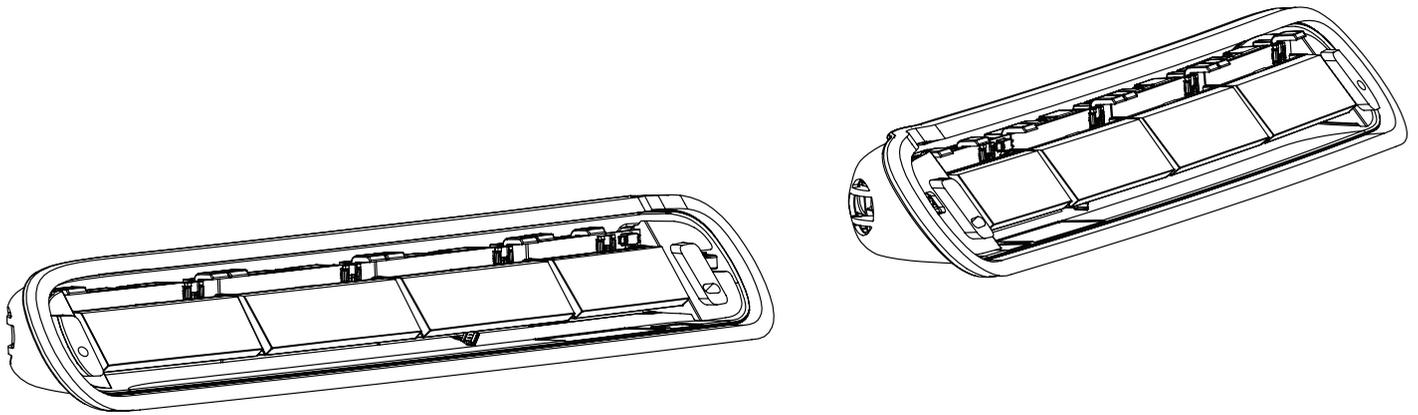


mpower[®]
SILICONE LIGHTING

INSTALLATION INSTRUCTIONS

mpower[®] HORIZON INTERIOR LIGHTBAR



SoundOff
Signal

IMPORTANT NOTICE TO INSTALLER:

- Make sure to read and understand all instructions and warnings before proceeding with the installation of this product. Ensure that the manual and any warning cards are delivered to the end user of this equipment. Proper installation of the lightbar requires the installer to have a thorough knowledge of automotive electronics, systems, and procedures.
- Lightbars provide an essential function of an effective visual warning system. The use of the lightbar does not insure that all drivers can or will abide by or react to an emergency warning signal, especially at high rates of speeds or long distances. The operator of the vehicle must never take the right of way for granted and it is the operator's responsibility to proceed safely.
- The effectiveness of the lightbar is highly dependent on the correct mounting and wiring. The installer must read and follow the manufacturer's installation instructions and warnings in the manual. The vehicle operator should verify daily that the lightbar is securely fastened to the vehicle and properly functioning before operating vehicle.
- The lightbar is intended for use by authorized personnel only. It is the user's responsibility to ensure they understand and operate the emergency warning devices in compliance with the applicable city, state and federal laws and regulations. SoundOff Signal assumes no liability for any loss resulting from the use of this warning device.


WARNING

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

IMPORTANT INFORMATION:

- To view the full Software Revision History click the  in the lower left hand corner of the SoundOff Central Lightbar application.
- Warning devices are strictly regulated and governed by Federal, State and Municipal ordinances. These devices shall be used ONLY on approved vehicles. It is the sole responsibility of the user of these devices to ensure compliance.
- DO NOT install this product or route any wires in the Air Bag Deployment Zone. Refer to your vehicle Owner's Manual for the location of any air bag deployment zones.
- DO NOT connect this device to a strobe power supply. This product is self-contained and does not require an external power supply.


WARNING

- Route wires only in locations that are not subject to potential wear. Make sure to avoid routing wires in the deployment area of your airbag. Refer to your vehicle's owner's manual for airbag deployment zone.
- All customer supplied power wires connecting to the positive (+) or negative (-) battery terminal or local chassis ground (-) must be sized to supply at least 125% of the maximum current and properly fused at the power source with appropriately rated fuse.

NOTICE:

- Installers and users must comply with all applicable federal, state and local laws regarding use and installation of warning devices.
- Improper use or installation may void warranty coverage.
- To review our Limited Warranty Statement & Return Policy for this or any SoundOff Signal product, visit our website at soundoffsignal.com/tech-services/returns/.
- If you have questions regarding this product, contact Technical Services, Monday - Friday, 8 a.m. to 5 p.m. ET at 800-338-7337 (press #4).
- Questions or comments that do not require immediate attention may be emailed to techgroup@soundoffsignal.com.

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CONTENTS	
QTY	COMPONENT
1	mpower® Horizon Lightbar Inner Assembly - Left
1	mpower® Horizon Lightbar Housing Assembly - Left
1	mpower® Horizon Lightbar Inner Assembly - Right
1	mpower® Horizon Lightbar Housing Assembly - Right
1	Vehicle Power Harness
1	Assembly Mounting Kit Hardware
1	Warning Card
1	Installation Instructions

OPTIONAL CONTROL EQUIPMENT		
COMPONENTS	Breakout Box LIN (Standard) Qty.	Breakout Box CAN System Qty.
Universal BOB (LIN)	1	0
Universal BOB (CAN)	0	1
24 Pin Harness	1	1
4 Pin Harness	1	1
5 Pin Harness	0	1

TECHNICAL SPECIFICATIONS		
INPUT VOLTAGE RANGE	9-32 Vdc	
OPERATING TEMPERATURE	-40°C to +65°C (-40°F to +149°F)	
ELECTRICAL PROTECTION	Reverse Polarity, Transient Voltage Over-Voltage, High-Temperature Thermal Fold-back	
WIRING	Power Cable: 15ft, 16AWG Wires, (+) RED, (-) BLACK Data Line: 16AWG GREEN	
STANDBY CURRENT @ 12.8 V	IGNITION ON: 0.100 Amps IGNITION OFF: <0.010 mA	
MAX CURRENT @ 12.8V	ASSEMBLY DRIVERSIDE: 5.1A, 65W PASSENGER SIDE: 5.1A, 65W	MODULES 8 LED SINGLE: 1.5A 16 LED DUAL: 1.5A 18 LED TRI: 1.15A 2 LED TD: 0.70A

CERTIFICATION	APPLICABLE COLORS*
SAEJ595	Red, Amber, Blue, White
CALIFORNIA TITLE 13	Red, Amber, Blue
SAEJ845	Red, Amber, Blue, White, Green

*Valid when using compliant patterns, configurations, and ballistic windshield from Custom Glass Solutions.

INTRODUCTION

- **SHINE THROUGH BALLISTIC GLASS:** Here to redefine law enforcement, this lightbar has the ability to shine through ballistic glass, equipping officers with bullet-resistant protection and increased visibility.
- **EXPAND FIELD OF VISION:** This lightbar's sleek and minimal housing adheres to pre-installed windshield buttons available from Custom Glass Solutions, offering officers a space-saving lighting solution for discreet operations.
- **REDUCE FLASHBACK:** This one-of-a-kind, innovative design limits light flashback on the dashboard, ensuring clear sight lines and reducing officer distraction.
- **ULTIMATE FUNCTIONALITY:** This lightbar enhances safety with its warning, alley, arrow and takedown functions. The takedown lights, angled on both the driver and passenger sides, provide precise illumination to the object at hand.

INSTALLATION OPTIONS

Installation

Note: Driver and passenger side installations are identical.

1. Install Horizon's vehicle harness with the "Y" portion of the harness underneath the headliner by the overhead console and the flying leads of the harness near the vehicle's equipment control system.
2. If transparent armor, compatible with Horizon, is already installed on the vehicle, skip Step 3 and proceed to Step 4.
3. Place transparent armor on a windshield stand with the studs facing up.
4. Remove protective lens liners from the Lightbar Inner Assembly that will be installed as shown in **FIG. 3**. Place the Lightbar Inner Assembly over the studs as shown, with the slot towards the center of the windshield, and install 8-32 lock nuts and washer as shown. The nuts should be tightened to 10 inlb. This process is shown in **FIG. 4**.

