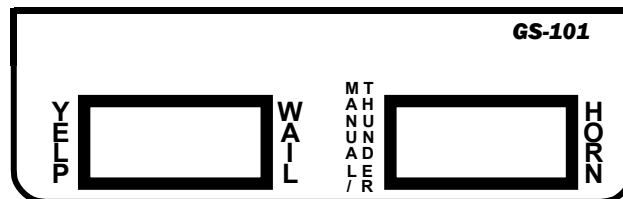
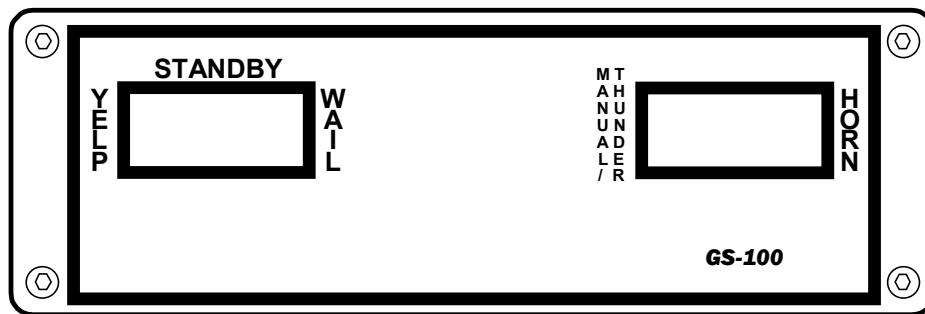


# CARSON

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## TECHNICAL BULLETIN



## INSTALLATION AND OPERATING MANUAL

### GS-100/101-01 14V

Carson is a trademark of Carson Manufacturing Company, Inc.

#### WARNING



**Sound Hazard** - Sound level from siren speaker (>120dBA @ 10 feet) may cause hearing damage. Do not operate siren without adequate hearing protection for you and anyone in immediate vicinity. (Ref. OSHA 1910.95 for occupational noise exposure guidelines)

## **GS-100/101-01 SPECIFICATIONS**

<b>INPUT POWER:</b>	9-16 Volts DC, 8 Amps DC
<b>SIREN MODE OUTPUT POWER:</b>	105 Watts RMS (15 VDC input, 100W speaker)
<b>SIREN FREQUENCY:</b>	700Hz - 1450Hz Nominal
<b>CYCLE RATES:</b>	WAIL - 15 cycles/min YELP - 205 cycles/min THUNDER - 100 cycles/min
<b>OPERATING TEMPERATURE:</b>	-15° F to +140° F
<b>SIZE:</b>	6" Wide X 2" High X 6" Deep
<b>WEIGHT:</b>	3.5 pounds
<b>PROTECTION:</b>	High Voltage – Siren output stops with input voltage above highest rating Stops high output power from blowing speaker Reverse Polarity - Fuse blows when power is wired backwards Shorted Output – Fuse blows if speaker shorts (a common problem)

### **NOTICE**

Due to continuous product improvements, we must reserve the right to change any specifications and information, contained in this manual at any time without notice.

Carson Manufacturing Co., Inc. makes no warranty of any kind with regard to this manual, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Carson Manufacturing Co., Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual.

See [www.carsonsirens.com](http://www.carsonsirens.com) for latest information.

## INSTALLATION

Proper installation of the unit is essential for years of safe, reliable operation. Please read all instruction **before** installing the unit. Failure to follow these instructions can cause serious damage to the unit or vehicle and may void warranties.

### SAFETY PRECAUTIONS

For the safety of the installer, vehicle operator, passengers and the community please observe the following safety precautions. **Failure to follow all safety precautions and instructions may result in property damage, injury or death.**

**Qualifications** - The installer must have a firm knowledge of basic electricity, vehicle electrical systems and emergency equipment.

#### WARNING



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**Mounting** - Mount the unit for easy access by the vehicle operator. DO NOT mount in air bag deployment area. Assure clearances before drilling in vehicle.

**Wiring** - Use wiring capable of handling the current required. Make sure all connections are tight. Route wiring to prevent wear, overheating and interference with air bag deployment. Install and check all wiring before connection to vehicle battery.

