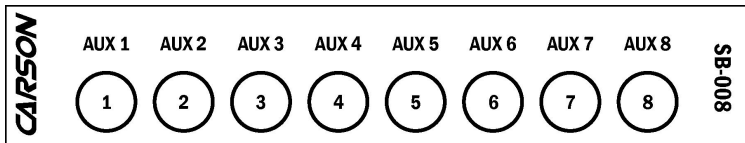


# **CARSON**

**Carson Manufacturing Co., Inc.**  
**5451 North Rural Street**  
**Indianapolis, IN 46220**  
Phone: (888) 577-6877 Fax: (317) 254-2667  
[www.carsonsirens.com](http://www.carsonsirens.com)

## **SB-008-25**

### **SWITCH CONTROL BOX**



## **INSTALLATION AND OPERATING INSTRUCTIONS**

Carson is a trademark of Carson Manufacturing Company, Inc.

## TABLE OF CONTENTS

SPECIFICATIONS .....	2
GENERAL DESCRIPTION .....	2
INSTALLATION .....	3
SAFETY PRECAUTIONS .....	3
UNPACKING .....	3
MOUNTING .....	3
OPTION SWITCHES .....	3
ELECTRICAL CONNECTIONS .....	4
PUSHBUTTON SWITCH PROGRAMMING .....	6
OPERATION .....	7
GENERAL .....	7
POWER ON/OFF .....	7
PUSHBUTTON SWITCHES .....	7
PUSHBUTTON SWITCH LEGENDS .....	7
ALERT .....	7
DIAGNOSTICS .....	7
SERVICE .....	8
PARTS .....	8
RETURN .....	8
LIMITED WARRANTY .....	8

## SPECIFICATIONS

Input Voltage	9 - 16 VDC (negative ground)
Input Current	160 AMPS Max. (80 AMPS for switch 1 - 4; 80 AMPS for switch 5 - 8)
Standby Current	Less than 100 ma
Output Current	20 AMPS each, each output protected with built-in fuse
Operating Temp.	-15° F to +140°F
Controls	(8) push-button switches with backlit replaceable legends Internal DIP switch option selectors
Connections	(2) Positive #10 AWG input (up to #6 AWG) (2) Four position terminal block plug outputs (1) Positive and Negative plug #22AWG wire for enable input and backlighting
Size	6-1/8" Wide, 1-3/8" High, 6-1/2" Deep,
Weight	2-1/2 LBS.

### 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.

## GENERAL DESCRIPTION

The SB-008 pushbutton switch control box is a premium unit designed for automotive use. Eight programmable pushbutton switches with replaceable legends provide typical automotive lighting and other device control up to 20 amps per switch. Each output fused and monitored with visual and audible indicators for diagnostics. An alert periodically sounds (may be disabled) when outputs are on to help prevent leaving lights on unintentionally. The face is LED backlit and the legend turns red when pushbutton is activated. The pushbutton switches are protected with a rubber overlay to resist splashes, dust, etc.

## 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.

**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. To prevent internal damage to the unit, mounting bolts must not enter case more than 1/4".

**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 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.

### UNPACKING

Inspect contents for shipping damage. If found **alert carrier immediately**. Contents should include unit, 2 mounting bolts, 2 four position terminal block plugs, 1 red and black #22 AWG wire plug, legend sheet, and these instructions. Contact supplier immediately if any components are missing.

### MOUNTING

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. If mounting in a rack or console, make sure that mounting bolts do not enter case more than 1/4".

### OPTION SWITCHES

Remove cover (single screw on back) to gain access to option DIP switches on PCB.

**SW-1 and 2 (INST ON) Instant ON** - The Enable input is normally required to turn on the unit. Turning these switches on allows any pushbutton to turn on the unit without the Enable input.

**SW-3 (ALRT) Alert Disable** - Turn this switch on to disable the alert feature.

**SW-4 (TMR) Timer** - Normally the timed momentary output is on for 10 seconds. Turn this switch on for a 20 second timed momentary.

