Installation and Operation Instructions
SuperVisor Flex™ Series
Interior Lighting System

IMPORTANT! Read all instructions before installing and using. Installer: This manual must be delivered to the end user.

WARNING!
Failure to install or use this product according to manufacturer's recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!

Do not install and/or operate this safety product unless you have read and understood the safety information contained in this manual.

1. **Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of emergency personnel and the public.**
2. **Emergency warning devices often require high electrical voltages and/or currents. Exercise caution when working with live electrical connections.**
3. **This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.**
4. **Proper placement and installation is vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that they can operate the system without losing eye contact with the roadway.**
5. **It is the responsibility of the vehicle operator to ensure daily that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.**
6. **The use of this or any other warning device does not ensure all drivers can or will observe or react to an emergency warning signal. Never take the right-of-way for granted. It is the vehicle operator's responsibility to be sure they can proceed safely before entering an intersection, drive against traffic, respond at a high rate of speed, or walk on or around traffic lanes.**
7. **This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding emergency warning devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.**

Specifications:

Size:	Full Unit	55.00"X1.25"X5.50"
		*Including 18" Long Center Cable
	Pass Only Unit	18.75"X1.25"X5.50"
Weight:	Full Unit	7.5 lbs
	Pass Only Unit	4.0 lbs
Input Voltage:		12VDC Nominal
Input Current:	Startup Current	0.007 Amps

Max Current:

(8) Light Hd (4) Multi/Single Ends & (4) Single Color Tk Dn's or IF's Full Version	11.30 Amps
(6) Light Hd Multi or Single Color Full Version	9.20 Amps
(4) Light Hd (2) Multi/Single Ends & (2) Single Color Tk Dn's or IF's Pass Only Version	5.70 Amps
(3) Light Hd Multi or Single Color Pass Only Version	4.60 Amps

Unpacking and Pre-installation:

Carefully remove the Unit and place it on a flat surface, taking care not to scratch the lenses or damage the cable coming out of the Housing. Examine the unit for transit damage, broken optics, LED's, etc. Report any damage to the carrier and keep the shipping carton. Standard light bars are built to operate on 12 VDC negative ground vehicles. If you have an electrical system other than 12 VDC negative ground, and have not ordered a specially wired light bar, contact the factory for instructions.
Test the unit before installation. To test, touch the black wire to the ground and the other wires to +12 VDC, in accordance with the instructions attached to the cable (an automotive battery is preferable for this test). A battery charger may be used, but note that some electronic options may not operate normally when powered by a battery charger. If problems occur at this point, contact the factory!
Note: Before beginning the installation process, be absolutely certain that the Light Bar functions as desired.

Wiring Instructions:

Route the Unit's cable as desired and plug the Unit's Driver Side Center Cable Connector into the Passenger Side Connector.
Note: It is advisable to leave an extra loop of cable when installing the light bar to allow for future changes or reinstallations.

Single Color Versions: For wiring the Single Color Versions of the SuperVisor Flex, connect the black lead to a solid frame ground, preferably the (-) or ground side of the battery, & connect the remaining wires as shown in the Wiring Diagrams Labeled "Single Color Version Wiring Diagrams" to the +12V terminal of the battery.

Multi Color Versions: For wiring the Multi Color SuperVisor Flex, see the Wiring Diagram Labeled "Full 18 LED Multi Color Version Wiring Diagrams" & see the Multi Color SuperVisor CC Controller Wiring Diagram.

WARNING! Do not apply 12 volts to the wire colors that are not shown in the diagram for the version of the unit you have purchased as this could potentially cause a direct short circuit.

LED Fusing Considerations - Single Color Independant Flashing Versions
Although the average current draw per module is very low, due to the type of circuit used to power each module, the instantaneous peak current to a module can be significantly higher during low voltage conditions. To avoid prematurely blowing ATO style fuses or tripping breakers it is recommended the following rule-of-thumb be used to size fuses or breakers. This is especially important in lightbars with many LED modules running off a single fused source.
Minimum fuse size calculation: (See Wiring Diagrams)
For LED 12 volt electrical current
1.5 X (number of 9LED modules being fused) = Total Electrical Current at 12 VDC Nominal or
0.5 X (number of 3LED modules being fused) = Total Electrical Current at 12 VDC Nominal
LED MODULES
Operating Specifications - directional module: Operating Voltage: 10-16 VDC, Reverse Polarity Protection
Current Draw : Flashing Module
Red/Amber - .25A avg @ 12 VDC Nominal
Blue/White - .40A avg @ 12 VDC Nominal

Steady Burn Module
Red/Amber - .50A avg @ 12 VDC Nominal
Blue/White - .80A avg @ 12 VDC Nominal
LED Fusing Considerations - Multi Color CC Versions
NOTE: The Components of the Multi Color SuperVisor Flex System are circuit protected by the Multi Color SuperVisor Flex System CC Board so the individual wires in the System do not require fusing.

WARNING! Do not apply 12 volts directly to the supervisor flex wires after they are connected to the Supervisor Multi Color CC Box. The Multi Color Supervisor Flex CC Board or the light heads could be damaged by applying 12 volts to the CC outputs.

