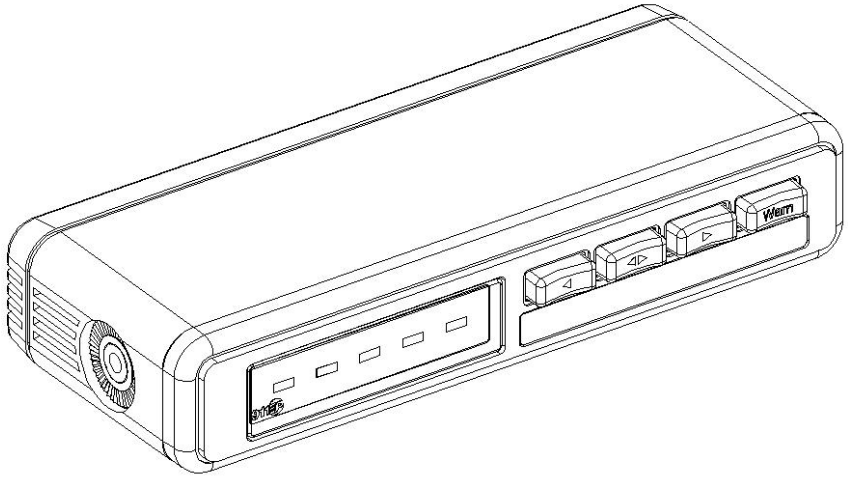
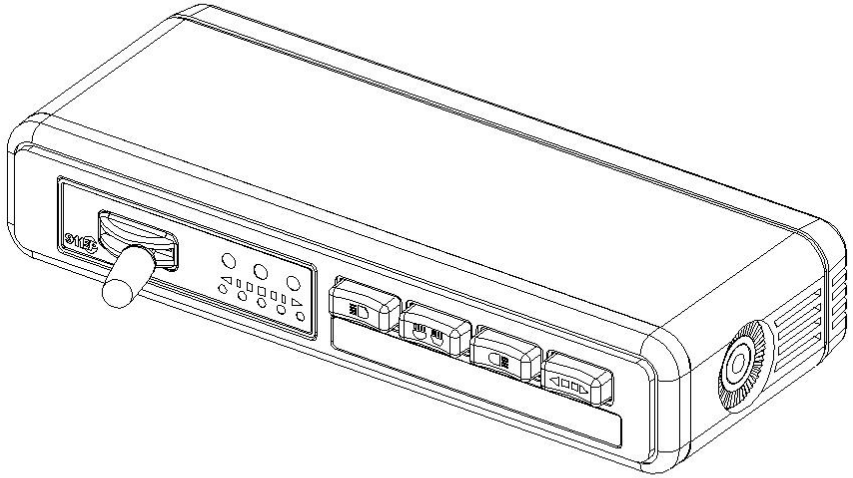
Owner's Manual





Orion Controller Series

Orion Elite: *Model Number - ORIEL4*

Orion Standard: *Model Number - ORISD4*

Orion Director: *Model Number - ORITD4*

Thank you for purchasing a 911EP® Orion Controller!

! This Product Contains NO User Serviceable Parts !
! Always Install Recommended Fuse Protection !

Overview

The Orion™ Controller Series is specifically designed to optimize the functionality, enhance the experience, and streamline the installation of many 911EP® Traffic Director™ and/or Galaxy™ light bar products.

Precautions

- ✓ Installing any Orion™ Controller requires a good understanding of automotive electronics, systems, and procedures.
- ✓ Please read all of the instructions, before attempting to install or operate any of the Orion™ Controllers.
- ✓ Always disconnect power when installing or uninstalling this device.
- ✓ Never use a battery charger to bench test this device.
- ✓ This product is intended to be installed and operated in indoor applications only.

Questions?