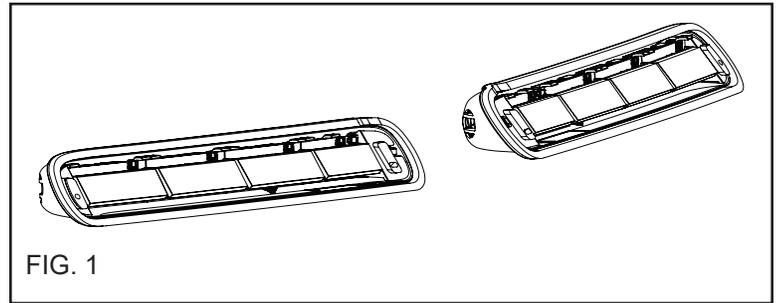


FIG. 1

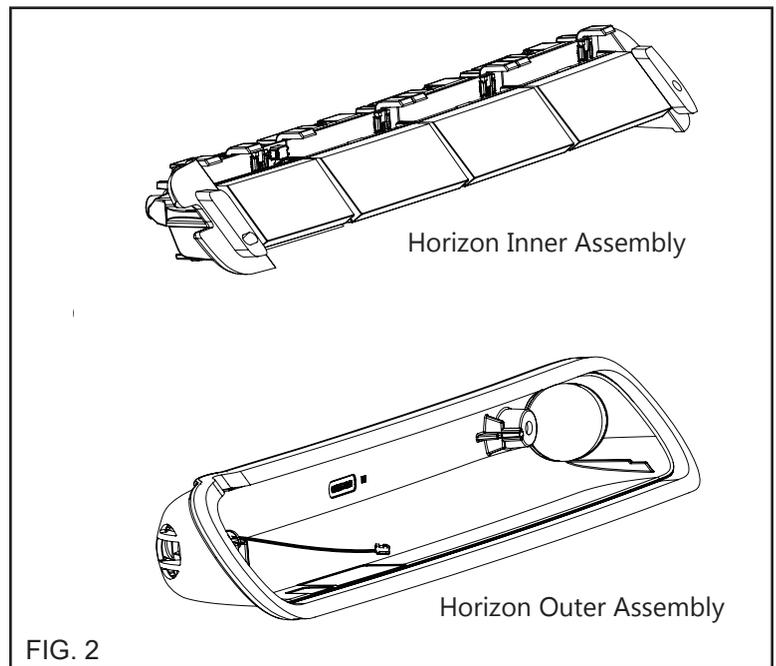


FIG. 2

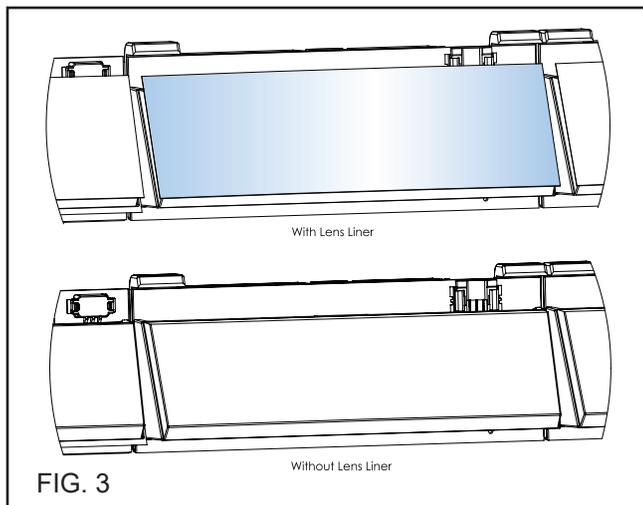


FIG. 3

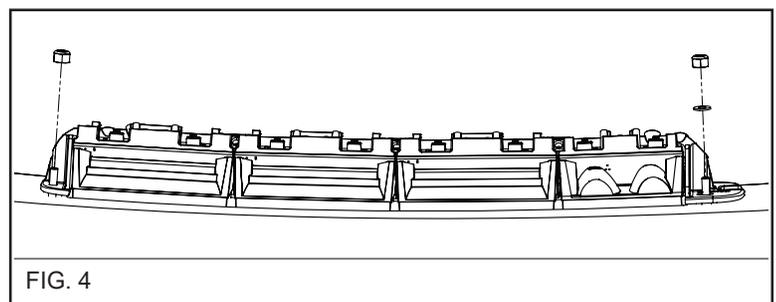


FIG. 4

5. Achieve lens contact between the lenses and the windshield by adjusting assembly modules. **FIG. 5** shows the difference between having and not having lens contact. Pro Tip: Do not rush this step to ensure an overall efficient, successful product installation.

- Loosen the four "lock" screws shown in **FIG. 6** by 3 full turns. The lenses should now be resting on the transparent armor.
- Tighten the bottom row of adjustment screws (8) in the order shown in **FIG. 7**. Stop tightening as soon as increased resistance is felt.
- Tighten the top row of adjustment screws (4) in the order shown in **FIG. 8**. Stop tightening as

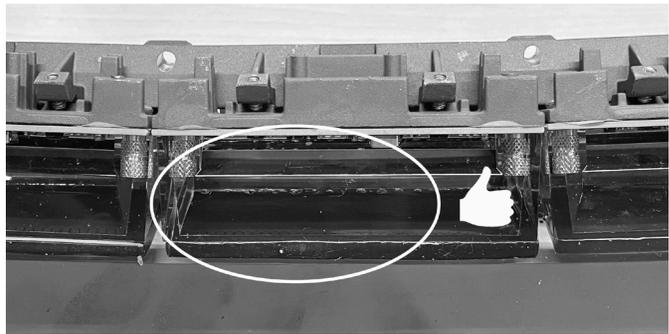
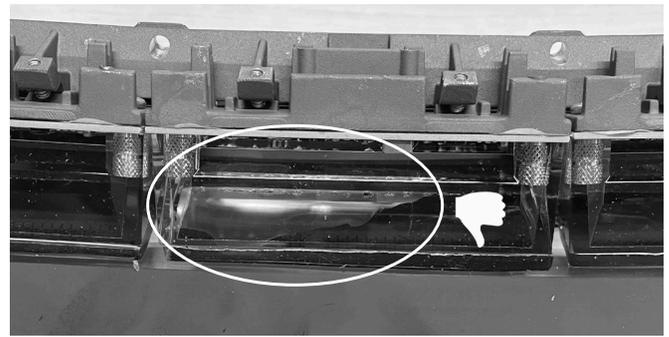


