



# Combat Controller

**Operating Manual and Installation Instructions**

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## Operating Manual and Installation Instructions

**Warnings and Notices for Users and Installers**

**WARNING: Take CAUTION when installing**

This document must be delivered to and read by the end user and installer as it serves to provide you with the required information for proper and safe use of your LED Equipped product. Before operating this or any LED Equipped products the user and installer must read this manual all the way through. You will find important information in this manual that could prevent property damage and/or serious injury to the user and installer. LED Equipped products are intended to alert pedestrians and other operators of the presence of personnel, the operation of emergency vehicles, an emergency site, and any warning needs. It is your responsibility to make sure you can proceed safely before driving against traffic, entering an intersection, responding to a high rate of speed, or walking on or around traffic lanes.

Your LED Equipped emergency vehicle devices should be tested daily to insure the device and all its functions are operating correctly. If you experience a malfunction contact LED Equipped's Customer Service immediately for troubleshooting options, or a warranty or service claim. You must ensure sure that the projection of the visual and audible is not blocked by vehicle components (i.e.: open trunks, visors, compartment doors), vehicles, other obstructions, or people. LED Equipped's sirens and other audible devices project sound in a forward direction and should be installed in a forward direction that faces away from the occupants of the vehicle.

This is professional grade equipment and is intended for strict use by authorized personal only. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. You must know and be familiar with all applicable city, sate, and federal laws and regulations prior to the use of emergency vehicle warning devices. LED Equipped assumes no liability for any loss resulting from the use of this warning device. Proper installation is vital to the performance of the warning devices and safe operation of the emergency vehicle. Since the operator is under stressful environments the equipment must be properly wired and mounted to ensure effectiveness and safety. Therefore, controllers must be properly installed and placed within convenient reach of the operator so eye contact with the roadway is never lost. The effectiveness of your LED Equipped equipment is highly dependent upon correct mounting and wiring.

Improper wiring and mounting of the warning device will reduce the output and performance of the equipment. Emergency warning devices frequently 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 severe personal injury and/or serious vehicle damage, including fire. Electromagnetic interference can be caused by many electronic devices used in emergency vehicles. To ensure that this doesn't happen to you, lights bars should be mounted a minimum of 12" - 34" from the radio antenna and do not power your equipment from the same circuit or share the same grounding circuit with radio communication equipment. After installation test all the vehicles equipment together to ensure everything operates free of interference. Driver and/or passenger airbags bags (SRS) will impact the way you mount your equipment. Any equipment installed in the deployment area of the airbags will damage or dislodge the airbags and sensors. This will also reduce the effectiveness of the airbags to protect the passengers and therefore these areas must be avoided. Installers must make sure that this equipment along with any parts, hardware, wiring, power supplies, and switch boxes do not interfere with the airbags, SRS wiring, or sensors. All LED Equipped equipment needs to be mounted and installed according to the vehicle manufactures instructions and securely attached to a part of the vehicle of sufficient strength to withstand the forces applied to the equipment. This device should be permanently mounted within the zones specified by the vehicle manufactures. This especially applies to equipment mounted on the exterior of the vehicle to avoid dislodging. When mounting units on the interior of the vehicle by a method other than permanent mount is discouraged as it may become too detached under aggressive driving conditions such as sudden breaking, collision, or swerving.

## Important Points for Your Safety and Longevity of your Equipment

Installers are required to have a good understanding of automotive electronic, systems and procedures for proper installation.

* One should not stare directly into the LEDs as momentary blindness and/or eye damage may occur.
* One should not take any lights through a car wash. Use only water to clean the outer body/lens of your equipment. –
* One should not use a pressure washer to clean any LED Equipped products. Inspect and test your product daily to insure it operates properly and is mounted correctly.
* One should not cut wires or work on a unit while the unit is still connected to a power source.
* One should not install this product or rout any wires through or in the deployment area of the airbag. Doing so may cause serious personal injury as it will damage or reduce the effectiveness of the airbag by causing the unit to become a projectile.

Reference the owner's manual for your vehicle to find the airbag deployment area. The User/Installer assumes all responsibility to determine proper mounting location, based on providing ultimate safety to all passengers in the vehicle.

* If the product requires you to drill holes the installer must ensure that the drilling process does not damage any vehicle components or other vital parts. Check all sides of the mounting surface before beginning to drill. Make sure to deburr all drilled holes and remove any metal remnants or shards to avoid injury and wires from becoming spliced. Grommets are to be installed in all wire passage holes.
* For LED Equipped products to operate at optimum efficiency a secure and good electrical connection to the Batteries Ground Post must be made. The recommended procedure requires the unit's ground wire be connected directly to the NEGATIVE (-) battery post.

