

CAN BOX FOR PHAZER LIGHTBARS



PROUDLY MADE IN THE USA
An ISO 9001:2008 Certified Company

This CAN (Controller Area Network) Box has dual capabilities:

- It can be used as an external controller for your lightbar, allowing the lightbar harness to consist of only 4 wires, Power, Ground, and two control wires, allowing up to 20 independently controlled functions.
- It is also designed to simplify the re-programming of Phazer lightbars.

If used for programming, connection to a computer running Windows 7 or newer is necessary for initial setup. Once programmed, an optional external USB power supply can be used for remote programming of a lightbar without the need of a computer.

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. Star Headlight & Lantern 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. Star Headlight & Lantern 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.

ONE YEAR LIMITED WARRANTY

The manufacturer warrants each new product against factory defects in material and workmanship for one year after the date of purchase. The owner will be responsible for returning to the Service Center any defective item(s) with the transportation costs prepaid. The manufacturer will, without charge, repair or replace *at its option*, products, or part(s), which its inspection determines to be defective. Repaired or replacement item(s) will be returned to the purchaser with transportation costs prepaid from the service point. A copy of the purchaser's receipt must be returned with the defective item(s) in order to qualify for the warranty coverage. Exclusions from this warranty include, but are not limited to, bulbs, strobe tubes, domes, and/or the finish. This warranty shall not apply to any light, which has been altered, such that in the manufacturer's judgment, the performance or reliability has been affected, or if any damage has resulted from abnormal use or service.

There are no warranties expressed or implied (including any warranty of merchantability or fitness), which extend this warranty period. **The loss of use of the product, loss of time, inconvenience, commercial loss or consequential damages, including costs of any labor, are not covered.** The manufacturer reserves the right to change the design of the product without assuming any obligation to modify any product previously manufactured.

This warranty gives you specific legal rights. You might also have additional rights that may vary from state to state. Some states do not allow limitations on how long an implied warranty lasts. Some states do not allow the exclusion or limitation of incidental or consequential damages. Therefore, the above limitation(s) or exclusion(s) may not apply to you.



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**STAR
WARNING
SYSTEMS**

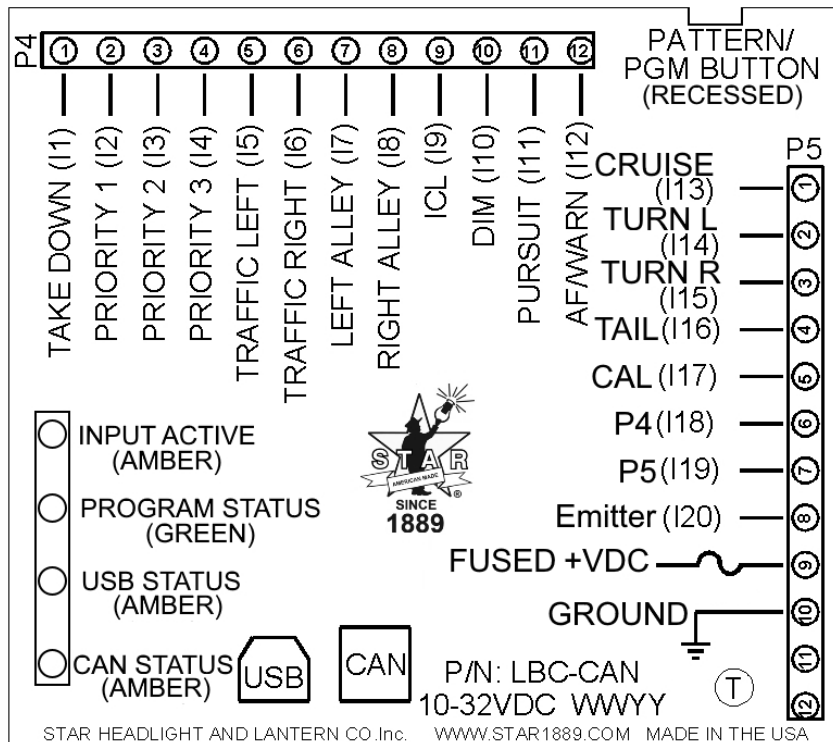
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PLIT549 REV.A 8/15/16

System Breakdown



P4 & P5: There two 12-terminal connectors located along the edge of the CAN Box.