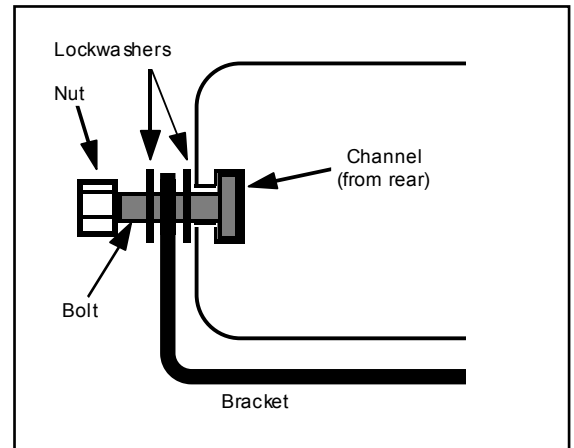
**Testing** - Test all siren functions after installation to assure proper operation. Test vehicle operation to assure no damage to vehicle.

**Keep These Instructions** - Keep these instructions in the vehicle or other safe place for future reference. Advise the vehicle operator of the location.

### MOUNTING

The mounting bracket supplied can be installed above or below the unit. Mounting bolts (standard 1/4-20) slide into channels on each side of the case. Lockwashers should be used between the case and bracket as well as between the bracket and nut. Choose a mounting location convenient to the operator and away from any air bag deployment areas. Inspect behind mounting area for clearance. Assure adequate ventilation to prevent overheating. Consider wire routing and access to connections. Install mounting bracket to vehicle using 1/4" hardware (not supplied).

**GS-101** Remote Bracket is mounted underneath the vehicle dashboard with #8 mounting hardware. Mount in a location away from the driver's or passenger's legs.



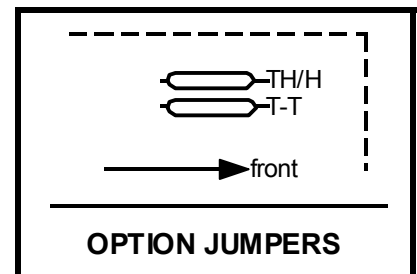
### INSTALLER-SELECTABLE OPTIONS

Carefully cutting programming resistor jumpers on the printed circuit board inside the case can select various options.

**Accessing Program Options:** Use a 7/64" allen wrench to remove 4 corner screws on rear and slide the chassis out roughly 3".

**Two-Tone** - Two-Tone can replace Thunder by cutting the jumper resistor labeled "T-T".

**Thunder and Horn Disable** - Disable both tones by cutting the jumper resistor labeled "TH/H".



**Note:** Tones may also be disabled by disconnecting wire that normally attaches to rocker switch.

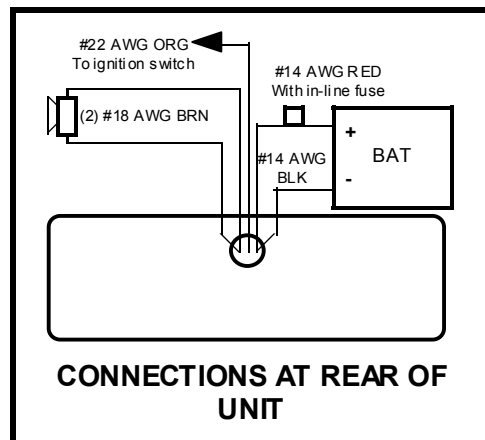
## ELECTRICAL CONNECTIONS

### Disconnect vehicle battery before making any electrical connections.

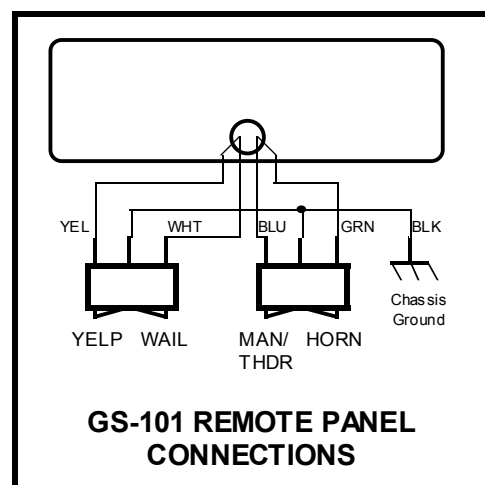
Electrical connections to the unit are made using common butt splices attached to the leads provided. The power supply for the unit must be capable of delivering peak currents up to 50 amps for adequate short circuit protection and reliable operation. The preferred source is directly at the vehicle battery. The unit is provided with an in-line fuse. **Failure to adequately crimp splices can result in improper operation or burning the wire.**

**Wire Size and Termination** - The diagram shows the minimum wire size used for each connection. If the wire is longer than 10 ft. use the next larger wire size. Use only high quality crimp connectors for installation on the vehicle.