**Included Parts**

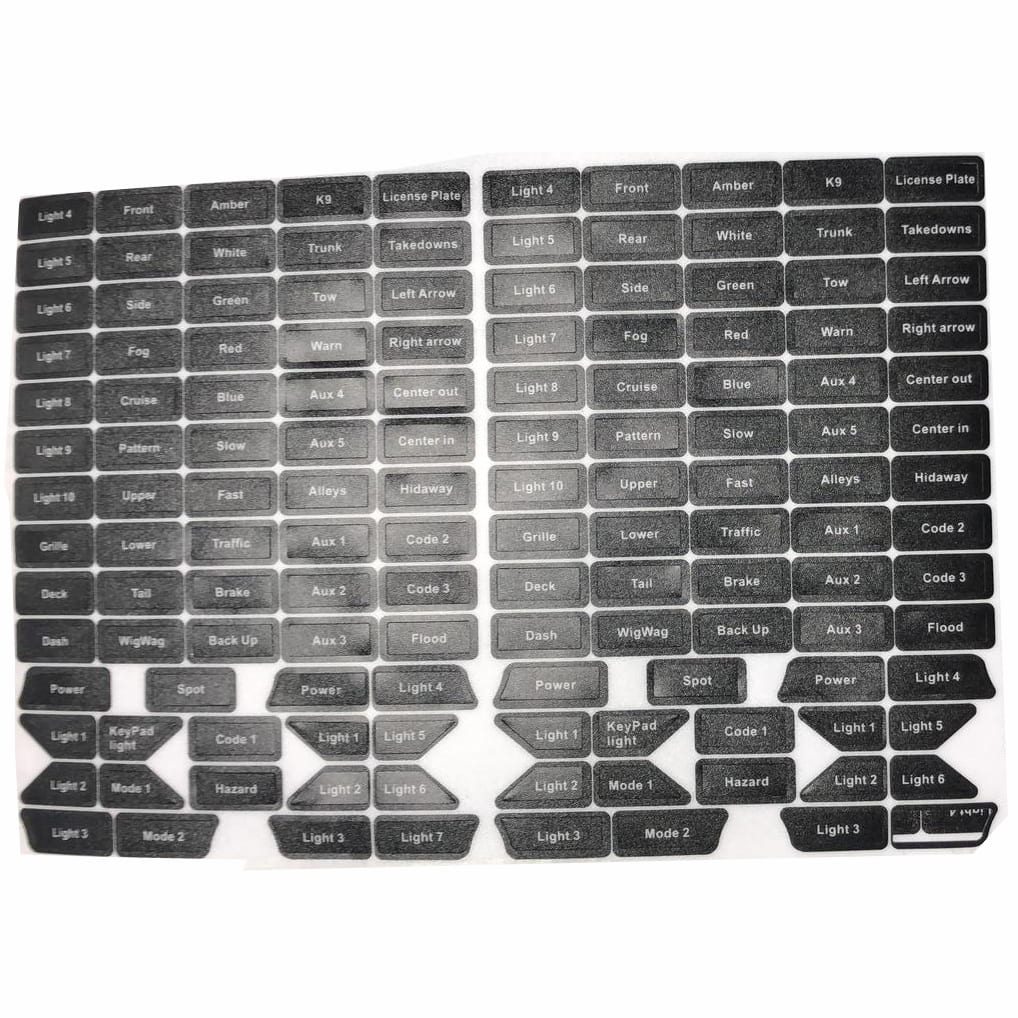
The following parts are included with the Combat Controller



Combat Controller



Combat Controller Snap Wire Connector



Combat Controller Customization Sticker Pad



Combat Controller Mounting Hardware

## Instructions for Wiring and Operation

Installation and Wiring

To ensure proper installation installers are required to have a good understanding of automotive electronic systems and procedures for proper installation.

When you are drilling into the vehicle's surfaces, ensure that the area is free of any electrical wires, vehicle upholstery, fuel lines, etc. that could be damaged. All wiring passing through drilled holes should use grommets and silicone sealant to prevent wire or moisture damage when passing through compartment walls.

WARNING! Larger wires and secure or tight connections will ensure longer service life for your product. It is highly recommended that soldered connections have heat shrink used to protect the connection. Special attention should be given to the location and method of splicing wires to make electrical connections to protect these splices from lost power or connection and corrosion.

Insulation displacement connectors are not to be used. To reduce voltage drop, minimize the number of splices in the wires. The current carrying capacity of wires and fuses will be significantly reduced under high ambient temperature (e.g. under the hood).