- Terminals 11 and 12 of P5 are not used.
- If you are **NOT** using the USB port, Terminals 9 and 10 of P5 need to be connected to Power (through a 5 amp fuse) and Ground, respectively.
- Terminals 1-8 of P5 and Terminals 1-12 of P4 are utilized only if you are using the CAN Box to permanently control your bar. They would be connected to your switches to control the various functions. The name next to each input represents the standard function for each position. Your setup may not match this if special functions were requested. Please review the wiring documentation that came with your specific lightbar, or the profile you created using the 1000 Programming Utility software.

CAN Connector: The 4 pin square receptacle is used to connect the CAN Box to your lightbar using the CAN cable that is shipped with the CAN Box.

USB Connector: Used with the included USB cable to connect the CAN Box to your computer when uploading data from the computer.

Push Button: The multi function push button is located inside an access hole on the side of the box. Use a pen or other slim object to depress the button as required during programming.

Status LEDs:

INPUT ACTIVE:

Flicker: One or more of the 20 inputs are active (**P4** 1-12 and **P5** 1-8)

PROGRAM STATUS:

Quick Flash: CAN Box has a program loaded into memory

Brief Steady: Program has successfully been sent to the light bar

USB STATUS:

Steady: USB is connected and working

1 Flash: Programming has successfully downloaded from the lightbar to the computer - **Lightbar**⇒**CAN Box**⇒**Computer**

2 Flashes: Programming successfully uploaded from the computer to the lightbar - **Computer**⇒**CAN Box**⇒**Lightbar**

3 Flashes: Error

CAN STATUS:

Steady: CAN connected and functioning properly

Off: System Asleep

1 Flashes: Programming successfully uploaded from the CAN Box to the lightbar (computer connection not required)
CAN Box⇒**Lightbar**

3 Flashes: = Error or not connected

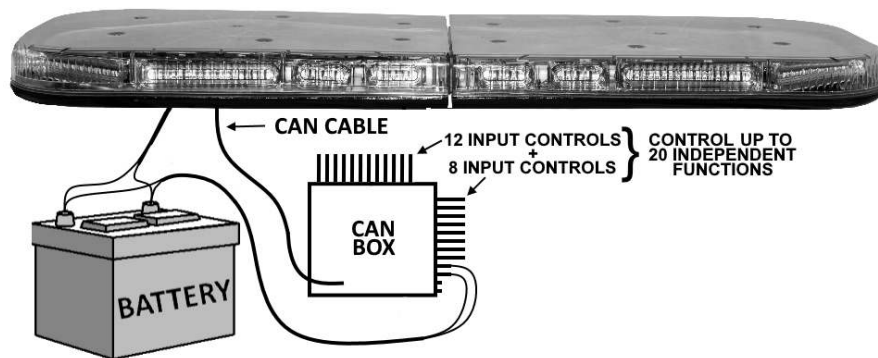


Using The CAN Box To Control Your Lightbar

If you are only using the CAN Box for Programming purposes, please skip this section and proceed to the next page.

Some lightbar installations may require the use of a smaller harness than the standard 14-conductor harness that is normally used. Also, you may wish to independently control more than the 12 functions allowed by the standard harness.

This CAN Box enables the lightbar to be installed with only a small Power and Ground harness and a separate small shielded 2-conductor harness (CAN cable) exiting the lightbar. In addition, the CAN Box allows you to independently control up to 20 different functions in your lightbar.