**Siren Enable Connection (orange lead)** - This is like a power switch for the unit. Connect to a positive circuit controlled by the vehicle ignition switch, usually a terminal at the vehicle fuse block. The required current is low. Permanent power connection is not recommended as this keeps unit on unattended and may drain battery.



**GS-101 Remote Panel Connections** - The remote panel is connected to the amplifier using butt splices, #22 lead wire and 3/16" quick-connect terminals (supplied loose). The adjacent diagram shows the proper lead color/terminal connections. The center terminal of each switch should be connected to a nearby chassis ground or the negative lead of the battery.



## OPERATION

### **WARNING**



**Sound Hazard** - Sound level from siren speaker (>120dBA @ 10 feet) may cause hearing damage. Do not operate siren without adequate hearing protection for you and anyone in immediate vicinity. (Ref. OSHA 1910.95 for occupational noise exposure guidelines)

### **POWER ON/OFF**

Power to the unit is controlled by the vehicle ignition switch.

### **SELECTOR SWITCH**

A 3-position rocker switch controls the primary operating function of the siren.

**Yelp** - A rapidly changing tone used in congested areas.

**Wail** - A slower changing tone used on highways.

**Standby** - A silent mode that allows Manual and Horn operation.



### **MANUAL/THUNDER**

This momentary rocker switch position provides a very rapid changing tone (Thunder) when the selector switch is in the Yelp or Wail positions. This tone is used at intersections and very highly congested areas. Pressing the button once changes to the Thunder tone and pressing again changes the tone back to Yelp or Wail.

With the selector switch in the Standby position this switch provides Manual siren tone control, rising when pressed and falling when released. This is used to momentarily alert motorists or in low noise areas.

Optional operation includes replacement of the Thunder tone with Two-Tone or disabling the Thunder tone entirely.



### **HORN**

This momentary rocker switch position provides a simulated air-horn tone while pressed. This can be used to supplement the normal vehicle horn and is useful at intersections or in low noise areas. This tone will override all other siren tones. This function may be disabled during installation.

## SERVICE

This unit is designed to provide years of reliable service under even the worst conditions. Many times there may appear to be a problem with the unit when the true problem is in the speaker or improper installation. The following chart shows typical symptoms and possible causes.

A blown in-line fuse doesn't necessarily mean that the unit is bad. If a speaker or speaker lead is shorted this fuse will blow before the unit is damaged. Disconnect the speaker leads and replace the fuse. If the siren emits a sound when in the Yelp position it is OK. Check the speaker or leads for possible shorting.