All wires should be in accordance with the minimum wire size and other recommendations made by the manufacturer and be protected from hot surfaces and moving parts. Grommets, cable ties, looms, and other installation hardware should be used to anchor and protect all wiring. Fuses should be properly sized and located as close to the power take off points as possible to protect the wiring and device. To protect against short circuits, a fuse is included by LED Equipped for all products. Do NOT use a fuse with a higher amp rating than the initial fuse included.

After removing your product from the packaging, ensure that you conduct a full bench test of your product prior to installation on your vehicle. To do this, connect your product 12v + (positive) and 12v – (negative) to an appropriate 12v + (positive) power source and 12v- (negative ground). Installers will typically want to use the 12v – (negative) battery terminal over a frame-ground installation for proper operation. Many LED Equipped vehicle light bars come preinstalled with a 12v auxiliary power connector (cigarette plug) for ease of installation and to allow for simplicity of bench testing of your product. Once connected to an appropriate 12v power source (and GND), test each functional element of your product to ensure proper operation. If it is identified that any function is not working properly as a result of your bench test, please contact LED Equipped for further diagnosis and resolution. DO NOT in any circumstance attempt to open the product light housing to investigate and resolve the issue on your own. Doing so will result in voiding of the factory warranty. Once a successful bench test has been completed, and you have ensured the proper operation of your product, please follow the instructions below to install your product in your vehicle.

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# Installing the Combat Controller

The Combat Controller is the perfect solution for installers who want an advanced emergency warning light system that can be easily controlled from one single source. The Combat Controller has been designed with eighteen (18) lighted soft-touch buttons that can be individually assigned to control each of your individually installed accessories. The Combat Controller has been engineered with a five (5) amp capacity per switch, and will allow you to easily control your full installation of grille lights, work lights, LED light bars, traffic advisory light bars, and/or strobe lights.

The Combat Controller’s compact design and high build quality and durability make it the ideal addition to your unique installation. The Combat Controller includes embedded LED back lighting to allow you to quickly and easily see the functions that you need to execute your job functions in any operating environment. Included with your Combat Controller is our Combat Controller Customization Sticker Pad that provides you with the ability to identify and individually define the function of each button on your Combat Controller based on your specific needs.

Engineered into the design of the Combat Controller are two (2) preassigned “memory” buttons that allow you to quickly and easily activate those accessories that are most needed for the job at hand. Also engineered into the design of the Combat Controller is one (1) momentary button that can be used to apply a momentary 12v + (positive) power source to whatever accessory function you need.

The Combat Controller facilitates the ease of accessibility that you need to control each of your emergency vehicle warning accessories into one compact, easy to use, accessory and lighting control solution.

# Wiring the Combat Controller

# The Combat Controller provides an easy to configure solution for hard wiring your emergency vehicle warning lights and accessories. Included with your Combat Controller is a quick snap wiring harness that, once wired to your warning lights and accessories, attaches easily to the Combat Controller.

# Wiring the Combat Controller is as easy as connecting each of your 12v warning lights and accessories to the desired Combat Controller 12v + (positive) output, using the wiring specifications included in Figure 1 below. Please note that the 12v + (Positive/Red Wires) and 12v – (Negative/Black Wires) wiring connections must be made to an appropriate 12v power source and ground in order for your Combat Controller to function properly.

# Proper consideration should be given when planning your wiring to the memory functions that are built into the Combat Controller. Memory Button One (1) (Button Seventeen (17) on the Combat Controller in Figure 2 below) operates the group of buttons two (2) through eight (8). Memory Button Two (2) (Button Eighteen (18) on the Combat Controller in Figure 2 below) operates the group of buttons nine (9) through fifteen (15). When planning your installation, grouping of emergency warning lights and accessories according to desired operation using the memory buttons should be considered.

# All wiring connections should be secured using appropriate automotive connectors or through the use of soldered connections and all wiring utilized should be appropriately sized for the application. All connections should be protected by using heat shrink wire wrap in order to protect the connection. Special attention should be given to the location and method of splicing wires to make electrical connections to protect these splices from lost power or connection and corrosion.