1. Mount the CAN Box in a dry place such as the trunk of a car.
2. Connect Terminal 9 of **P5** to +12VDC and Terminal 10 of **P5** to Ground (battery negative) as shown above.
3. Connect the Power and Ground harness from the lightbar appropriately.
4. Using 22AWG wire, connect the desired terminals from **P4** (1-12) and **P5** (1-8) to your switches. Applying +12VDC to any of these 20 input wires will enable that function on the lightbar (*lightbar must be configured properly*). These are low current inputs.

Please Note: Because the lightbar and CAN Box will draw less than 1mA when the bar is not in use, the lightbar and CAN Box can be either attached to constant battery voltage, or they can be hooked up to power through an ignition switched relay. If you are using an ignition switched source, you **MUST** use the same source for both the lightbar and the CAN Box.



Software

Please Note: The software is NOT necessary if you are only installing the CAN Box as a controller for your lightbar (described on previous page).



To program the Can Box, you must download the latest Phazer Configurator software at:
<http://www.star1889.com/downloads/phazer>



Installation

- Run the Setup.exe file.
- An icon called *1000 Lightbar Programmer* will be created.
- Double-click the icon to run the program.

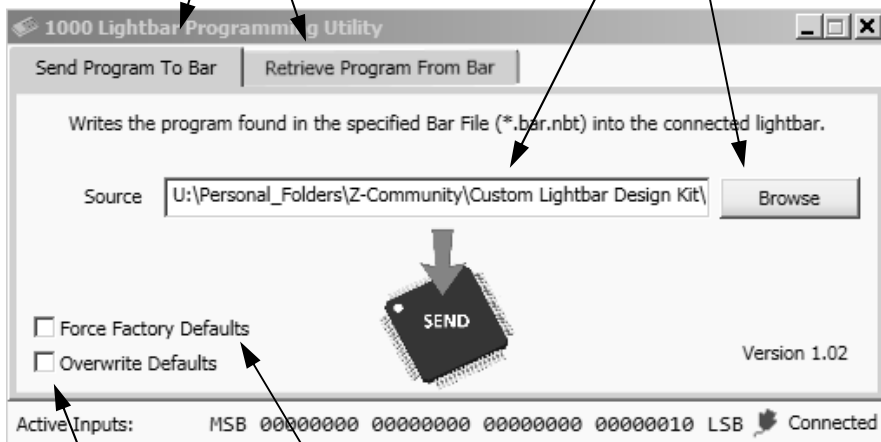
Controls

Tabs:

There are two tabs that can be used to select whether you wish to send programming to the CAN Box/Lightbar (i.e. Programming a lightbar) or if you wish to retrieve the programming from the bar (i.e. Copying the settings from a programmed lightbar).

Source Box:

Use the text field and the Browse button to select a configuration file on the computer to Upload, or to select a location and name to download and save a configuration file from the lightbar onto your computer.



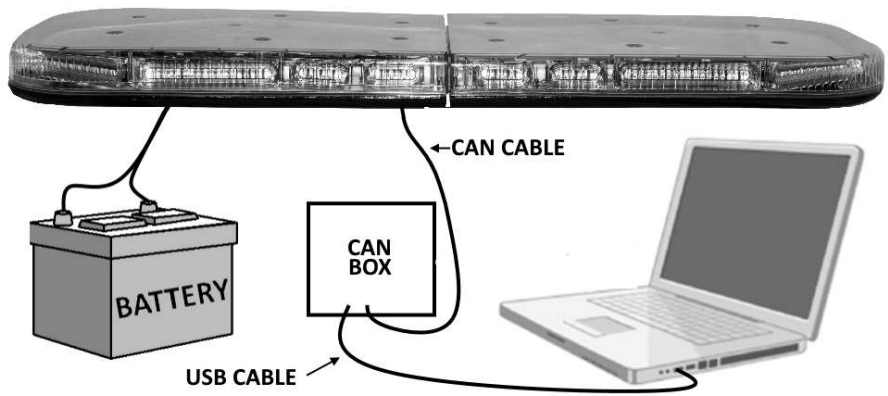
Force Factory Defaults :
Used to reset your lightbar to its factory default settings. Check this box and **do not** select a Source file. Then click the **SEND** icon.