**SW-5 (PRG) Program Mode** - See PROGRAMMING section. Do not move this switch until ready to program.

**ELECTRICAL CONNECTIONS**

Electrical connections to the unit are made using terminal block plugs and wire splices. A label on the unit identifies each connection function. Attach terminal leads by stripping 3/8", inserting into plug and clamp by tightening screw. Make sure the screw is tight and the wire can't be pulled out.

**Failure to adequately tighten the screw can result in improper operation or burning the connector and wire.**

**Wire Size and Termination** - The diagram on next page shows the minimum wire size used for each connection, along with recommended lead color. 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.

**Fuses / Breakers**

Each output is fused and should be limited to 20 Amps. Properly rated circuit breakers should be connected between the power source and power inputs. **Failure to install proper circuit breakers or fuses can result in damage to the unit and/or vehicle.**

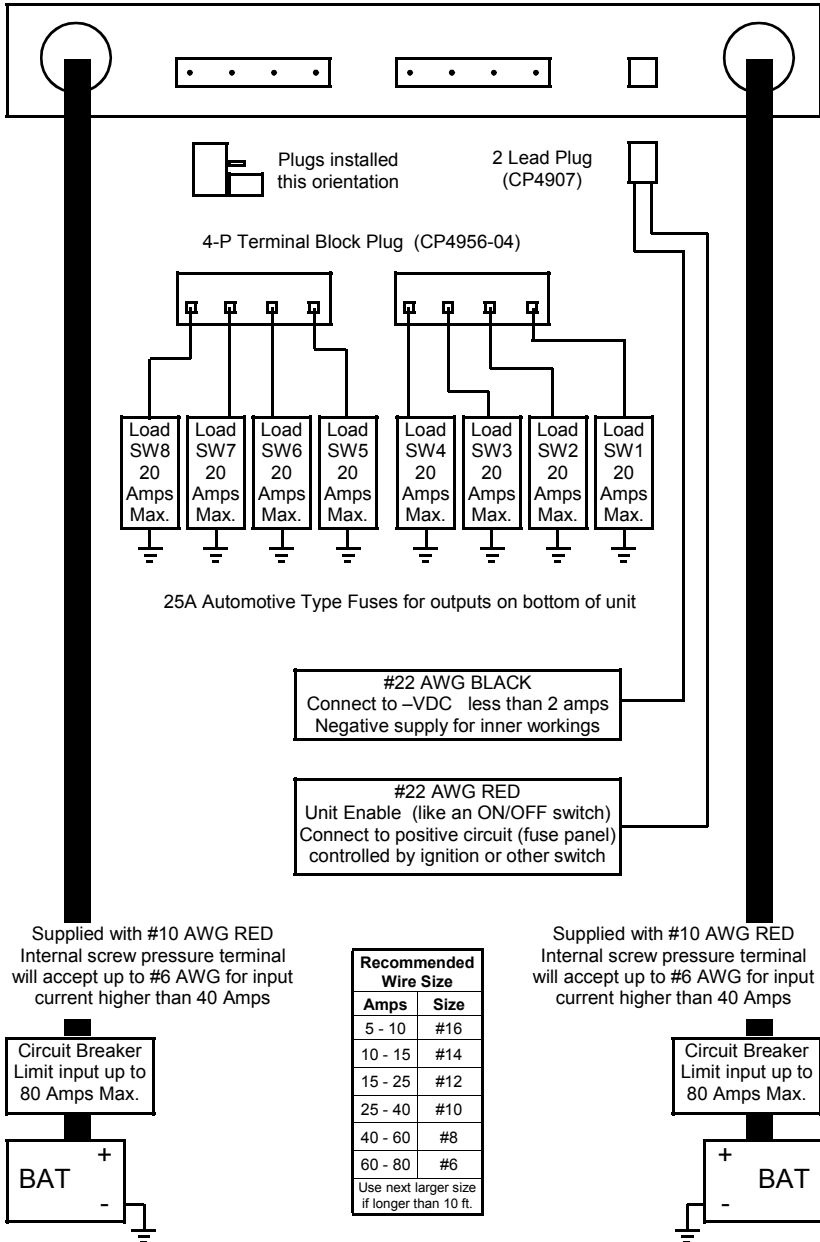
**+VDC Power Input Connections** - Connect to positive power. The unit is shipped with #10AWG wire on both inputs. #10AWG wire can handle up to 40 amps for a total of 80 amps output. If higher amperage is required the internal screw pressure terminals will accept up to #6AWG wire which can handle up to 80 amps for a total of 160 amps output.

