire to the battery positive supply via a fuse holder fitted with the correct rated fuse. However, do not insert the fuse yet. For 12 volt sirens use a 15 amp fuse, and for 24 volt sirens use a 10 amp fuse.

## Wiring the Lights

The SR-44 Siren is capable of controlling two separate 30 amp lights circuits. For example, rotating beacons may be controlled with one switch, and spotlights with the other. To wire the above configuration, proceed as follows.

- Connect the red and white wires from the 4 way connector to a positive supply in the vehicle via separate in-line fuse holders fitted with 25 amp fuses. The red wire is the power supply for lights 1 and the white wire for lights 2. Leave the fuses out until wiring is completed.

**Do not connect these wires in the same positive wire as the siren supply.**

- Connect the orange wire to the positive side of the lights 1. Connect the other side of the light to earth. The LIGHTS 1 switch controls this circuit.
- Connect the green wire to the positive side of the lights 2. Connect the other side of the light to earth. The LIGHTS 2 switch controls this circuit.

### Wiring the Single Wire to the Footswitch

- Connect the orange single wire to one side of the footswitch.
- Connect the other side of the footswitch to a fused positive supply.

### Final Connection

Plug one end of the 10-way flat ribbon cable into the remote control head, and the other end into the siren amplifier. The connectors on the ribbon cable are polarised and will only plug in one way.

Plug the PTT microphone cable into the connector next to the 10-way flat ribbon cable connector on the siren amplifier. Secure the chrome plug end of the PTT microphone cable to the dashboard with the supplied P-clip. Alternatively, secure it to one of the bolts on the remote control head. Plug the PTT microphone into the chrome plug end. Screw the PTT microphone clip onto the dash or other suitable location.

Plug the 8-way connector and 4-way connector into their respective mating halves.

Ensure the siren is in the OFF position at the remote control head, and then install the fuses into the fuse holders for the siren and lights circuits. The siren is now ready to be tested. Refer to the operation section for details.

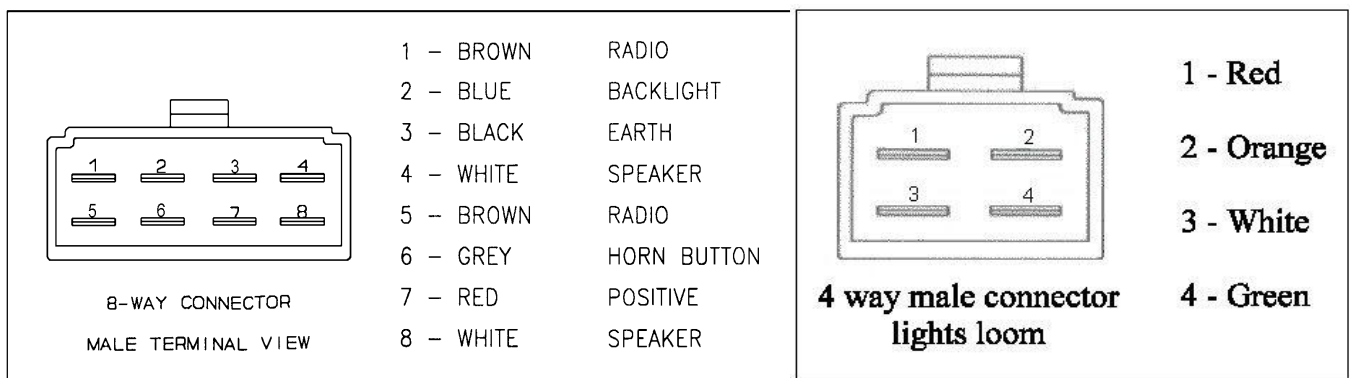
### Two-way Radio Loudness Adjustment

This adjustment has been factory set to suit most two-way radios encountered in emergency vehicles, and therefore adjustment is rarely necessary. However, should adjustment be required, set the siren to RADIO and carefully insert a thin bladed insulated screwdriver into the hole on the side of the siren amplifier and adjust the trim-pot for the required output level from the siren speaker whilst receiving a radio broadcast. Once set, the loudness of the radio re-broadcast can be adjusted with the radio's volume control.