Overwrite Defaults :
Check this box, select a Source file, and click the SEND icon to overwrite the factory default memory with the selected file.

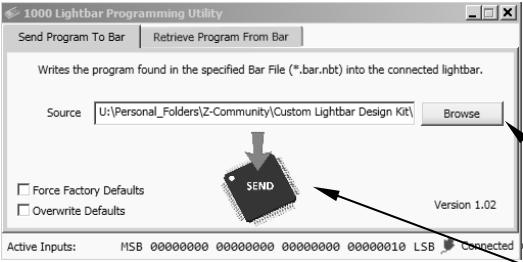
Status :
"Connected" or "Disconnected" - Indicates status of the CAN Box and the computer.

Programming Your Lightbar With A CAN Box and PC

Programming of a lightbar requires a special "*.nbt" configuration file. This file can be downloaded from another lightbar, or it can be generated from our 1000 Lightbar Programming Utility software (available from the factory).



1. Ensure your computer has the required "*.nbt" configuration file.
2. Make all of the connections shown in the diagram above. **Please note that the lightbar harness MUST be connected to Power and Ground.**

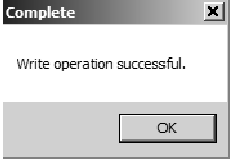


3. Install and open the 1000 Lightbar Programming Utility. The **USB Status** and **CAN Status** LEDs should both be illuminated steady burn/solid.
4. Use the **Browse** to locate the "*.nbt" configuration file that you will be programming your lightbar with and **Open** it.
5. Click the "SEND" icon.

6. If the upload was successful, you will see a pop up window indicating success. The **USB Status** LED should flash twice and the **CAN Status** LED should flash once.

In the event of failure:

- A. Check that your cables are all plugged in properly
- B. Check that the bar is properly connected to Power and Ground
- C. Unplug the USB cable, wait 10 seconds, plug it back in, and try again.



7. Programming complete. Disconnect the USB cable and test all the functions of your lightbar.

Programming Your Lightbar Using Only A CAN Box

The procedure described below is typically used in situations where you are programming multiple lightbars with the same program. This eliminates the need to use a PC for every installation. This method uploads the program to the CAN Box, which can then be used, without a PC, to program several lightbars.

The procedure is divided into two parts: **Programming the CAN Box** and **Programming Your Lightbar**. The CAN Box only has to be programmed once.

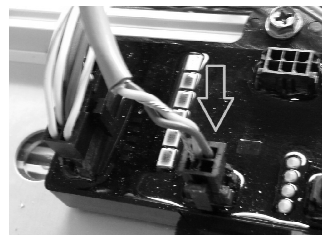
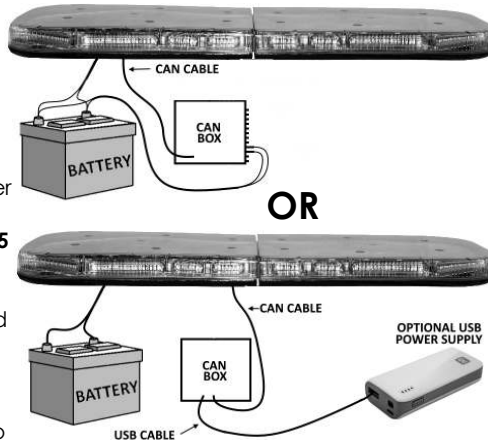
Programming the CAN Box

1. Use the enclosed USB cable to connect your PC to the CAN Box as shown to the right.
2. Follow all of the steps under the **Programming Your Lightbar With A CAN Box and PC** on the previous page.
3. The "Success/Failure" screen should display "No bar connected, data saved to the breakout box! You still need to program the light bar!", and the green **Program Status** LED on the CAN Box will flash quickly to indicate that the program has successfully uploaded and is stored in the CAN Box.