### PROBLEMS

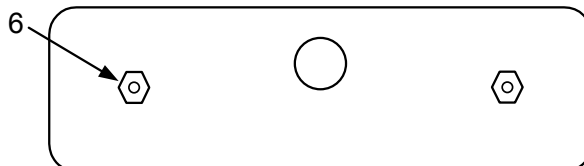
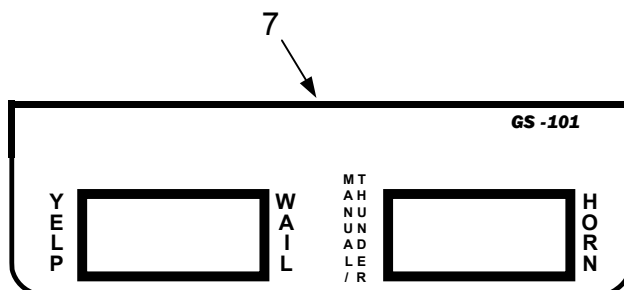
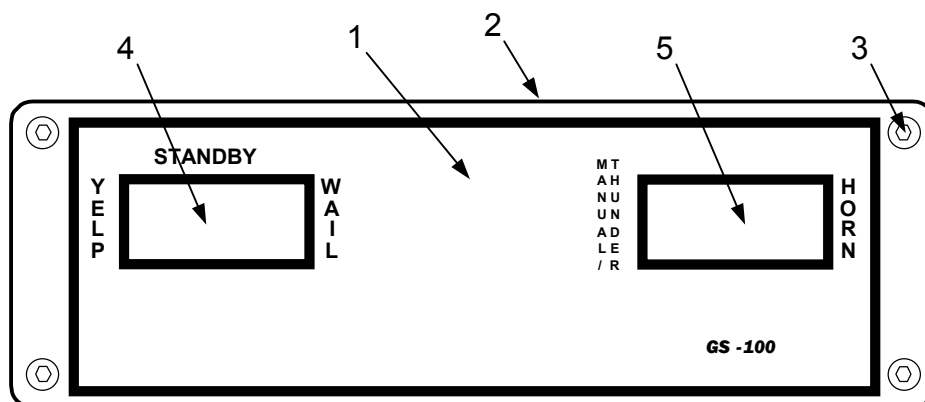
Symptom	Possible Cause	Check
No Power or siren output	Connections loose In-line fuse blown Loose connection at power source No power to orange Enable lead	Do you hear a "pop" when turned on? Is an external fuse or circuit breaker used? Are the power leads connected to a good buss? With siren on, yelp selected, listen for tone in amplifier.
No siren tones	High Voltage Protection Bad Speaker	The input voltage must be less than highest rating. With siren on, yelp selected, listen for tone in amplifier.
Distorted siren sound	Speaker assembly loose Intermittent remote switch connection Low Vehicle voltage	Is the speaker bell or tip loose? Are the remote switches wired properly?  The input voltage must be greater than lowest rating.
Intermittent siren tone	High Voltage Protection Connection loose Bad Power connection Circuit breaker in supply connection	Is the vehicle voltage regulator working properly? Are the connections tight on the back of the unit? Is there a loose connection on a power lead? Is a circuit breaker used with at least 50A rating?
Horn function stuck on or Manual/Thunder stuck on	Horn switch stuck Manual/Thunder switch stuck	Does the Horn switch return fully when released? Does the Manual/Thunder switch return fully when released?
Wrong siren tone	Two-Tone option installed Remote switches wired incorrectly	Is the T-T option jumper cut? Are the remote switches wired properly?
Thunder or Horn not working	Thunder disabled Horn disabled	Is the TH/H option jumper cut? Is green lead disconnected from horn switch?

## RETURN

If you have any questions concerning this or any other Carson product, please contact our **Technical Service Department** at (888) 577-6877. Many issues can be handled over the phone. We can also be reached via e-mail at [service@carson-mfg.com](mailto:service@carson-mfg.com)

If a product must be returned for any reason, please contact our Technical Service Department to obtain a Returned Merchandise Authorization number (RMA#) before you ship the product to Carson. Please write the RMA# clearly on the package near the mailing label. Be sure to provide a return address, contact and phone number, along with a brief description of the problem.

## PARTS



Item	Part #	Description
	CP4739	Cover, extruded (does not include Front Panel or slide out Chassis)
	CP4752	Fuseholder, in-line with 15A fuse
	ATO/ATC 15A	Fuse, 15 Amp Automotive
1	CP4749	Label, front panel
2	CP4744	Panel, front
3	CP4759-CV-06	Screw, 3/8" #6-32 black socket head (8 required)
4	CP4748	Switch, gray rocker on-off-on (Wail – Standby – Yelp) (substitute CP4748-2 red switch)
5	CP4751	Switch, gray rocker mom. on-off-on (Man/Thdr – Horn) (substitute CP4751-2 red switch)
6	CP4197-02	Transistor, output FET (2 required)
	<b>Accessory</b>	<b>Description</b>
	CP3571	Bracket, 'U' Dash Mount
	ED1608	Kit, Hardware (includes 1/4-20 bolts, nuts, and lockwashers for mounting amplifier)
	<b>GS-101 Only</b>	
	CP4062-K2523	Connector, 3/16" QC Terminal (6 required)
7	ED1610	Panel Assembly (includes Bracket with Label and Switches)