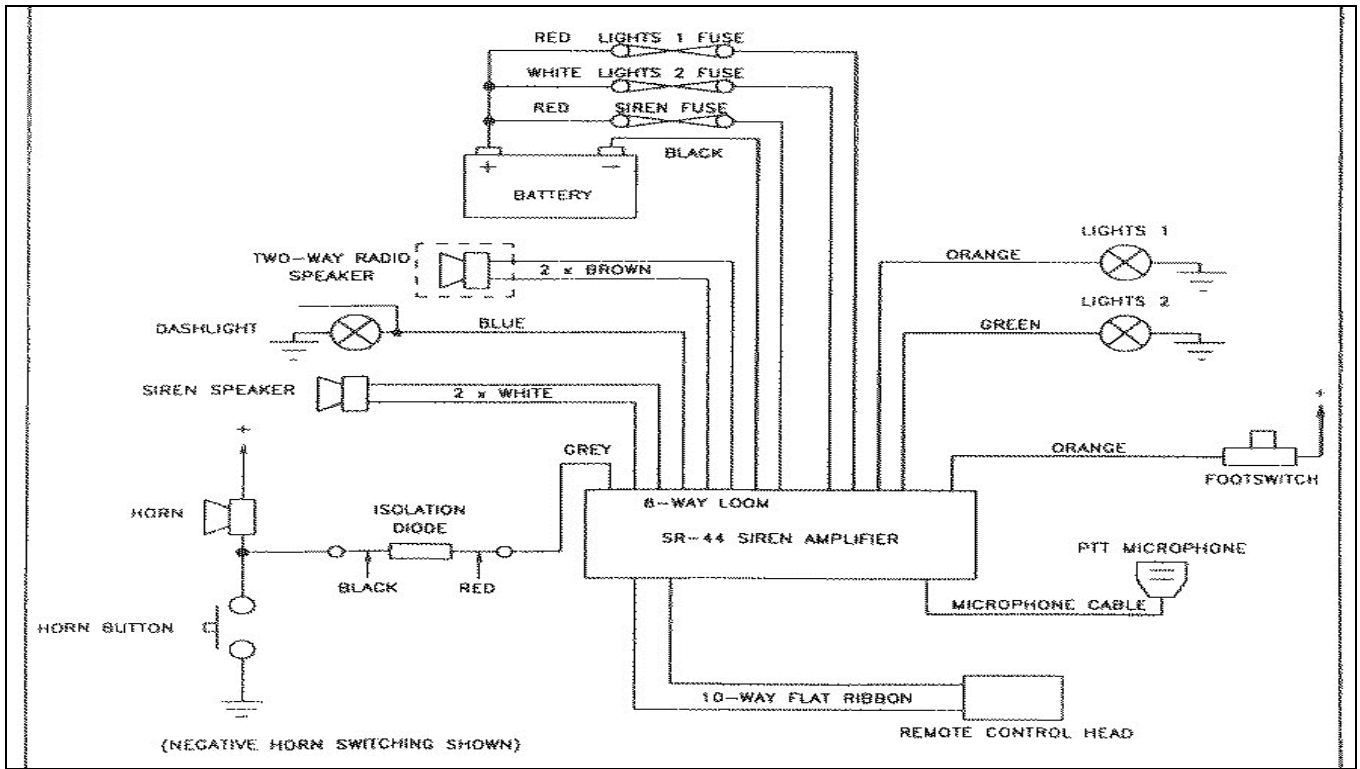
### PA Level Adjustment

This adjustment has been factory set for maximum PA level without distortion and feedback howl when fitted to most vehicles. However, should howl be experienced, adjust the PA level by switching the siren to PA-MAN, keying the PTT microphone, then inserting a thin bladed insulated screwdriver into the hole next to the PTT microphone plug on the siren amplifier.

Turn the trim-pot anti-clockwise to decrease the level. Two people may be required for this operation depending on the location of the siren amplifier.



**Figure 3.4**  
8-way connector wiring



**Figure 3.5**  
Wiring diagram

## Section 4 Operation

### General

All controls used during normal operation of the siren are located on the remote control head front panel. See figure 4.1. Using the PTT switch on the microphone will override all siren functions except radio re-broadcast for instant PA use.

### Selector Switch

This is a five-position switch offering the following functions.