Notes:
1. **Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors).**
2. **Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.**
3. **Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.**
4. **Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.**
5. **Ground termination should only be made to substantial chassis components, preferably directly to the vehicle battery.**
6. **Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.**

Wiring Instructions:

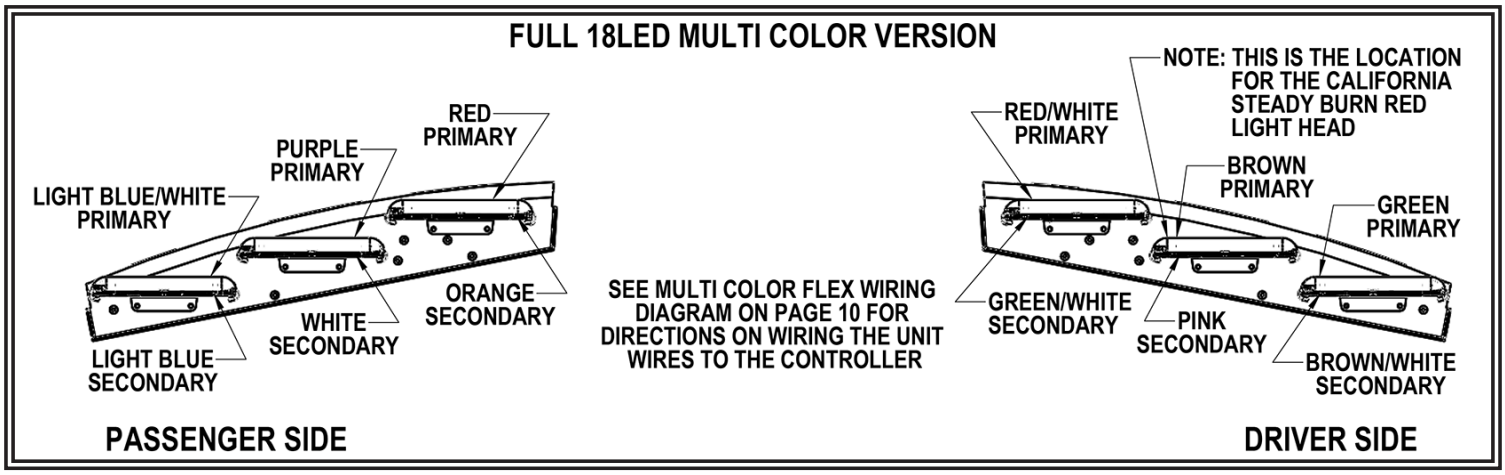


Figure 1

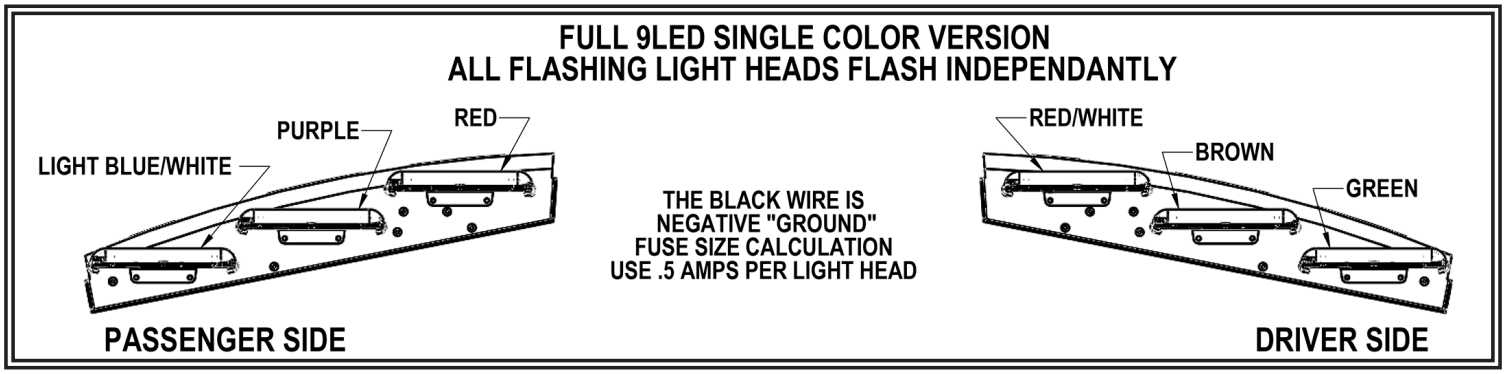


Figure 2

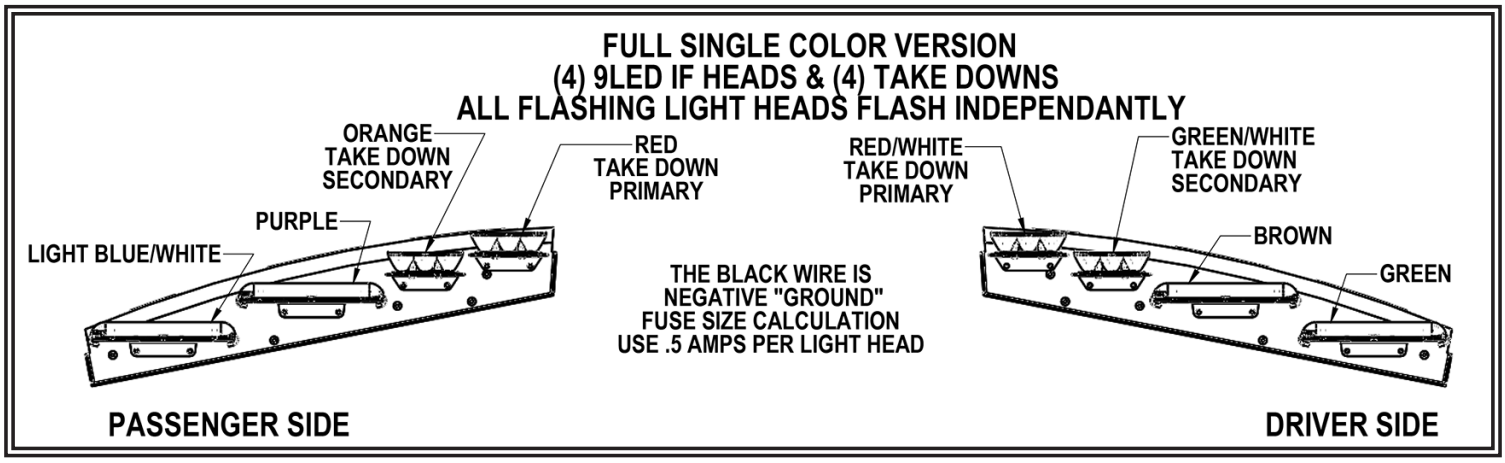


Figure 3

Wiring Instructions:

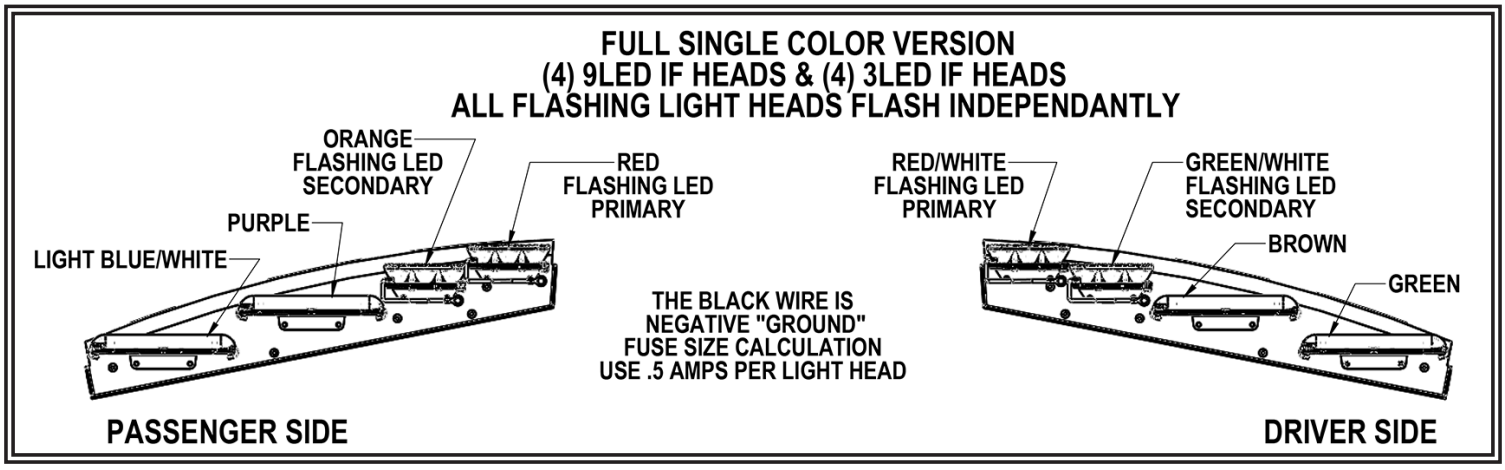


Figure 4

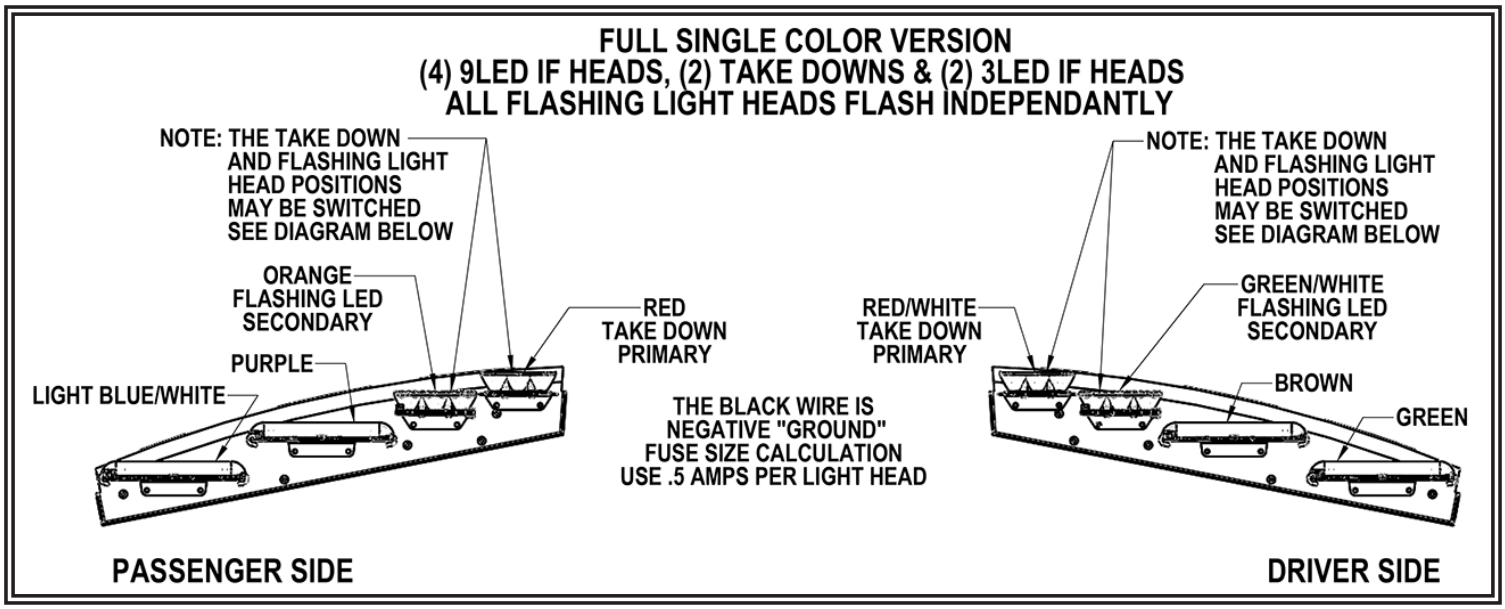


Figure 5

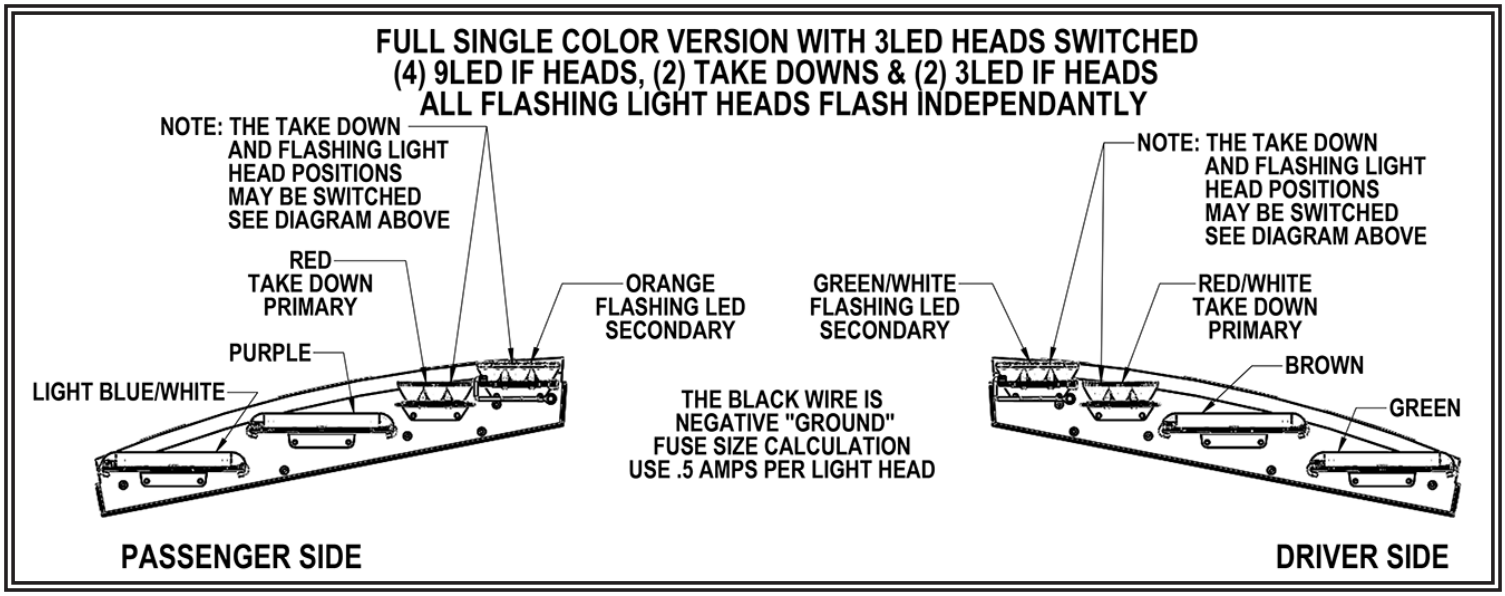


Figure 6

Wiring Instructions:

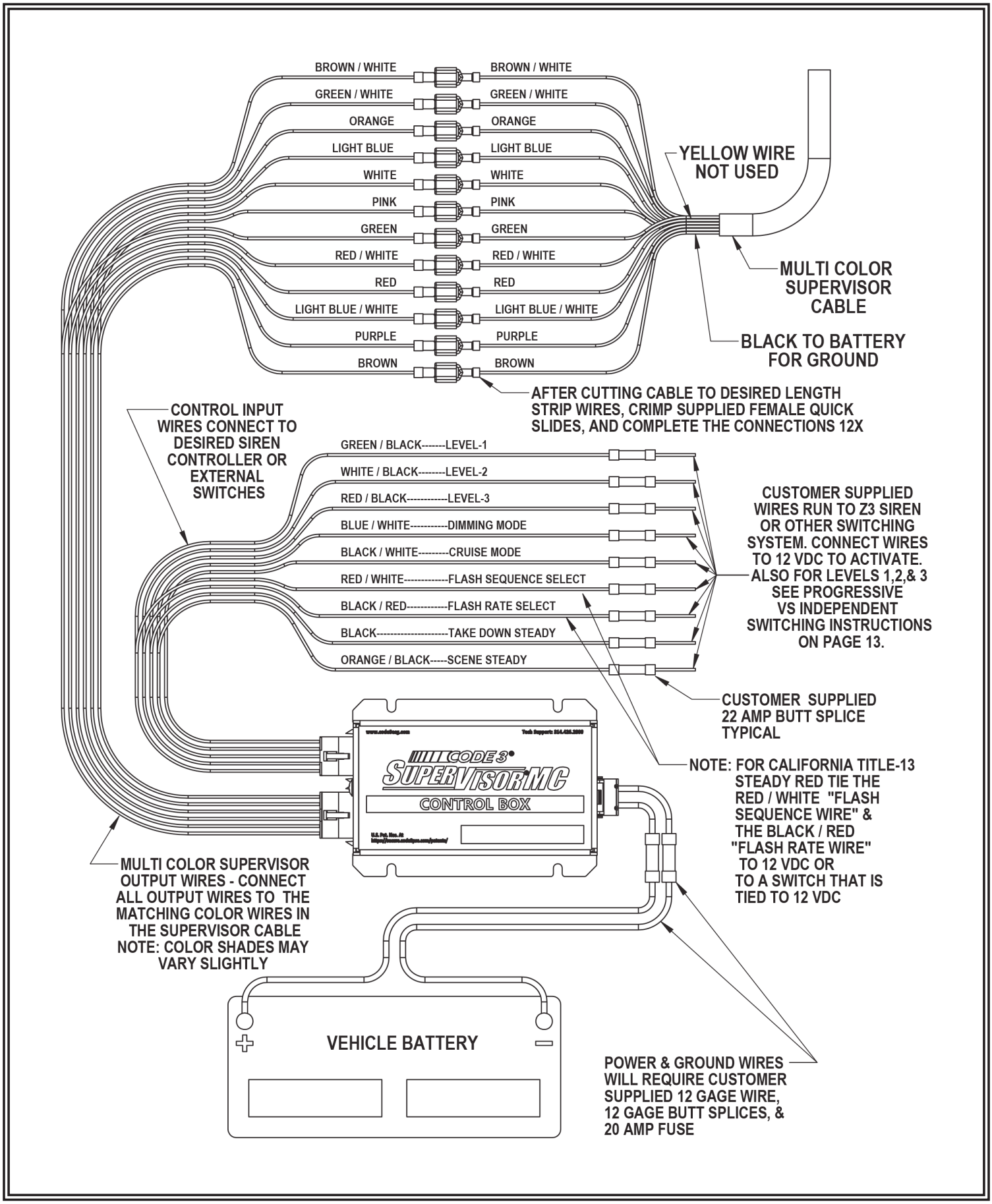


Figure 7

Switching:

Progressive vs. Independent Switching
In a 3-level progressive switch application there are only 3 patterns that typically need to be set.
Using the defaults in the Switching Table below, the patterns displayed would be as follows.

Pattern 1: As the switch is moved from the off position (with the progressive levels notated in parentheses). The defaults listed in this manual are for the progressive 3 levels.

Pattern 2: In an application with 2- or 3- independent switches there are “combinations” of wire colors that can have unique flash patterns defined, thus allowing the switches to simulate a progressive style application. It is intuitive to think that only three unique flash patterns can be displayed in a system with 3 independent switches; however, seven patterns are available. In the Switching Table below, independent switches can mimic a 3-level progressive switch or create a total of seven different lighting levels.
Note: Remember that the switches that are not progressive, operate completely independent of each other.

Pattern 3: There are seven possible 3-Level modes (see Switching Table below). The factory default is different for each of the 3 -Level modes. The standard progressive switch will use the Level-1, Level-2 and Level-3 modes. The defaults for Level-1, Level-2 (L1 + L2) and Level-3 (L1 + L2 + L3) are identified below. When using individual non-progressive switches, make sure to select patterns for all switch combinations that will be utilized.

Switching Table: 3-Level Modes of Operation	
Mode Number	**Wires Activated**
L1	GRN/BLK (LEVEL-1)
L2	WHT/BLK
L1 + L2	GRN/BLK & WHT/BLK (LEVEL-2)
L3	RED/BLK
L1 + L3	GRN/BLK & RED/BLK
L2 + L3	WHT/BLK & WHT/BLK
L1 + L2 + L3	GRN/BLK, WHT/BLK, & RED/BLK (LEVEL 3)

Flash Pattern Instructions: SUPERVISOR FLEX Multi Color Units

Choose one of the levels to set by firmly connecting it to +12V. See Page 11 for Control Input Wires and see page 14 for available Flash Rates and Sequences.