FIG. 5

FIG. 6

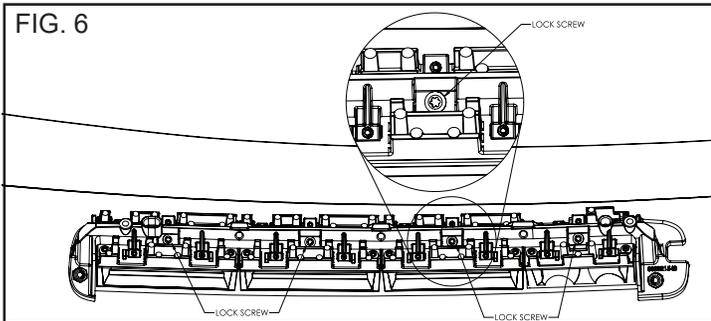


FIG. 7

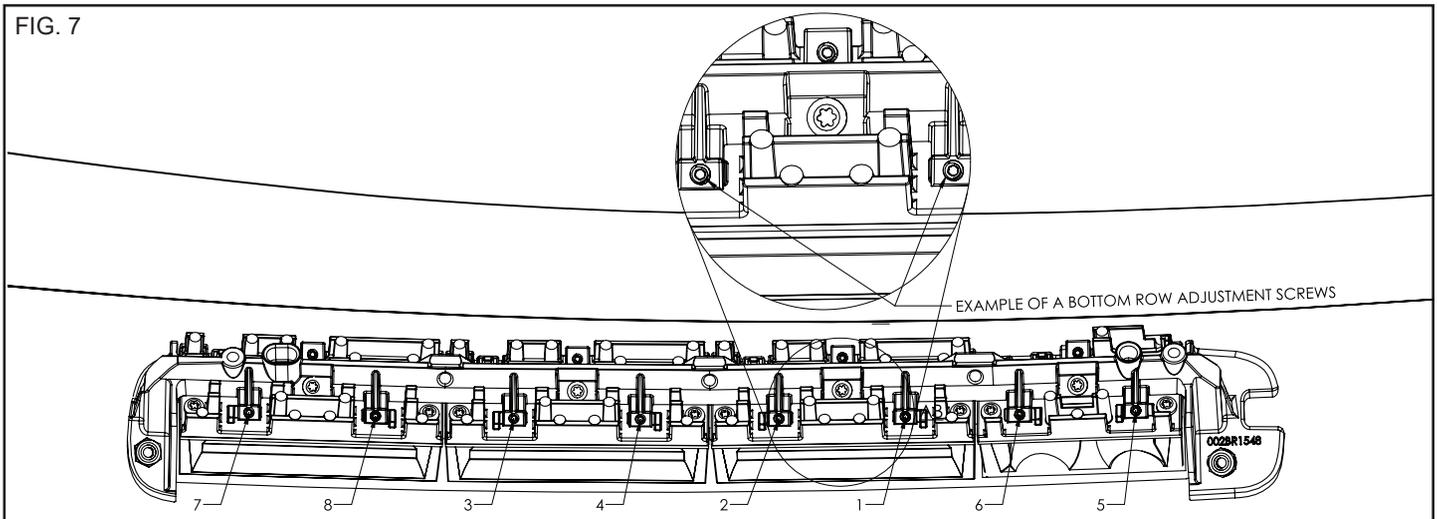
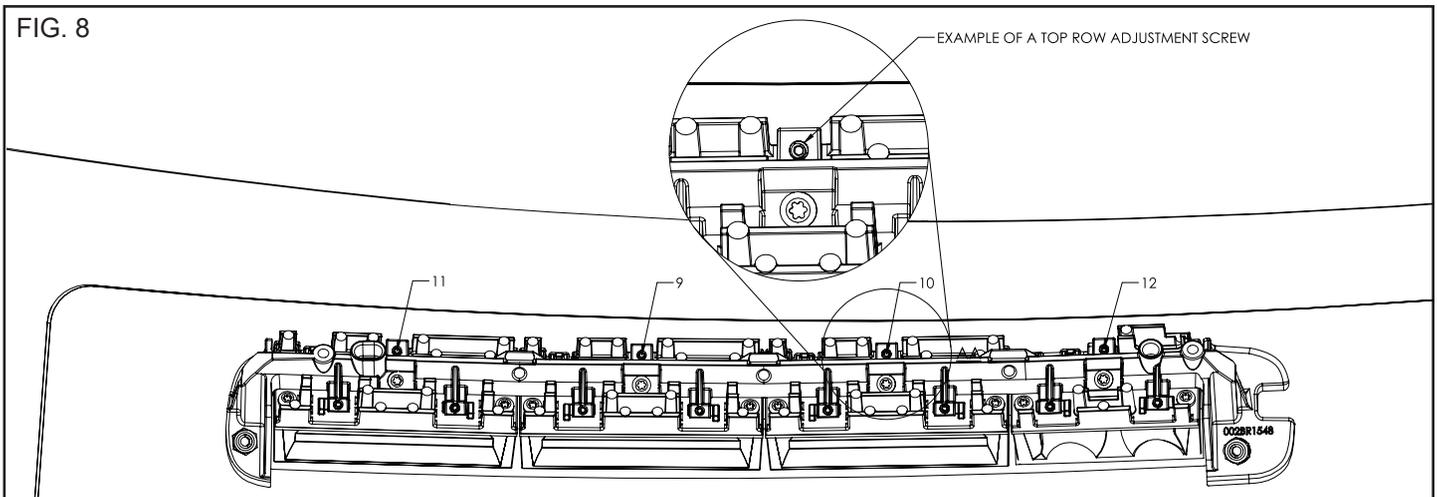


FIG. 8



soon as increased resistance is felt. If the transparent armor is already installed on the vehicle, you may need to

- STOP! And review lens contact by looking at the assembly as shown in **FIG. 9**.
- Work out any bubbles between the lenses and the transparent armor by fine-tuning adjustment screws and possibly loosening the lock screws more.
- Once complete lens contact is achieved, tighten the four "lock" screws indicated in **FIG. 6**.

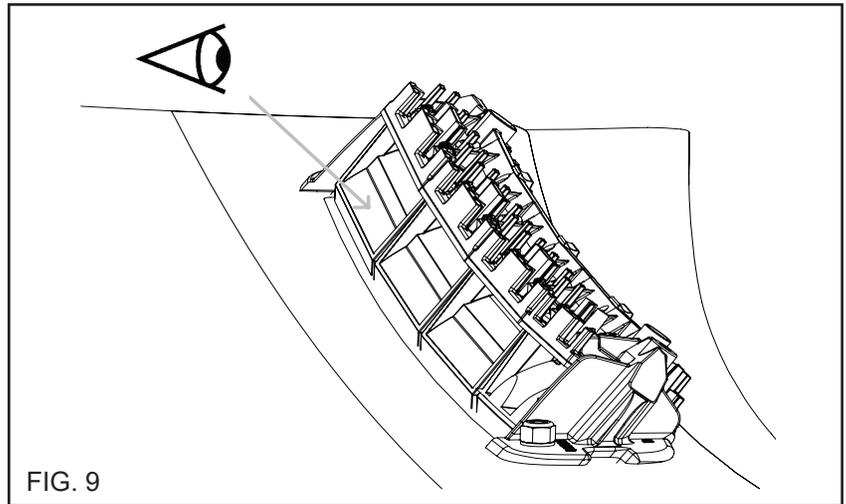


FIG. 9

6. Install the Horizon Outer Assembly by plugging in the active cooling fan in the location shown in **FIG. 10**. Route the power harness as shown in **FIG. 11**. Make sure the harness does not get laid in the area with the "X" in **FIG. 11**. Then install the housing using the included 10-32 hardware as shown in **FIG. 12**. The Lightbar Housing Assembly fasteners should be tightened to 10 in-lb.

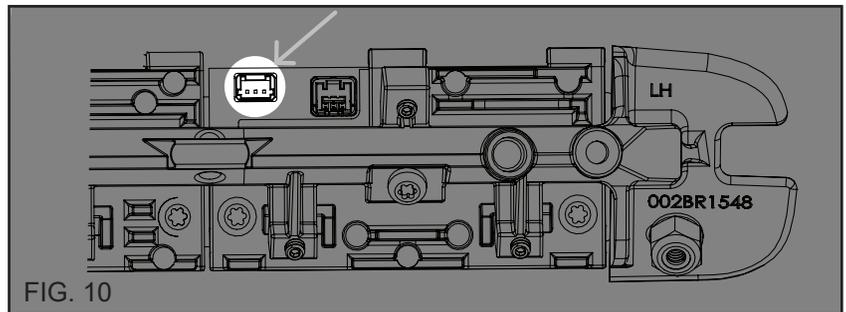


FIG. 10

7. Repeat the same installation process for the Horizon Inner Assembly and Horizon Outer Assembly.

8. If the transparent armor was previously installed in the vehicle, this step can be skipped. Install the transparent armor into the vehicle as specified by the transparent armor manufacturer. When placing the transparent armor in place make sure that the harness for the Horizon assemblies does not get in the way of the transparent armor adhesive.

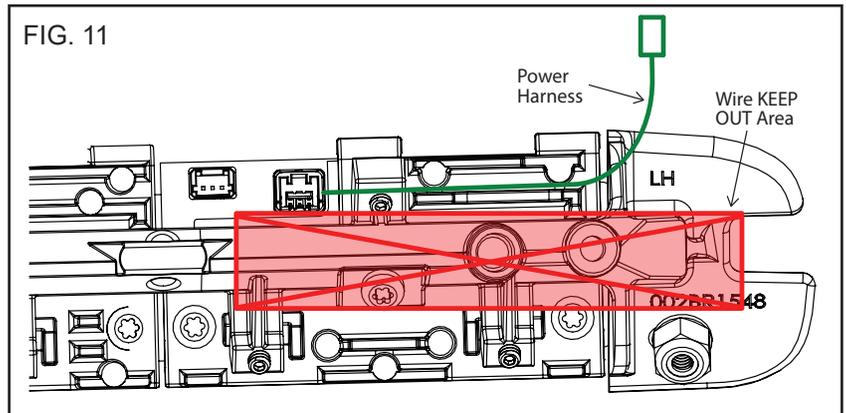


FIG. 11

9. Connect the harnesses that are leaving the two Horizon assemblies to the vehicle harness.

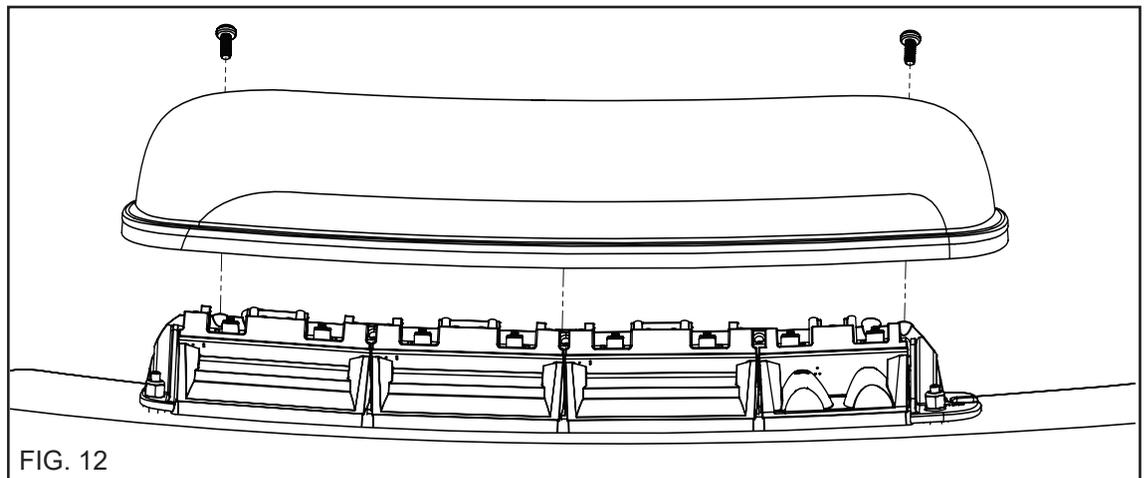


FIG. 12

FUNCTION DEFINITIONS

Mode Select: The MPOWER Interior Lightbar is equipped with 8 selectable pattern configuration modes. The default input wire configuration allows for 6 modes and an additional 2 modes may be configured with the PC Application using any available input wires.