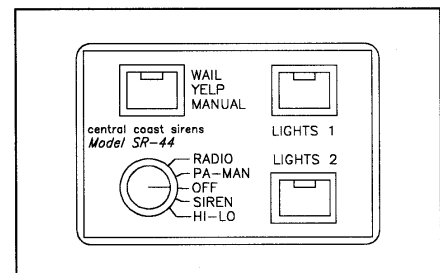
**OFF** – Siren is turned off. All siren functions, PA and RADIO are silent. However, LIGHTS 1 and LIGHTS 2 may still be used. Panel will be backlit when the vehicle dash light is on.

**SIREN** – This is the main siren position. Alternate pressing of the WAIL/YELP/MANUAL button and/or the vehicle's horn button selects wail and yelp.

**HI-LO** – Switching to this position produces the Hi-Lo siren sound.

**PA-MAN** - The siren is normally silent in this position, but pressing the WAIL/YELP/MANUAL button or the vehicle's horn button will produce either instant yelp or air horn sounds (as selected during amplifier configuration) for as long as the button is held (manual operation). Using the PTT microphone produces Public Address from the siren speaker.

**RADIO** – In this position, messages received over the vehicle's two-way radio are amplified and re-broadcast from the siren speaker.



**Figure 4.1**  
Remote Control Head

### CAUTION!

**DO NOT BROADCAST UNSQUELCHED RADIO OR MUSIC WHILST IN RADIO MODE, AS THIS WILL HAVE A DETRIMENTAL EFFECT ON THE OUTPUT TRANSISTORS OF THE SIREN AMPLIFIER.**

## Wail/Yelp/Manual Button

The function of this button is described above under SIREN and PA-MAN. The red LED on this button lights up when the selector switch is in all positions except OFF.

## Lights 1 & Lights 2 Switches

These switches control the lighting circuits as wired during installation. The siren does not have to be on for these switches to operate. The red LED's in the switches light up to indicate when the lights are on.

## Footswitch Operation

For the footswitch to change siren modes from wail to yelp and back again, the selector switch must be in the SIREN position and wail must have been selected with the WAIL/YELP/MANUAL button or vehicle's horn button. To revert control of the siren back to the WAIL/YELP/MANUAL button or vehicle's horn button, select wail with the footswitch.

## Section 5 Maintenance

The siren will give years of trouble free service under normal operating conditions provided the following precautions are taken into account:

- The siren amplifier must not be mounted near vehicle heater outlets, or other sources of heat.
- Do not use wire of a lighter gauge than that used in the siren connector looms. The use of heavier wire is recommended.
- Never place articles of clothing, sheets of paper, folders etc. on top of the siren amplifier, as this will impede ventilation.
- Do not allow the siren amplifier or remote control head to get wet.
- Use only a soft cloth dampened with water when cleaning the outside surfaces of the siren amplifier and remote control head.
- Do not open or attempt to repair the siren amplifier during the warranty period, as this will void the warranty. See your warranty statement below.

## Replacement of Fuse

Replace the fuse only with the following types:

\*12 volt use 15 amp fast blow

\*24 volt use 10-amp fast blow

## Siren Warranty

Australian Warning Systems warrants that its Electronic Siren Control Units and Electronic Siren Amplifiers are free from defects in material and workmanship, and will perform to applicable Australian Warning Systems specifications for (2) two years from the date of shipment. A warranty period of (1) one year applies to Siren Speakers and Push to talk Microphones, provided they are only used with Australian Warning Systems Electronic Siren Control Units and Electronic Siren Amplifiers. This warranty is in lieu of any other warranty expressed or implied. In no event will Australian Warning Systems be liable for special or consequential damages as a result of any alleged breach of this warranty provision. The liability of Australian Warning Systems will be limited to repairing or replacing at their option, any defective equipment covered under this warranty.

Equipment or parts that have been subjected to abuse, misuse, accident, alteration, neglect, unauthorised repair or installation are not covered by this warranty, nor are they covered if used in a manner not intended. Australian Warning Systems reserves the right to accept or reject any warranty claim, based on the above exclusions.

As to equipment repaired or replaced under warranty, the warranty period shall continue for the remainder of the original warranty period, or (90) Ninety days, whichever is greater.

**No liability is assumed for expendable items such as fuses and lamps.**



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