Incrementing Sequence (or Rate):
Hold the Sequence (or Rate) Select wire to +12V to increment to the next sequence (or rate) in the list for the chosen level. The Select wire can be removed from +12V when the lights turn on steady. (Do not hold longer than a second. Only a tap of the wire to +12V is necessary)

Decrementing Sequence (or Rate):
Hold the Sequence (or Rate) Select wire to +12V for 3 seconds. The Select wire can be removed from the +12V when the lights turn on steady and then off steady. This will decrement to the previous Sequence (or Rate) in the list for the chosen level. (Do not allow the lights to turn on a second time.)

Default Reset Sequence (or Rate):
Hold the Sequence (or Rate) Select wire to +12V for 5 seconds. The Select wire can be removed from the +12V when the lights turn on steady, then off steady, and then back on steady a second time. This will reset to the default Sequence (or Rate) in the list for the chosen level.

WARNING! This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.

Flash Pattern Instructions: SUPERVISOR FLEX Multi Color Units

INSTALLER NOTE: FLASH RATE + FLASH SEQUENCE = FLASH PATTERN

Lighthead Flash Sequences - Multi Color

LEFT / RIGHT (DEFAULT):	PRIMARY & SECONDARY PRIMARY ONLY - **LEVEL - 1 DEFAULT** SECONDARY ONLY PRIMARY W / SECONDARY POPS - **LEVEL - 3 DEFAULT** PRIMARY W / SECONDARY RANDOM
EVEN / ODD:	PRIMARY & SECONDARY PRIMARY ONLY - **LEVEL - 2 DEFAULT** SECONDARY ONLY PRIMARY W / SECONDARY POPS PRIMARY W / SECONDARY RANDOM
IN / OUT	PRIMARY & SECONDARY PRIMARY ONLY SECONDARY ONLY PRIMARY W / SECONDARY POPS PRIMARY W / SECONDARY RANDOM
RANDOM:	PRIMARY & SECONDARY PRIMARY ONLY SECONDARY ONLY PRIMARY W / SECONDARY POPS PRIMARY W / SECONDARY RANDOM
CYCLE SEQUENCE RANDOM:	PRIMARY & SECONDARY PRIMARY ONLY SECONDARY ONLY PRIMARY W / SECONDARY POPS PRIMARY W / SECONDARY RANDOM
ALL ON RANDOM:	PRIMARY & SECONDARY
SWEEP LEFT / RIGHT:	PRIMARY & SECONDARY PRIMARY ONLY SECONDARY ONLY PRIMARY W / SECONDARY POPS PRIMARY W / SECONDARY RANDOM
NULL:	ALL LIGHTHEADS OFF