Cruise Mode: Allows the user to program any light group(s) to “Glow” when this feature is activated. The LED intensity is selectable between 1 and 10% duty cycle. For dual / tri color bars, the color for each light group is selectable.

Takedown Mode: Allows the user to program any Light Head Group(s) to turn on steady when this feature is activated to provide steady ON takedown lighting.

Directional Arrow Built-in: The directional controller is built-in with 12 arrow patterns for each of the 3 modes (left arrow, right arrow, and center out arrow) and the color is selectable for dual / tri color bars.

Steady On Mode: Accessible with PC Application only and allows the user to program any light module to turn on steady at 100% duty cycle.

Stop / Tail / Turn Mode: Allows the user to program any Light Head Group(s) to operate in 2 levels of intensity for tail and stop/turn functions.

Low Power Mode: Operates lighting at reduced intensity. Selectable between 20% and 100% duty cycle.

Scene Lighting Mode: Allows the user to program any Light Head Group(s) to turn on steady when this feature is activated to provide additional scene lighting.

Speed Sense Input: The breakout box has a speed sense input that is capable of sensing vehicle speed when connected to the Vehicle Speed Sense (VSS) trigger wire which is supplied in the police upfitter wire harness for some vehicles. This feature is configured using the SoundOff Central Lightbar.

Matrix Input: Matrix inputs are virtual inputs which can be triggered based on combinations of up to four physical wires or siren input signals. This feature also allows the installer to invert the state of inputs, latch momentary inputs and adjust trigger timing through on and off delay timer settings. This feature is configured using the PC Application.

ELECTRICAL INSTALLATION

Lightbar Power Cable:

1. Route lightbar power cable as close to vehicle's power source (Ignition, positive [+]) as possible.
2. Install a maximum of 20 Amp Fuse (customer supplied) to the end of the RED wire of the Lightbar Power Cable.
 - a. Remove the fuse before connecting any wires to the POSITIVE (+) terminal of the battery.
 - b. DO NOT USE CIRCUIT BREAKER OR FUSIBLE LINK.
 - c. Do NOT use any more than 2ft of wire between the power source and the fuse and ensure the wire is protected and secured from being cut into; this is non-fused wire.
3. Connect the BLACK wire to the factory chassis ground right next to the battery or other ground location capable of handling high current.

Lightbar Control (Data) Cable:

1. Connect the GREEN wire from the lightbar to the Solid Green (PIN 3) on the 4 PIN Harness.

Breakout Box Power Wiring:

1. Connect the PINK/WHITE wire (Pin 12 of the 24 pin wire harness) to a switched 12-16V positive (+) power source.
Breakout box needs constant power 12-16V to the RED wire (PIN 4 on 4 pin harness) & Ground to BLACK, (PIN 1 on 4 pin harness) in order to operate.
2. Insert Fuse(s) into Fuse Holder(s).
3. Observe the GREEN Data Link indicator LED on the Breakout Box; the LED will turn ON.
4. The RED indicator LED on the breakout box will be steady ON whenever any of the input wires are active.

Low Power (Standby) Mode (Reduced Standby Current)

If there is no ignition input to the breakout box the lightbar will go into a "standby" mode. The standby mode is a low power mode that is used to extend the life of your battery. The lightbar will awaken from the standby mode when the ignition input is activated on the breakout box.

IMPORTANT

WHEN PASSING CABLES THROUGH FIREWALL OR OTHER SHEET METAL, INSERT GROMMET TO PROTECT THE CABLE!

WARNING

Route wires only in locations that are not subjected to potential wear. Make sure to avoid routing wires in the deployment area of your air bag. Refer to your vehicle's owner's manual for airbag deployment zone.

WARNING

ALL CUSTOMER SUPPLIED POWER WIRES CONNECTING TO THE POSITIVE (+) OR NEGATIVE (-) BATTERY TERMINAL OR LOCAL CHASSIS GROUND (-) MUST BE SIZED TO SUPPLY AT LEAST 125% OF THE MAXIMUM CURRENT AND PROPERLY FUSED AT THE POWER SOURCE WITH APPROPRIATELY RATED FUSE.

ELECTRICAL INSTALLATION (CONT.)

FLASH PATTERNS

*fpm=Flashes per Minute
**fps=Flashes per Second

#	Name	SAE Compliant Timing	California Title 13 Compliant Timing	Color	Sequence	fpm	fps
SC1	Random 1	Yes	No	#1	Variable	-	-
SN2	Random 2	No	No	#1	Variable	-	-
SC3	Quint	Yes	No	#1	Alternating	70	1.2
SC4	Quad 2	Yes	No	#1	Variable	-	-
SC5	Q-Switch	Yes	No	#1	Variable	-	-
SC6	Double	Yes	No	#1	Alternating	115	1.9
SC7	Power Pulse	Yes	No	#1	Alternating	180	3
SC8	Road Runner	Yes	Yes	#1	Alternating	115	1.9
SC9	Slow Runner	Yes	Yes	#1	Alternating	70	1.2
SN10	Warp	No	No	#1	Alternating	350	5.8
SN11	Inter-Cycle	No	No	#1	Alternating	-	-
SN12	Warp 1-2-3	No	No	#1	Alternating	-	-
SC13	E-Single	Yes	No	#1	Alternating	125	2.1
SC14	E-Double	Yes	No	#1	Alternating	125	2.1
SC15	E-Triple	Yes	No	#1	Alternating	125	2.1
SC16	E-Single Sim	Yes	No	#1	Simultaneous	125	2.1
SC17	E-Double Sim	Yes	No	#1	Simultaneous	125	2.1
SN18	Super Slow Runner	No	No	#1	Alternating	55	0.9
SC19	Quint Simultaneous	Yes	No	#1	Simultaneous	70	1.2
SC20	Road Runner Simultaneous	Yes	No	#1	Simultaneous	114	1.9
SC21	Quint Pass/Steady Driver	Yes	No	#1	-	70	1.2
SC22	Road Runner Pass/Steady Driver	Yes	No	#1	-	114	1.9
SC23	Quint 2	Yes	No	#1	-	70	1.2
SN24	Warp 2	No	No	#1	-	350	5.8
SN25	Inter-Cycle 2	No	No	#1	-	-	-
SN26	Flicker Brake	No	No	#1	-	-	-
SN27	Flicker Cruise	No	No	#1	-	-	-
SN28	Steady	No	No	#1	-	-	-
SN29	Manifesto	No	No	#1	-	-	-
SN30	Power Evert	No	No	#1	-	-	-
SN31	Dazzle	No	No	#1	-	-	-
SN32	Quiver	No	No	#1	-	-	-
SN33	Power Sway	No	No	#1	-	-	-
SN34	Evert	No	No	#1	-	-	-
SN35	Alternating Rapid Flash	No	No	#1	-	-	-
SN36	Swift Impact	No	No	#1	-	-	-
SN37	Tango	No	No	#1	-	-	-
SN38	Tremble	No	No	#1	-	-	-

NOTE: Takedown light patterns are limited to pattern #1 – 25

ELECTRICAL INSTALLATION (CONT.)

FLASH PATTERNS CONT.