# Figure 1

# 16–Pin Snap Wiring Connector

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16

12

13

11

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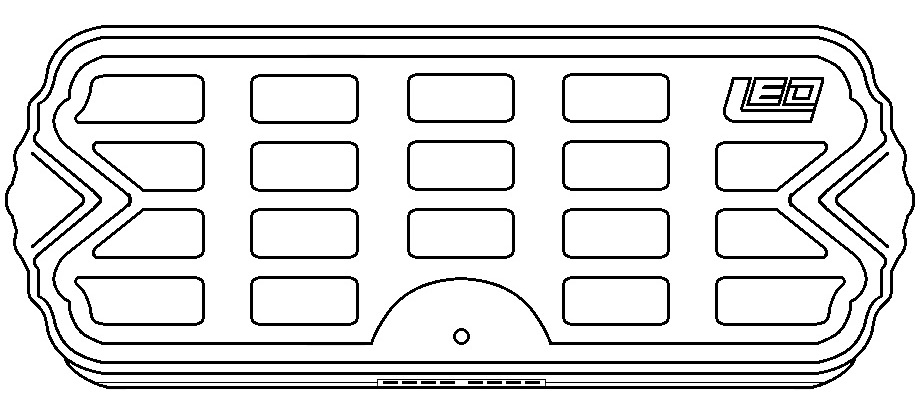
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| Combat Controller Wiring Specification | | | |
| --- | --- | --- | --- |
| Wire Color | Pin Location/Function | Wire Color | Pin Location/Function |
| Black | 112v - (Negative) | Red | 912v + (Positive) |
| Salmon | 2Controller Button 12 | Brown | 10Controller Button 7 |
| Orange | 3Controller Button 9 | Green | 11Controller Button 4 |
| Yellow | 4Controller Button 2 | Purple | 12Controller Button 5 |
| Light Blue | 5Controller Button 11 | White | 13Controller Button 14 |
| Dark Grey | 6Controller Button 6 | Dark Blue | 14Controller Button 10 |
| Teal | 7Controller Button 15 | Yellow w/ Green Stripe | 15Controller Button 13 |
| Black w/ White Stripe | 8Controller Button 8 | Light Grey | 16Controller Button 3 |

Figure 2 below provides a similar pictorial representation of the button layout of your Combat Controller as well as the wiring pin assignment for ease of installation.

**Figure 2**

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**18**

**17**

**16**

**15**

**14**

**13**

**12**

**11**

**10**

**9**

**8**

**7**

**6**

**5**

**4**

**1**

**3**

**2**

| Combat Controller Pin Wiring Assignment | | | |
| --- | --- | --- | --- |
| Controller Button | Pin Location/Function | Controller Button | Pin Location/Function |
| 1 | Controller Power On/Off | 10 | Pin 14 |
| 2 | Pin 4Momentary Button | 11 | Pin 5 |
| 3 | Pin 16 | 12 | Pin 2 |
| 4 | Pin 11 | 13 | Pin 15 |
| 5 | Pin 12 | 14 | Pin 13 |
| 6 | Pin 6 | 15 | Pin 7 |
| 7 | Pin 10 | 16 | Controller Back Light |
| 8 | Pin 8 | 17 | Memory Button 1 |
| 9 | Pin 3 | 18 | Memory Button 2 |

**Mounting the Combat Controller**

Included with the Combat Controller are two screws and a mounting bracket that attaches directly to the back of the Combat Controller for quickly and easily mounting your controller in your desired location on your vehicle. Using the two included mounting screws, secure the mounting bracket to your vehicle and simply slide the Combat Controller into the mounting bracket for a secure fit for your Combat Controller.

**Operating the Combat Controller**

Once wired, depressing Button 1 will power on the Combat Controller. With the Combat Controller powered on, operating the Combat Controller, is as simple as depressing the desired controller button once to activate the selected emergency vehicle warning lights or accessories that you have installed. When depressing the desired controller button, the backlight of the activated button will illuminate blue to indicate that the button is active. Depressing the desired controller button a second time will turn off the selected emergency vehicle warning lights or accessories.

Depressing Button 16 on the Combat Controller will enable the backlight on the controller to become active illuminating all of the Combat Controller buttons with a green glow. This allows for quick and easy identification of those emergency warning lights and accessories that you need to perform your job function, regardless of the operating environment. In addition, Button 17 and Button 18 on your Combat Controller have been engineered to operate memory buttons, which will each activate approximately one half of the emergency warning light buttons on your Combat Controller. When depressing Button 17, Buttons 2 - 8 will become activated. When depressing Button 18, Buttons 9 - 15 will become activated. Please note that should you not chose to utilize the memory functions, leaving Button 17 and Button 18 active will allow for you to select those only those individual emergency warning lights and accessories that you desire to activate manually.



At LEDEQUIPPED, we know that you need affordable lighting for your police, EMS, fire, construction, or towing vehicles and that safety and reliability are important to you. That is why all of our LED products feature powerful, up to date Generation LED lighting, perfect for your police, fire, construction, or EMS vehicle. LED Equipped focuses on a mission to carry out business ethically and with integrity, provide powerful products of the highest quality, maintain excellent and affordable prices, and to establish an unparalleled costumer service relationship beginning with establishing trust with our customers. As a provider of emergency vehicle lighting, we value the honesty, professionalism, and expertise present within our customer base.

For any questions regarding our products, contact us by calling us at +1 800-846-3940 or email us at sales@ledequipped.com.