Directional Module Flash Pattern

Cycle Flash-70 - (DEFAULT)	Variable Flash Single
NFPA Quad Flash-80	Cycle Flash-150
Quad Flash-70	Five Flash-150
Steady Burn	Quad Flash-150
Five Flash-70	Triple Flash-150
Triple Flash-70	Double Flash-150
Double Flash-70	Single Flash-150
Single Flash-70	Single Flash-250
Quad Pop Flash-70	Single Flash-375
Triple Pop Flash-70	

Lighthead Flash Sequences - Multi Color

Double Flash-75 **- LEVEL - 2 DEFAULT**

Triple Flash-75

Quad Flash-75

Quint Flash-75

Double Flash-150 **- LEVEL - 3 DEFAULT**

Triple Flash-150 **- LEVEL - 1 DEFAULT**

Quad Flash-150

Quint Flash-150

Triple Pop Flash-150

Quad Pop Flash-150

Single Flash-375

Cycle Rates

Cruise is configurable to any symmetric setting. TD Steady is configurable to any symmetric setting

Cruise	TD Steady	Scene Steady
2 Outer Secondary Steady	2 Inner Secondary	All 6 Secondary
2 Outer Secondary Flicker	2 Middle Secondary	
4 Outer Secondary Steady	2 Outer Secondary	
4 Outer Secondary Flicker	4 Inner/Middle Secondary	
6 Outer Secondary Steady	4 Outer/Middle Secondary	
6 Outer Secondary Flicker	4 Inner/Outer Secondary	

Cruise is lowest priority and will not work when any other feature is enabled. Different combinations of lights can be used as Cruise by tapping the Sequence wire to +12V while **Only the Cruise** is turned on.
TD Steady will work with or without Level 1, 2, or 3 lights engaged. Different combinations of lights can be used as the TD by tapping the Sequence wire to +12V while **Only the TD Steady** is turned on.

Scene Steady overrides all other functions.

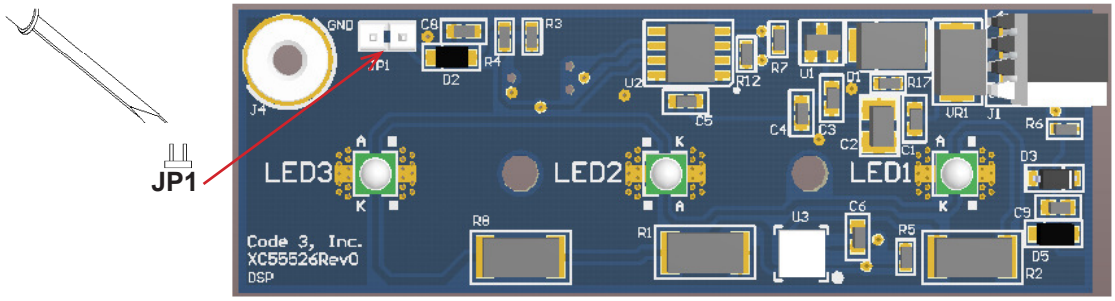
Changing Flash Patterns:

To change the flash patterns on the LED Light Heads, remove the mounting screws that attach the Cover to gain access to the printed circuit boards inside (see the exploded view on Page 10). Momentarily short and release the pattern change prongs as shown below to change patterns. Carefully replace the cover and fasten cover mounting screws.

Note: Be extremely careful to replace the wiring such that you don't pinch a wire when you replace the cover. Test the unit to be sure that it works as intended.

1. Momentarily short and release to change patterns.

2. Hold for 5 seconds to reset the flash pattern to the first pattern.



Torus 3LED PCB Shown Flash Pattern Header for Torus

Troubleshooting:

All SuperVisor Flex Bars are thoroughly tested prior to shipment. However, should you encounter a problem during installation or during the life of the product, follow the guide below for information on repair and troubleshooting. Additional information may be obtained from the factory technical help line at 314-996-2800.

TROUBLESHOOTINNG GUIDE			
Note: LED modules must be replaced as a module. There are no user serviceable parts.			
PROBLEM	**QUESTIONS**	**POSSIBLE CAUSE**	**SOLUTION**
LED module not operating when powered.	N/A	Bad power / ground connection	Fix connection
		Defective module	Replace module