*fpm=Flashes per Minute

**fps=Flashes per Second

#	Name	SAE Compliant Timing	California Title 13 Compliant Timing	Color	Sequence	fpm	fps
SN39	Shake	No	No	#1	-	-	-
SN40	Evolver	No	No	#1	Simultaneous	-	-
SN41	Corner Sweep	No	No	#1	-	-	-
SN42	Corner Sweep Slow	No	No	#1	-	-	-
SN43	Full/Sweep	No	No	#1	-	-	-
SN44	Full/Sweep Slow	No	No	#1	-	-	-
SN45	Center Sweep	No	No	#1	-	-	-
SN46	Center Sweep Slow	No	No	#1	-	-	-
SN47	Orbit	No	No	#1	-	-	-
SN48	Orbit Slow	No	No	#1	-	-	-
SN49	Double Orbit	No	No	#1	-	-	-
SN50	Slow Double Orbit	No	No	#1	-	-	-
SN51	Retrograde Orbit	No	No	#1	-	-	-
SN52	Slow Retrograde Orbit	No	No	#1	-	-	-
SN53	Progressive Alternate	No	No	#1	-	-	-
SN54	Recurrent	No	No	#1	Simultaneous	-	-
SN55	E-Scroll	No	No	#1	Alternating	-	-
DC1	Random Dual #1	Yes	No	#1/2	Variable	-	-
DN2	Random Dual #2	No	No	#1/2	Variable	-	-
DC3	Quint Dual	Yes	No	#1/2	Alternating	70	1.2
DC4	Quad 2 Dual	Yes	No	#1/2	Variable	-	-
DC5	Q-Switch Dual	Yes	No	#1/2	Variable	-	-
DC6	Double Dual	Yes	No	#1/2	Alternating	115	1.9
DC7	Power Pulse Dual	Yes	No	#1/2	Alternating	180	3
DC8	Road Runner Dual	Yes	Yes	#1/2	Alternating	115	1.9
DC9	Slow Runner Dual	Yes	Yes	#1/2	Alternating	70	1.2
DN10	Warp Dual	No	No	#1/2	Alternating	350	5.8
DN11	Inter-Cycle Dual	No	No	#1/2	Alternating	-	-
DN12	Warp 1-2-3 Dual	No	No	#1/2	Alternating	-	-
DN13	Pattern #1 Dual	No	No	#1/2	Variable	-	-
DN14	Pattern #2 Dual	No	No	#1/2	Variable	-	-
DN15	Impact Dual	No	No	#1/2	Variable	-	-
DN16	Explosion Dual	No	No	#1/2	Variable	-	-
DC17	Quint Simultaneous Dual	Yes	No	#1/2	Simultaneous	70	1.2
DC18	Road Runner Sim. Dual	Yes	No	#1/2	Simultaneous	114	1.9
DC19	Quint 2 Dual	Yes	No	#1/2	-	70	1.2
DN20	Warp 2 Dual	No	No	#1/2	-	350	5.8
DN21	Inter-Cycle 2 Dual	No	No	#1/2	-	-	-

ELECTRICAL INSTALLATION (CONT.)

FLASH PATTERNS

*fpm=Flashes per Minute

**fps=Flashes per Second

#	Name	SAE Compliant Timing	California Title 13 Compliant Timing	Color	Sequence	fpm	fps
DN22	Super Slow Runner Dual	No	No	#1/2	-	-	-
DN23	Flicker Cruise Dual	No	No	#1/2	-	-	-
DN24	Manifesto Dual	No	No	#1/2	-	-	-
DN25	Power Evert Dual	No	No	#1/2	-	-	-
DN26	Dazzle Dual	No	No	#1/2	-	-	-
DN27	Quiver Dual	No	No	#1/2	-	-	-
DN28	Power Sway Dual	No	No	#1/2	-	-	-
DN29	Evert Dual	No	No	#1/2	-	-	-
DN30	Alternating Rapid Flash Dual	No	No	#1/2	-	-	-
DN31	Swift Impact Dual	No	No	#1/2	-	-	-
DN32	Tango Dual	No	No	#1/2	-	-	-
DN33	Tremble Dual	No	No	#1/2	-	-	-
DN34	Shake Dual	No	No	#1/2	-	-	-
DN35	Evolver Dual	No	No	#1/2	Simultaneous	-	-
DN36	Corner Sweep Dual	No	No	#1/2	-	-	-
DN37	Corner Sweep Slow Dual	No	No	#1/2	-	-	-
DN38	Full/Sweep Dual	No	No	#1/2	-	-	-
DN39	Full/Sweep Slow Dual	No	No	#1/2	-	-	-
DN40	Center Sweep Dual	No	No	#1/2	-	-	-
DN41	Center Sweep Slow Dual	No	No	#1/2	-	-	-
DN42	Orbit Dual	No	No	#1/2	-	-	-
DN43	Orbit Slow Dual	No	No	#1/2	-	-	-
DN44	Double Orbit Dual	No	No	#1/2	-	-	-
DN45	Slow Double Orbit Dual	No	No	#1/2	-	-	-
DN46	Retrograde Orbit Dual	No	No	#1/2	-	-	-
DN47	Slow Retrograde Orbit Dual	No	No	#1/2	-	-	-
DN48	Progressive Alternate Dual	No	No	#1/2	-	-	-
DN49	Recurrent Dual		No	#1/2	Simultaneous	-	-
DN50	E-Scroll Dual	No	No	#1/2	Alternating	-	-
TN1	Pattern 1 Tri	No	No	#1/2/3	Alternating	-	-
TN2	Random Tri	No	No	#1/2/3	Alternating	-	-
TC3	Quint Tri	Yes	No	#1/2/3	Alternating	70	1.2
TC4	Quad 2 Tri	Yes	No	#1/2/3	Alternating	-	-
TN5	Pattern 2 Tri	No	No	#1/2/3	-	-	-
TC6	Double Tri	Yes	No	#1/2/3	Alternating	115	1.9
TC7	Power Pulse Tri	Yes	No	#1/2/3	Alternating	180	3
TC8	Road Runner Tri	Yes	Yes	#1/2/3	Alternating	115	1.9
TC9	Slow Runner Tri	Yes	Yes	#1/2/3	Alternating	70	1.2
TN10	Warp Tri	No	No	#1/2/3	Alternating	350	5.8

ELECTRICAL INSTALLATION (CONT.)

FLASH PATTERNS CONT.

*fpm=Flashes per Minute

**fps=Flashes per Second

#	Name	SAE Compliant Timing	California Title 13 Compliant Timing	Color	Sequence	fpm	fps
TN11	Inter-Cycle Tri	No	No	#1/2/3	Alternating	-	-
TN12	Warp 1-2-3 Tri	No	No	#1/2/3	Alternating	-	-
TN13	Super Slow Runner Tri	No	No	#1/2/3	Alternating	55	0.9
TC14	Quint Simultaneous Tri	Yes	No	#1/2/3	Simultaneous	70	1.2
TC15	Road Runner Sim. Tri	Yes	No	#1/2/3	Simultaneous	114	1.9
TC16	Quint 2 Tri	Yes	No	#1/2/3	Alternating	70	1.2
TN17	Warp 2 Tri	No	No	#1/2/3	Alternating	350	5.8
TN18	Inter-Cycle 2 Tri	No	No	#1/2/3	Alternating	-	-
TN19	Pattern 3 Tri	No	No	#1/2/3	-	-	-
TN20	Flicker Cruise Tri	No	No	#1/2/3	-	-	-
TN21	Manifesto Tri	No	No	#1/2/3	-	-	-
TN22	Power Evert Tri	No	No	#1/2/3	-	-	-
TN23	Dazzle Tri	No	No	#1/2/3	-	-	-
TN24	Quiver Tri	No	No	#1/2/3	-	-	-
TN25	Power Sway Tri	No	No	#1/2/3	-	-	-
TN26	Evert Tri	No	No	#1/2/3	-	-	-
TN27	Alternating Rapid Flash Tri	No	No	#1/2/3	-	-	-
TN28	Swift Impact Tri	No	No	#1/2/3	-	-	-
TN29	Tango Tri	No	No	#1/2/3	-	-	-
TN30	Tremble Tri	No	No	#1/2/3	-	-	-
TN31	Shake Tri	No	No	#1/2/3	-	-	-
TN32	Evolver Tri	No	No	#1/2/3	Simultaneous	-	-
TN33	Corner Sweep Tri	No	No	#1/2/3	-	-	-
TN34	Corner Sweep Slow Tri	No	No	#1/2/3	-	-	-
TN35	Full/Sweep Tri	No	No	#1/2/3	-	-	-
TN36	Full/Sweep Slow Tri	No	No	#1/2/3	-	-	-
TN37	Center Sweep Tri	No	No	#1/2/3	-	-	-
TN38	Center Sweep Slow Tri	No	No	#1/2/3	-	-	-
TN39	Orbit Tri	No	No	#1/2/3	-	-	-
TN40	Orbit Slow Tri	No	No	#1/2/3	-	-	-
TN41	Double Orbit Tri	No	No	#1/2/3	-	-	-
TN42	Double Orbit Slow Tri	No	No	#1/2/3	-	-	-
TN43	Retrograde Orbit Tri	No	No	#1/2/3	-	-	-
TN44	Retrograde Orbit Slow Tri	No	No	#1/2/3	-	-	-
TN45	Progressive Alternate Tri	No	No	#1/2/3	-	-	-
TN46	Recurrent Tri	No	No	#1/2/3	Simultaneous	-	-
TN47	E-Scroll Tri	No	No	#1/2/3	Alternating	-	-