**Unit Enable Input Connection** - 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 panel. Permanent power connection is not recommended as this keeps unit on unattended and may drain battery. The pushbutton switches may also be setup like a power switch for the unit. See **Instant On** under OPTION SWITCHES section.

**GND Connection** - Connect to negative power (-VDC). This connection is for the inner workings of the unit and is less than 2 amps.

**Output Connections** - Each output is fused (located on bottom of unit) and can handle up to 20 amps. Terminal block plugs are used to connect outputs to the loads. Use wire up to #12AWG stripped 3/8" and inserted into plug and tighten screw.

**ELECTRICAL CONNECTIONS**



### PUSHBUTTON SWITCH PROGRAMMING

Each pushbutton switch may now be programmed once electrical connections are made and power is available to the unit. The programming mode is entered by changing an internal DIP switch.

Note: The unit must be turned on and off with the switch on the enable input to program the function of each auxiliary control switch. See Unit Enable Input Connection under ELECTRICAL CONNECTIONS section. The **Instant On** feature may be used to control power during programming and in this case switch 1 is recommended to power up the unit.

Note: Any lights and devices will operate like normal when the pushbutton switches are activated. Temporarily disconnecting output terminal block plugs while programming is recommended.

#### Follow these steps to program the unit.

##### Access the internal DIP switch.

1. Turn unit off (backlight LEDs and pushbutton switch legends dark)
2. Optionally detach the 4-P terminal block plugs from the back of the unit to prevent activating lights and devices while programming.
3. Remove the case cover by removing single screw at the back of the unit.

##### Get into program mode.

1. Turn unit on with enable input or pushbutton switch 1.
2. Enter the program mode by turning SW-5 (PRG) DIP switch ON. Two beeps sound confirming the unit entered program mode. See OPTION SWITCHES section for location.

##### Set Pushbutton Switch Operation.

1. Each pushbutton switches current operation program status is indicated on the face of the unit using colors and flashing. See the table below for switch status definition.
2. Change each switches operation by momentarily pushing the switch.

Switch Status	Auxiliary Control Switch Operation
Off	Push On / Push Off (Default)
Constant RED	Push On / Push Off and grouped with Master Switch
Flashing	Momentary
Flashing 2X Rate	Timed Momentary (Gun Lock Timer) (On for 10 seconds or 20 seconds See <b>Timer</b> option)

Loop →

Note: **Switch 1** is designated as the Master Switch and cannot be changed. This switch will remain Constant RED. If other switches are not programmed as grouped this switch is just Push On / Push Off.

Note: The **Timed Momentary** operation, typically used as a Gun Lock Timer, must begin with switch 8. If switch 8 is programmed as timed momentary only then may switch 7 be programmed also as a timed momentary and so on.

##### Save program and get out of program mode.

1. Once the switches are programmed as desired, save the program and exit programming mode by turning SW-5 (PRG) DIP switch OFF. Should hear two beeps sound confirming the program is saved.
2. Turn unit off (backlight LEDs and pushbutton switch legends dark).
3. Re-install the case cover and screw at the back of the unit.
4. Re-attach the 4-P terminal block plugs onto the back of the unit.
5. Programming is finished.

Note: If the unit is turned off before the SW-5 (PRG) DIP switch is turned OFF, the new programming will not be saved.

## OPERATION

### GENERAL

Each pushbutton switch on the face of the unit controls a corresponding output on the back. When pushed on, the legend above the switch will light up and +VDC is supplied to corresponding output. The unit is backlit with LED's.

### POWER ON/OFF

The unit is enabled (turned on) by applying positive voltage to the input enable lead. This is normally controlled with the ignition switch on the vehicle. See INSTALLATION section.

An **Instant On** feature may be selected so that the unit is turned on when pushbutton switch is pressed. See OPTION SWITCHES section.

### PUSHBUTTON SWITCHES

Each pushbutton may be programmed as push-on / push-off, momentary, and timed momentary to replace gun lock timer(s). Also each on/off pushbutton may be grouped together and activated with a single master switch. See PUSHBUTTON SWITCH PROGRAMMING section.