Replacement Parts: SUPERVISOR FLEX

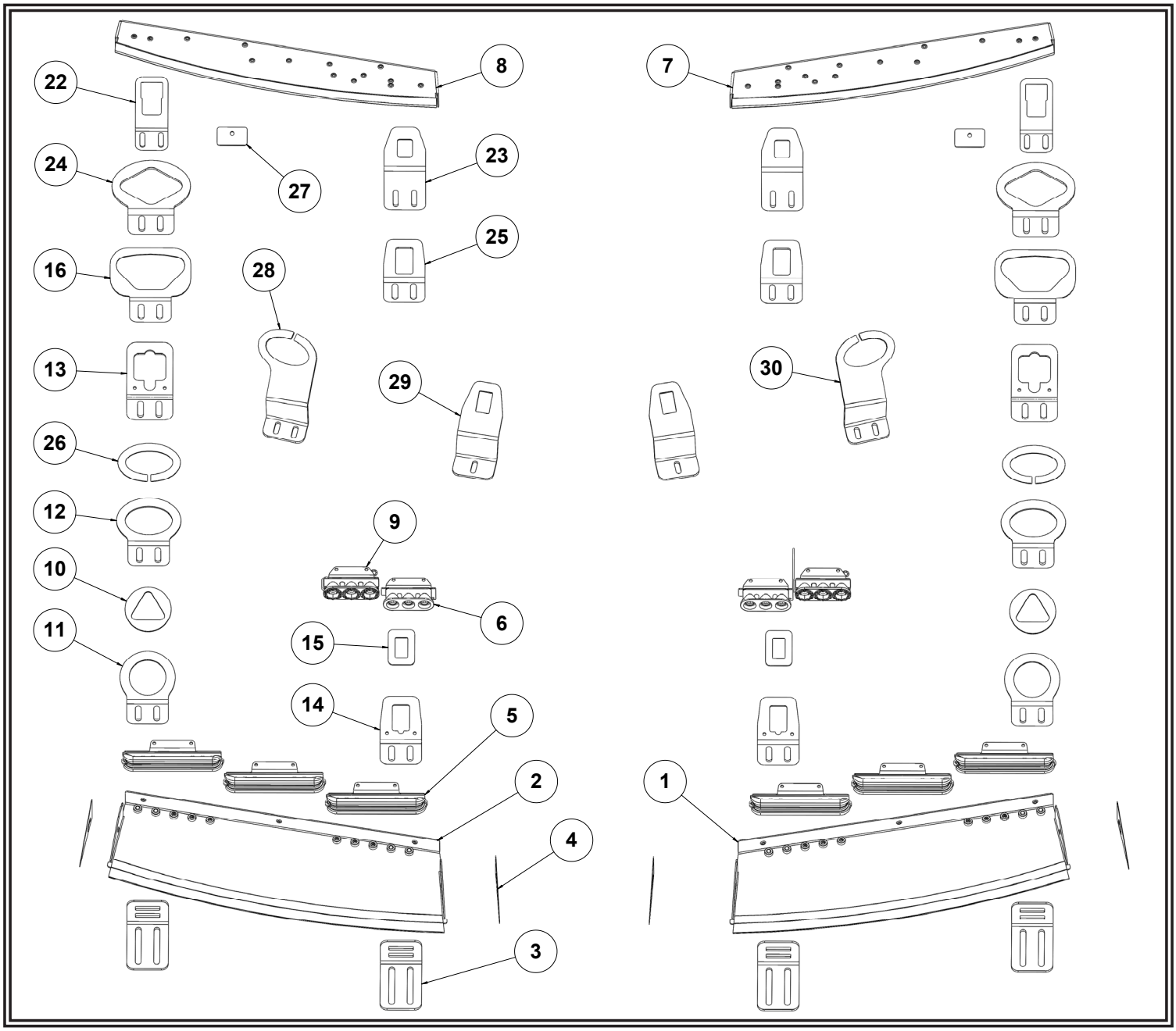


Figure 8

Assembly Parts: SUPERVISOR FLEX

Reference Number	Part Description	Quantity
1	Outer Panel - Driver Side Sedan Version	1
2	Outer Panel -Passenger Side Sedan Version	1
3	Mounting Brkt-Slotted	4
4	Light Blocker-Sedan Version	4
5	18LED Multi or 9 LED Single Color Light Head Module	Up To 6
6	3 LED Torus Take Down	Up To 4
7	Chassis-Driver Side	1
8	Chassis-Passenger Side	1
9	3 LED Torus IF Light Head	Up To 4
10	Triangular Washer-Outer Mounting Bracket	2
11	Outer Mounting Bracket-Round	2
12	Outer Mounting Bracket-Oval	2
13	Outer Mounting Bracket-Rectangular	2
14	Inner Mounting Brackets	2
15	Rectangular Washer-Inner Mounting Bracket	2
16	Outer Mounting Bracket-Tahoe	2
17	1/4”-20 X 1/2” Long Carriage Bolt Black Zinc - NOT SHOWN	8
18	1/4”-20 Acorn Nut Black Zinc - NOT SHOWN	8
19	1/4”-20 X 3/8” Long Phillips Pan Head Screw Black Zinc - NOT SHOWN	8
20	1/4”Internal Tooth Lock Washer - NOT SHOWN	16
21	#8 X 1” Lg Phillips Trss Hd Sheet Metal Sc Black Oxide - NOT SHOWN	10
22	Outer Mounting Bracket - 2015+ Ford F150	2
23	Inner Mounting Bracket - 2015+ Ford F150	2
24	Outer Mounting Bracket - 2012+ Dodge Ram	2
25	Inner Mounting Bracket - 2012+ Dodge Ram	2
26	Mounting Plate-Outer Mounting Bracket - 2012+ Ford Fusion	2
27	Passenger Side Outer Mtg Bracket - Dedicated - 2015+ Dodge Charger	1
28	Inner Mounting Bracket - Dedicated - 2015+ Dodge Charger	2
29	Driver Side Outer Mtg Bracket - Dedicated - 2015+ Dodge Charger	1
30	3/16” Black Cap Plugs (Light Blockers - Threaded Holes) NOT SHOWN	12