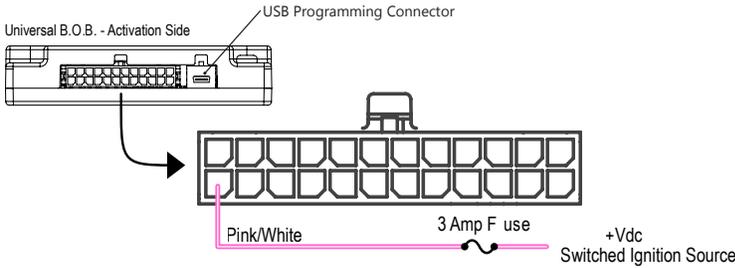
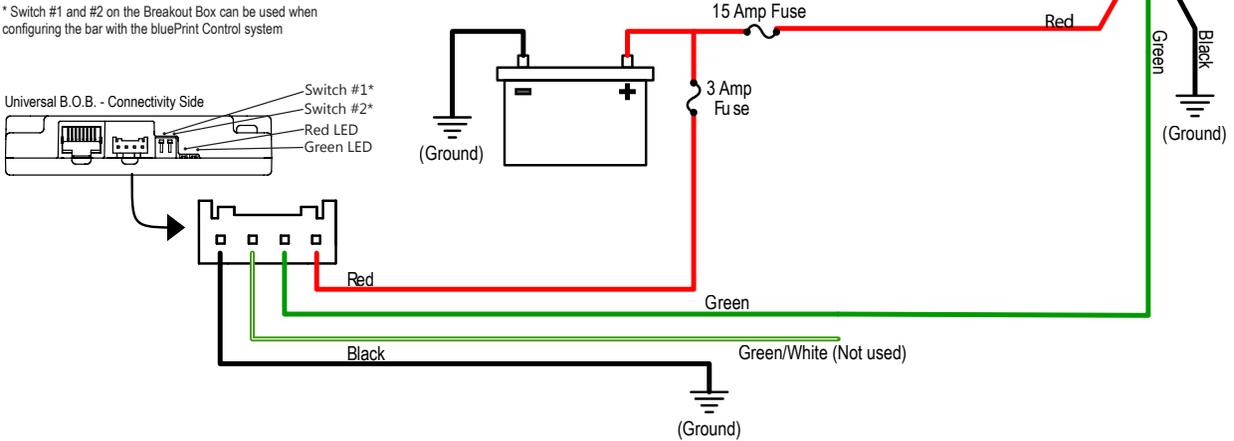
ELECTRICAL INSTALLATION (CONT.)

ARROW PATTERNS

#	Name	SAE Compliant Timing	California Title 13 Compliant Timing	Color	Sequence	fpm	fps
1	Single Fast	No	No	#1	-	-	-
2	Single Slow	No	No	#1	-	-	-
3	Chaser Fast	No	No	#1	-	-	-
4	Chaser Slow	No	No	#1	-	-	-
5	Fill Fast	No	No	#1	-	-	-
6	Fill Slow	No	No	#1	-	-	-
7	Grow/Shrink	No	No	#1	-	-	-
8	Warning w/Arrow	No	No	#1	-	-	-
9	Warning w/Arrow Fill	No	No	#1	-	-	-
10	Arrow Random 1	No	No	#1	-	-	-
11	Arrow Random 2	No	No	#1	-	-	-
12	Grow/Shrink 2	No	No	#1	-	-	-

ELECTRICAL INSTALLATION (CONT.)

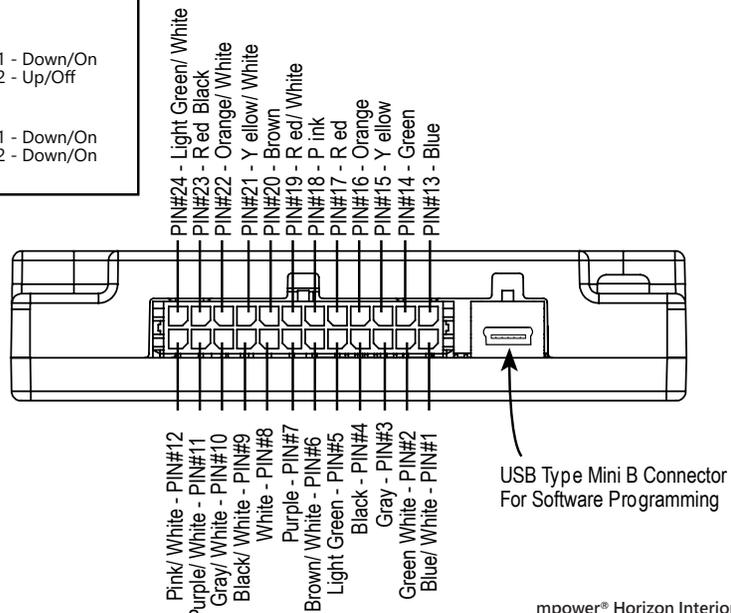
* Switch #1 and #2 on the Breakout Box can be used when configuring the bar with the bluePRINT Control system



Universal Breakout Box Setting I.D.
*Only used with bluePRINT applications with more than 1 Universal Breakout Box.

	ID 1	1 - Up/Off 2 - Up/Off		ID 3	1 - Down/On 2 - Up/Off
	ID 2	1 - Up/Off 2 - Down/On		ID 4	1 - Down/On 2 - Down/On

Functional Inputs
Functional Inputs connect to your control head or switching unit. Applying Vdc to any functional Input will activate its function (default-active high)



WIRE FUNCTION DEFAULTS

Table 1

Wire Pin #	Wire Color	Wire Function (defaults are most logical for a front or rear facing assembly)	Mods Affected	Color (If the color is not populated, it would be the next color listed)	Flash	CERT chosen SAE / None Pattern
1	BLU/WHT	Cruise 1	Entire Bar	Color 1, not White	-	-
2	GRN/WHT	Warning	Rear Bar	Color 1	Mode 2	Slow Runner
3	GRY	Left Turn	Chosen at Bar creation	Chosen at Bar creation	-	-
4	BLK	Right Turn	Chosen at Bar creation	Chosen at Bar creation	-	-
5	LTGRN	Tail	Chosen at Bar creation	Red → Nothing	-	-
6	BRO/WHT	Unassigned	-	-	-	-
7	PUR	Unassigned	-	-	-	-
8	WHT	Unassigned	-	-	-	-
9	BLK/WHT	Low Power 1	Entire Bar	-	-	-
10	GRY/WHT	*Left Arrow	Entire Bar	Amber → Color 1	-	-
11	PUR/WHT	*Right Arrow	Entire Bar	Amber → Color 1	-	-
12	PNK/WHT	IGNITION	-	-	-	-
13	BLU	Warning	Entire Bar	Color 1	Mode 1	Flicker Cruise
14	GRN	Warning	Front Bar	Color 1	Mode 2	Slow Runner
15	YEL	Warning	Entire Bar	Color 1	Mode 3	Quint
16	ORG	Warning	Entire Bar	Color 1	Mode 4	Inter-Cycle
17	RED	Warning	Entire Bar	Color 1	Mode 5	Warp
18	PNK	Warning with Cruise 1 Behind	Entire Bar	Color 1	Mode 6	Super Slow Runner
19	RED/WHT	Flashing	Takedown / Work Light	White → Nothing	-	-
20	BRO	Unassigned	-	-	-	-
21	YEL/WHT	Unassigned	-	-	-	-
22	ORG/WHT	Takedown / Work Light	Selected at Bar Creation	White	-	-
23	RED/BLK	Scene 1	Selected at Bar Creation	White	-	-
24	LTGRN/WHT	VSS Input for Speed 1 and 2	-	-	-	-

BREAKOUT BOX INSTRUCTIONS: (LIN COMMUNICATION)

- Securely snap in the 4-pin and 24-pin connectors
- Connect the Pink/White wire (Pin 12 of the 24 pin wire harness) to a switched 12-32V power source. Breakout Box needs constant power 12-32V to the Red wire (PIN 4 on 4 pin harness) & Ground to Black, (PIN 1 on 4 pin harness) in order to operate. (Table 2)
- Refer to Table 1 for the input wire's default function
- Follow the label for the wire color to connect to a +9-32Vdc source, which turns on that given light or lights
- Make sure your wire connections are secured and isolated from any other wire

4-PIN CONNECTOR HARNESS



Table 2

Wire Pin	Color	Function
1	Black	Ground
2	Green/White	LIN 2 - not used with this lightbar
3	Green	LIN 1 - mpower Horizon Lightbar operation
4	Red	Power



TO CHANGE WIRE FUNCTIONS FOR CUSTOM APPLICATIONS PLEASE SCAN QR CODE FOR LINK FOR SOUNDOFF CENTRAL LIGHTBAR SOFTWARE GUIDES.