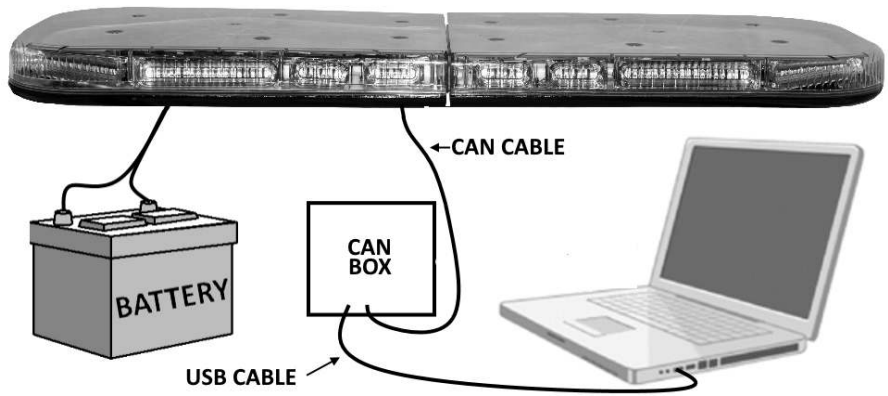


Programming Your Lightbar

1. Make your connections as shown to the right.
 - Connect the lightbar to power and ground.
 - Connect the CAN Box to power through Terminal 9 of **P5** (+12VDC) and Terminal 10 of **P5** to Ground (battery negative), **or** you can use an external portable USB power supply and the enclosed USB cable.
 - Connect the CAN Box to the lightbar using the enclosed CAN cable. The connection to the lightbar circuit is (pictured on the bottom right)
2. With none of the control/enable wires from the lightbar harness enabled, upload the program to the lightbar by pressing and holding the Pattern Select/PGM button on the CAN Box until all 4 indicator LEDs on the flash once. (3 seconds)
3. If the green **Program Status** LED stays lit for a few seconds, the bar was programmed successfully. If the LED does NOT stay lit, the transfer failed and you will need to attempt Step 2 again.
4. Once you have uploaded the program to the lightbar, disconnect the system.
5. Save the CAN Box with the program and repeat the **Programming Your Lightbar** section for any additional identical bars.



Downloading Programming From An Existing Lightbar

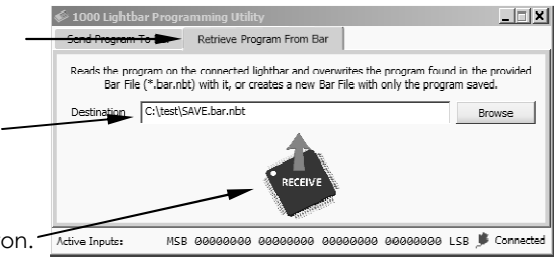


1. Make all of the connections shown in the diagram above. **Please note that the lightbar harness MUST be connected to Power and Ground.**

2. Install and open the 1000 Lightbar Programming Utility. The **USB Status** and **CAN Status** LEDs should both be illuminated steady burn/solid.

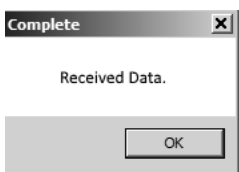
3. Select the **"Retrieve Program From Bar"** tab.

4. Browse to the folder location on your PC that you wish to save the program to and create a file name (*.NBT file).



5. Click on the **Receive** button.

6. If the upload was successful, you will see a pop up window indicating success. The **USB Status** LED should flash twice and the **CAN Status** LED should flash once.



In the event of failure:

- A. Check that your cables are all plugged in properly
- B. Check that the bar is properly connected to Power and Ground
- C. Unplug the USB cable, wait 10 seconds, plug it back in, and try again.

7. Downloading complete. Disconnect the USB cable. Use the saved file on the CAN Box to program future bars.

If you have any questions concerning this or any other product, please contact our **Customer Service Department** at (585) 226-9787.

If a product must be returned for any reason, please contact our Customer Service Department to obtain a Returned Materials Authorization number (RMA #) before you ship the product back. Please write the RMA # clearly on the package near the mailing label.