Assembly Parts: SUPERVISOR FLEX Multi Color CC Box

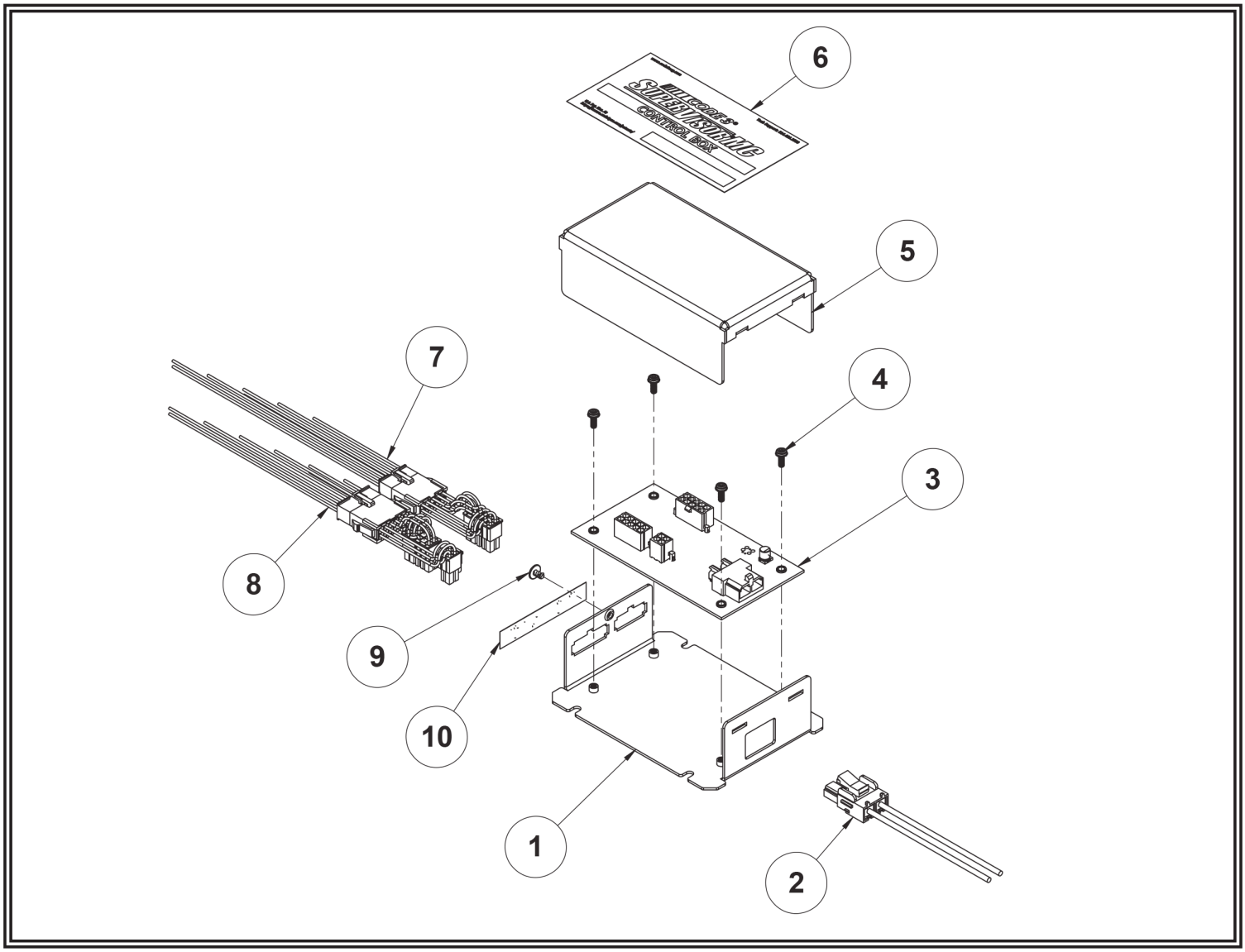


Figure 9

Reference Number	Part Description	Quantity
1	E-Tray - Multi Color SuperVisor	1
2	Power Ground Cable--Mass State Police Slick Top System	1
3	PCB Central Controller-Midrange	1
4	#6-32 X.375 Phil Rd M/S, Stl, Zinc	4
5	Cover-CC Housing-Multi Color SuperVisor	1
6	Label-CC Box-Multi Color SuperVisor	1
7	Input Harness-Multi Color SuperVisor CC Box	1
8	Output Harness-Multi Color SuperVisor CC Box	1
9	#8 X .25 SMS Phillips Truss Head Screw-Black Oxided	1
10	Label-CC Box-Multi Color SuperVisor-INPUT/OUTPUT	Part of Item 6

Warranty:

Manufacturer Limited Warranty Policy:

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Sixty (60) months from the date of purchase.

DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

Exclusion of Other Warranties:

MANUFACTURER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE IMPLIED WARRANTIES FOR MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE ARE HEREBY EXCLUDED AND SHALL NOT APPLY TO THE PRODUCT AND ARE HEREBY DISCLAIMED, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ORAL STATEMENTS OR REPRESENTATIONS ABOUT THE PRODUCT DO NOT CONSTITUTE WARRANTIES.

Remedies and Limitation of Liability:

MANUFACTURER'S SOLE LIABILITY AND BUYER'S EXCLUSIVE REMEDY IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER THEORY AGAINST MANUFACTURER REGARDING THE PRODUCT AND ITS USE SHALL BE, AT MANUFACTURER'S DISCRETION, THE REPLACEMENT OR REPAIR OF THE PRODUCT, OR THE REFUND OF THE PURCHASE PRICE PAID BY BUYER FOR NON-CONFORMING PRODUCT. IN NO EVENT SHALL MANUFACTURER'S LIABILITY ARISING OUT OF THIS LIMITED WARRANTY OR ANY OTHER CLAIM RELATED TO THE MANUFACTURER'S PRODUCTS EXCEED THE AMOUNT PAID FOR THE PRODUCT BY BUYER AT THE TIME OF THE ORIGINAL PURCHASE. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR LOST PROFITS, THE COST OF SUBSTITUTE EQUIPMENT OR LABOR, PROPERTY DAMAGE, OR OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES BASED UPON ANY CLAIM FOR BREACH OF CONTRACT, IMPROPER INSTALLATION, NEGLIGENCE, OR OTHER CLAIM, EVEN IF MANUFACTURER OR A MANUFACTURER'S REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. MANUFACTURER SHALL HAVE NO FURTHER OBLIGATION OR LIABILITY WITH RESPECT TO THE PRODUCT OR ITS SALE, OPERATION AND USE, AND MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES THE ASSUMPTION OF ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCT.

This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.

Product Returns:

If a product must be returned for repair or replacement*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3®, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

*Code 3®, Inc. reserves the right to repair or replace at its discretion. Code 3®, Inc. assumes no responsibility or liability for expenses incurred for the removal and /or reinstallation of products requiring service and/or repair.; nor for the packaging, handling, and shipping: nor for the handling of products returned to sender after the service has been rendered.

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