CAN BREAKOUT BOX INSTRUCTIONS: (CAN COMMUNICATION)

- Securely snap in the 4-pin, 5-pin and 24-pin connectors
- Refer to Table 1 for the input wire default functions and to Table 3 for the CAN wire functions
- Connect the Pink/White wire (Pin 12 of the 24 pin wire harness) to a switched 12-32V power source. Breakout Box needs constant power 12-32V to the Red wire (PIN 4 on 4 pin harness) & Ground to Black, (PIN 1 on 4 pin harness) in order to operate. (Table 2)
- Follow the label for the wire color to connect to a 9-32 Vdc source, which turns on that given light or lights
- Make sure your wire connections are secured and isolated from any other wire
- If extending the 5-pin connector harness, a shielding wire running the length of the entire harness may be necessary

CONNECTOR PRESENT WITH CAN BOB

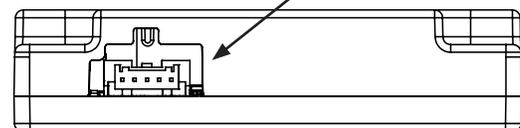
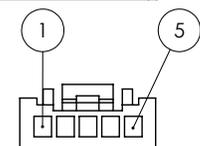


Table 3

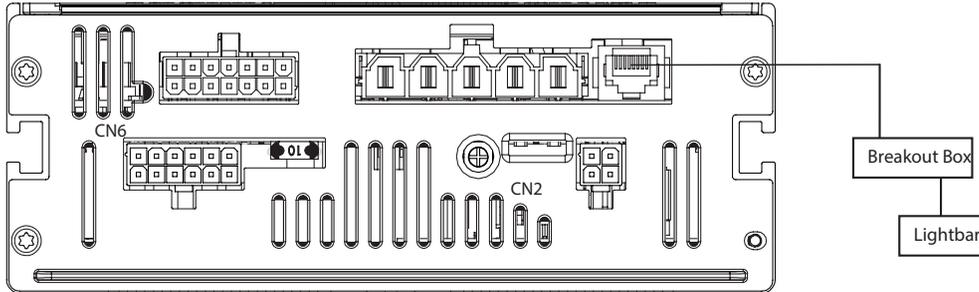
Wire Pin	Color	Function
3	Green	CAN Low
5	Yellow	CAN High



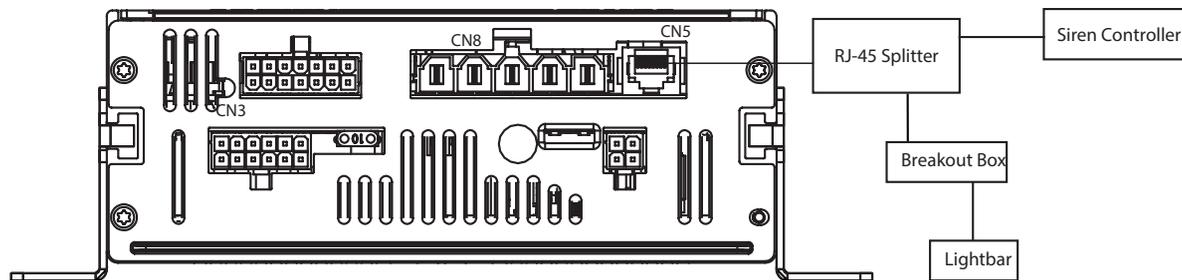
CAN CONNECTOR

CONNECTION OF LIGHTBAR BREAKOUT BOX TO SOUNDOFF SIGNAL SIREN:

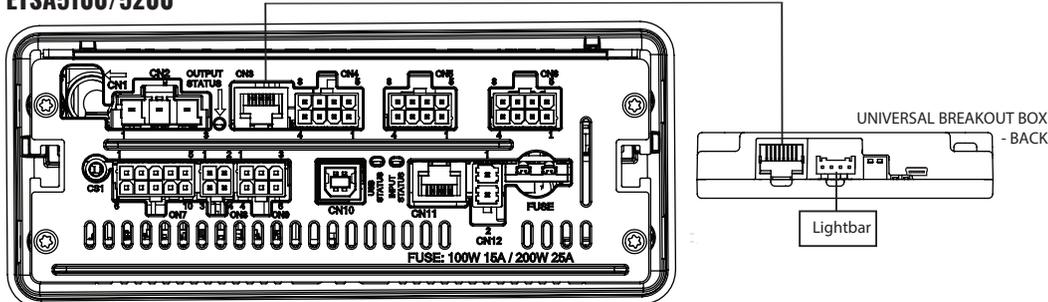
ETSA483CSx or ETSA484CSx



ETSA481RSP, ETSA482RSP, ETSA461HPP, ETSA462HPP



ETSA5100/5200



SoundOff Central® Software Universal Breakout Box ID Settings

When using more than one lightbar universal breakout box (UBOB) with SoundOff Central Software, set the ID number for each UBOB using the dip switches and then configure the light bars accordingly in the Software.

1. Select Lightbars Tab on the main SETUP Page.

2. Under Lightbars tab, select the EXTERNAL tab to see UBOB list. The number after the UBOB is the ID needed.

3. Hover cursor over the ? to open up Universal Breakout Box ID Information.

mpower® HORIZON LIGHTBAR TROUBLESHOOTING

Normal Operation

Under Normal operation with ignition input powered, the breakout box will have the GREEN LED ON and the RED LED light will be ON whenever an input is active.

GENERAL TROUBLESHOOTING	
Before further troubleshooting steps, start here:	<ul style="list-style-type: none"> • Check power source to the lightbar and breakout box (16AWG RED and 22AWG RED wires). • Check the ground source to the lightbar and breakout box (16AWG black and 22AWG black wires). • Check ignition source to the lightbar and breakout box (PINK/WHITE wire). • Check any splice and butt connections for proper crimp integrity. • Check connectors for positive engagement.
NO OPERATION	
The green LED is not illuminated	<ul style="list-style-type: none"> • Check Power (Pin #4) and Ground (Pin #1) on the 4-pin connector. • If not connected to a 400 Series Siren or bluePRINT Controller, check Ignition (pin #12) on the 24-pin connector.
The red LED is not illuminated while inputs are active	<ul style="list-style-type: none"> • Verify there is proper voltage on the input wire. Many inputs are positive or negative selectable (through SoundOff Central Lightbar). • Check lightbar program configuration using SoundOff Central Lightbar. Verify any active inputs are mapped to activate lightbar functions.
Green and red LEDs are illuminated properly	<ul style="list-style-type: none"> • Verify the lightbar data wires on the 4-pin connector (pin #3) is correctly connected to the light bar data wire. • Verify the data wire circuit (from the breakout box into the lightbar) is not damaged or shorted to power or ground.
NO LIGHT OPERATION IN ONE LIGHTBAR QUADRANT	
Breakout box LED's operating correctly	Remove top cover and follow the non-working modules wires to fuse location. Check for shorts in cabling and LED module. Replace any damaged cables or modules.
No Steady Red LED on breakout box	Check 24-pin connector at breakout box (ensure it is snapped in correctly), check appropriate input to breakout box for output lights which should be on.
NO TAKEDOWNS LIGHTS	
Breakout box LED's operating correctly;	Verify configuration and make sure light modules are configured for takedown function.
No steady Red LED on breakout box;	Check 24-pin connector at breakout box (insure it is snapped in correctly), check appropriate input to breakout box for output lights which should be on.
NO OR INCORRECT WARNING LIGHTS	
	<ul style="list-style-type: none"> • Verify the configuration for proper lightbar operation. • Verify the lightbar data wires on the 4-pin connector (pin #3) is correctly connected to the Lightbar data wire. • Verify light module ID/positions.
INCORRECT OR NO ARROW OPERATION	
Breakout box LED's operating correctly	• Verify configuration and make sure light modules are configured for arrow function.
No steady Red LED on breakout box	• Check 24-pin connector at breakout box (ensure it is snapped into position correctly), check appropriate input to breakout box for output lights which should be on.