**Push on / push off** - Press pushbutton to turn on output, press again to turn off output.

**Momentary** - Press pushbutton to turn on output, output turns off when pushbutton is released.

**Timed Momentary** - Press pushbutton to turn on output, output remains on for 10 seconds after pushbutton is released. The output may be set to stay on for 20 seconds with the **Timer** option. See OPTION SWITCHES section.

**Grouped with Master Switch** - Press pushbutton 1 (Master Switch) to turn on output 1 and other pushbutton outputs programmed as part of the group. Press pushbutton 1 again to turn off output 1 and the other pushbutton outputs in the group. The other pushbuttons in the group may still be individually controlled as push on / push off at any time overriding the Master Switch.

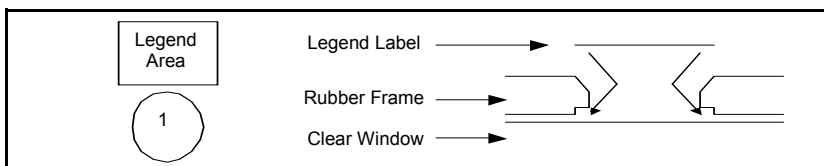
### PUSHBUTTON SWITCH LEGENDS

Different legends may be selected to match the device controlled. A sheet of stick-on legends is supplied.

Select the legend and place centered over the legend area. Press down on the legend to stick over clear window and tuck under rubber framing. Gently lift up on the sides of rubber framing to help cover the edges of the legend.

To remove a legend, use a thin edge to gently push rubber frame aside and pry between legend and clear window. Try not to puncture clear window. The stick-on adhesive is strong.

Blank (black) legends are provided for aux output switches with no function. The white background legends may be written on with permanent marker to create custom legends.



### ALERT

While any pushbutton switch is on, an alert beep is sounded every 15 seconds. Set **Alert Disable** option to disable. See OPTION SWITCHES section.

### DIAGNOSTICS

The unit constantly monitors the outputs. If there is not output voltage when there should be, the unit beeps 5 times. Then the switch will do the following.

Switch	Fault Indication	Action
On / Off Switch	Switch turns off	Output Relay turns off
Momentary Switch	Switch turns off	Output Relay turns off
Timed Mom. Switch (Gun Lock)	Beeps until timed out	Output Relay on until timed out

## SERVICE

This unit is designed to provide years of reliable service under even the worst conditions. In the event of a blown fuse, disconnect the device on the output and replace the fuse. If the fuse blows without a device on the output, there may be something wrong with the unit.

## PARTS

The following parts are available from Carson Manufacturing Company, Inc.:

Part	Description
CP3966	Bolt, mounting, 1/4-20 X 3/8" (2 required)
CP4907	Cable, 2-Pin #22AWG Black and Red
CP4956-04	Connector, 4-Pin Terminal Block Plug
CP4936	Cover (not including chassis)
ATO/ATC 25A	Fuse, 25 Amp Automotive
CP4905	Label, Front Panel Membrane Switch
CP4895	Label, Legends
CP4982	Instruction Manual

## 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.

### LIMITED WARRANTY

*Carson Manufacturing Company, Inc. warrants this new product to be free from defects in material and workmanship, under normal use and service, for a period of five (5) years from the date of delivery to the first user-purchaser.*

*During this warranty period the obligation of Carson Manufacturing is limited to repairing or replacing, as Carson Manufacturing may elect, any part or parts of such product which after examination by Carson Manufacturing is determined to be defective in material and/or workmanship.*

*This warranty does not cover labor charges for removal or re-installation of the product. Fuses and lamps are not covered under this warranty.*

*This warranty does not extend to any unit that has been subjected to abuse, misuse, improper installation or which has not been adequately maintained, nor to units which have problems related to service or modification at any facility other than the manufacturer.*

**THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL CARSON MANUFACTURING COMPANY, INC. BE LIABLE FOR ANY LOSS OF PROFITS OR ANY INDIRECT OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY SUCH DEFECT IN MATERIALS OR WORKMANSHIP.**