SIREN FUNCTIONS

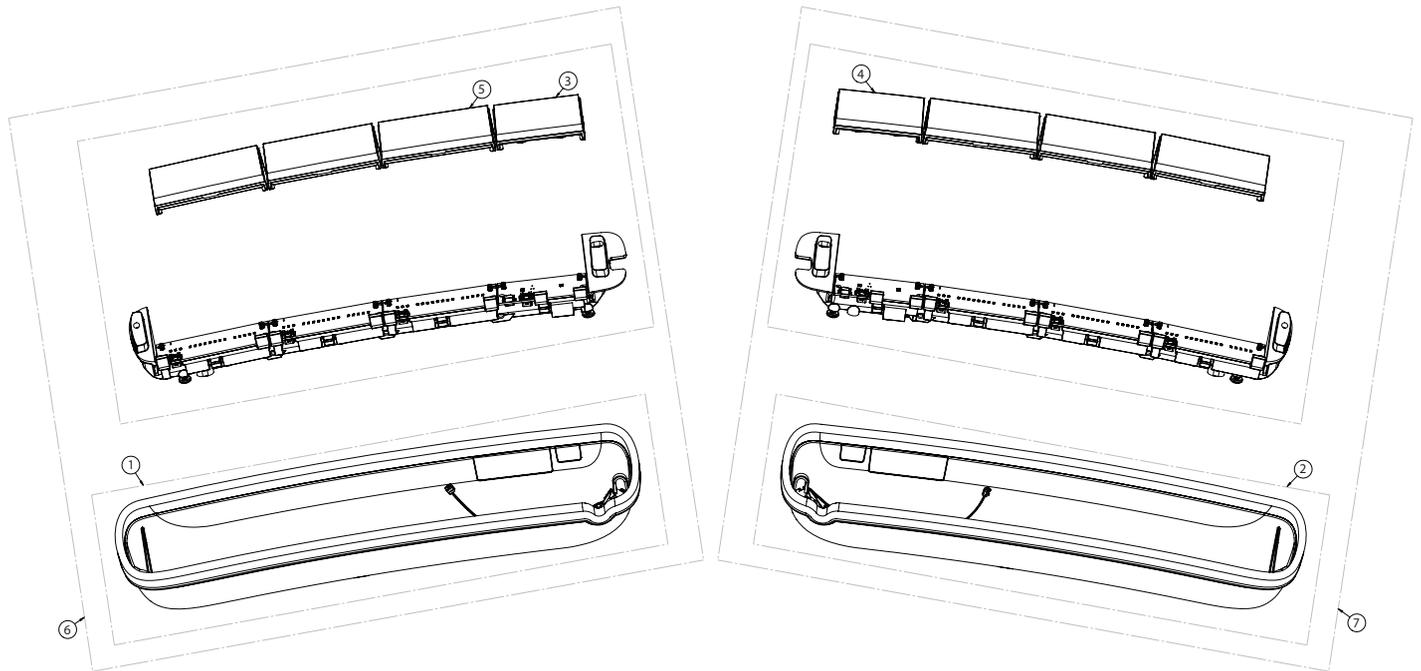
#	Button	Function	Mods affected	Color (If the color is not populated, it would be the next color listed)	Flash	CERT chosen SAE/NONE Pattern
S1	Pushbutton 1	*Left Arrow	*Rear Inboards	Amber → Color 1	-	-
S2	Pushbutton 2	-	-	-	-	-
S3	Pushbutton 3	-	-	-	-	-
S4	Pushbutton 4	Takedown	Selected at Bar Creation	White	-	-
S5	Pushbutton 5	Cruise 1	Entire Bar	Color 1	-	-
S6	Pushbutton 6	Low Power 1	Entire Bar	-	-	-
S7	Pushbutton 7	Scene 1	Selected at Bar Creation	White	-	-
S8	Pushbutton 8	-		No	-	-
S9	Single Button Arrow	*Right Arrow	*Rear Inboards	Amber → Color 1	-	-
S10	Slide Switch 1	Warning	*Rear Inboards	Color 1	Mode 2	Slow Runner
S11	Slide Switch 2	Warning	Entire Bar	Color 1	Mode 3	Quint
S12	Slide Switch 3	Warning	Entire Bar	Color 1	Mode 4	Intercycle

***Based upon the mounting location of your bar**



TO CHANGE WIRE FUNCTIONS FOR CUSTOM APPLICATIONS PLEASE SCAN QR CODE FOR LINK FOR SOUND OFF CENTRAL LIGHTBAR SOFTWARE GUIDES.

REPLACEMENT PARTS



ITEM #	PART#	DESCRIPTION
-	PUVBBJ00	BOB - Would work with new software
1	PHZWBHG001	Housing assembly (shroud, fan, foam, filter, zip tie) LH
2	PHZWBHG002	Housing assembly (shroud, fan, foam, filter, zip tie) RH
3	PHZWBLE002	Takedown Lens (1pc) - LH
4	PHZWBLE003	Takedown Lens (1pc) - RH
5	PHZWBLE001	Emergency Warning Light Lens (1pc)
6	EHZWB(xxxxx)	LH Lightbar (not for sales, service only) - Configured
7	EHZWB(xxxxx)	RH Lightbar (not for sales, service only) - Configured

WARRANTY & RETURN GOODS PROCEDURE

MOUNTING INTEGRITY: A review of bolt/hardware/mounting bracket integrity should be performed at the beginning and end of each shift.

WARNING MESSAGES - PLEASE READ:

WARNING - DRILLING ANY HOLES INTO THE LIGHTBAR IS NOT RECOMMENDED! THE RISK OF DAMAGING INTERNAL COMPONENTS AND THE RESULTING FAILURE OF THE LIGHTBAR WILL VOID ANY WARRANTY OF THIS PRODUCT.

WARNING - ROUTE WIRES ONLY IN LOCATIONS THAT ARE NOT SUBJECTED TO POTENTIAL WEAR. MAKE SURE TO AVOID ROUTING WIRES IN THE DEPLOYMENT AREA OF YOUR AIR BAG. REFER TO YOUR VEHICLE OWNER'S MANUAL FOR AIR BAG DEPLOYMENT ZONES.

WARNING - ALL CUSTOMER SUPPLIED POWER WIRES CONNECTING TO THE POSITIVE (+) OR NEGATIVE (-) BATTERY TERMINAL OR LOCAL CHASSIS GROUND (-) MUST BE SIZED TO SUPPLY AT LEAST 125% OF THE MAXIMUM CURRENT AND PROPERLY FUSED AT THE POWER SOURCE WITH APPROPRIATELY RATED FUSE.

IMPORTANT: When passing cables through fire wall or other sheet metal, insert grommet to protect the cable!

WARRANTY RETURN PROCESS:

Please scan QR code or visit <https://soundoffsignal.com/support-page/returns/>.



Alternatively contact your SoundOff Signal Sales Representative, Customer Services staff or our Technical Department (800-338-7337) for a RMA #, Return Merchandise Authorization Number.

The following information is required for issuance of the RMA #:

- Reason for returning the product*
- Address where replacement product is to be shipped*
- Telephone number where you may be reached*
- SoundOff Signal invoice number on which product was purchased**
- SoundOff Signal part number and serial number**
- E-mail address where RMA # should be e-mailed**
- Fax number where RMA # should be faxed**

* RMA # will not be given without this information.

** If available, please provide this information.

SoundOff Signal will NOT accept returns without an RMA #. Each RMA # is good for only one (1) return and will expire (30) days after the date it was issued. Products must be shipped back to SoundOff Signal and the RMA # clearly marked on the outside of the package near the shipping label. Please use the following address on your shipping label:

SoundOff Signal
ATTN: RMA # / Technical Services
3900 Central Parkway
Hudsonville, MI 49426

WARRANTY EXCLUSIONS:

Shipping & Handling, labor and service fees are non-refundable. SoundOff Signal is not liable for any damage due to installation or personal injury as a result of using SoundOff Signal product.

WARRANTY FORFEITURE:

Warranty will not be granted if the Warranty Return Policy & Procedure rules are not strictly followed. Physical damage resulting from customer abuse will void warranty. Warranty will also be voided if any SoundOff Signal and/or manufacturer serial tags, product stickers, seals, or the like, are removed, altered or tampered with. Returned product that is damaged by shipping via the RMA # procedure is not the responsibility of SoundOff Signal.

Document effective date on cover and below supersedes previously dated policies and statements.

There are no other warranties, expressed or implied, including, but not limited to, any implied merchantability or fitness for a particular use. SoundOff Signal reserves the right to modify this warranty statement at any time; or to discontinue, modify, or upgrade any products of its manufacture with design improvements without prior notice.