911EP® will try to quickly resolve any questions or concerns you may have as to the use of our products or issues you may experience with them. Please contact our Customer Service department with any general questions or our Technical Service department with any technical questions or concerns. **When contacting us about a product you have purchased, please have the product's serial number readily available.**

Phone: (800) 863-6911

Fax: (800) 863-2991

Visit us at: www.911EP.com

Product's Technical Specifications and Mounting Suggestions

Electrical Specifications

Optimum Operating Voltage – 13.8 volts DC (working range 12 – 15 volts DC)

Current Rating (Outputs) – Relay Outputs (R1 & R2): 250mA max output current per relay output.

– Standard Outputs: 100mA max output current per output.

Model	Max. Current Draw (When In Use)	Average Current Draw (When In Use)	Average Current Draw (When Not In Use)	Current Draw (Backlighting)	Fuse Requirement
Orion Elite	309mA	190mA	7mA	95mA	2 amp
Orion Standard	235mA	130mA	.273mA	36mA	
Orion Director	180mA	122mA	.275mA	29mA	

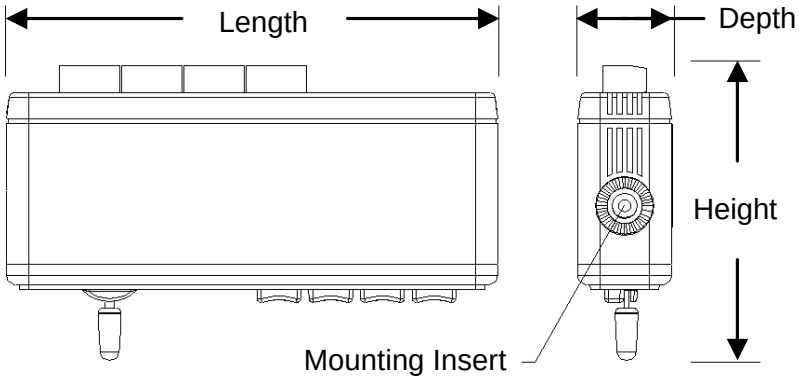
Mechanical Specifications

Product Dimensions: Length = 6 9/16" (16.7 cm)

Height = 1 9/32" Max (3.25 cm)

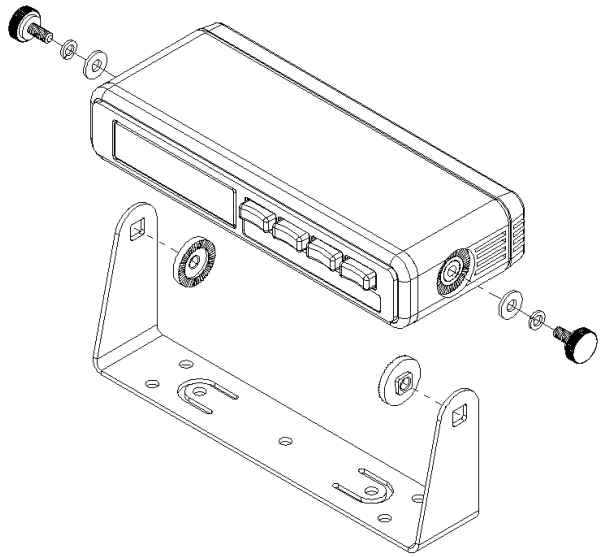
Depth = 3 3/4" (9.5cm)

Side Mounting Inserts: #8-32 x 1/4" Threading.



Product Mounting

A bail bracket is included with each Orion controller purchased. This bracket has the ability to mount a unit to a variety of surfaces. 911EP® also offers a dual bracket which has the ability to mount 2 units (1 directly above the other). Contact our customer service department to purchase the dual bracket. All hardware required to mount the bracket to the controller is provided. However, the hardware required to mount the bracket to the preferred surface is not. The illustration below will show the correct assembly of the bracket and hardware included with your Orion controller.



The following is a list of manufacturers and model numbers of additional mounting options compatible with the Orion Controllers.

Troy Products: #FP-M9004

Jotto Desk: #425-6310

Lund Industries: #125375-WC

D & M Electronics: #02.0137

Orion Elite: Features, Functions, and Installation Guidelines

Features:

Lever Switch: A 4 position (off, 1, 2, and 3) switch that provides progressive control over 3 configurable warning patterns.

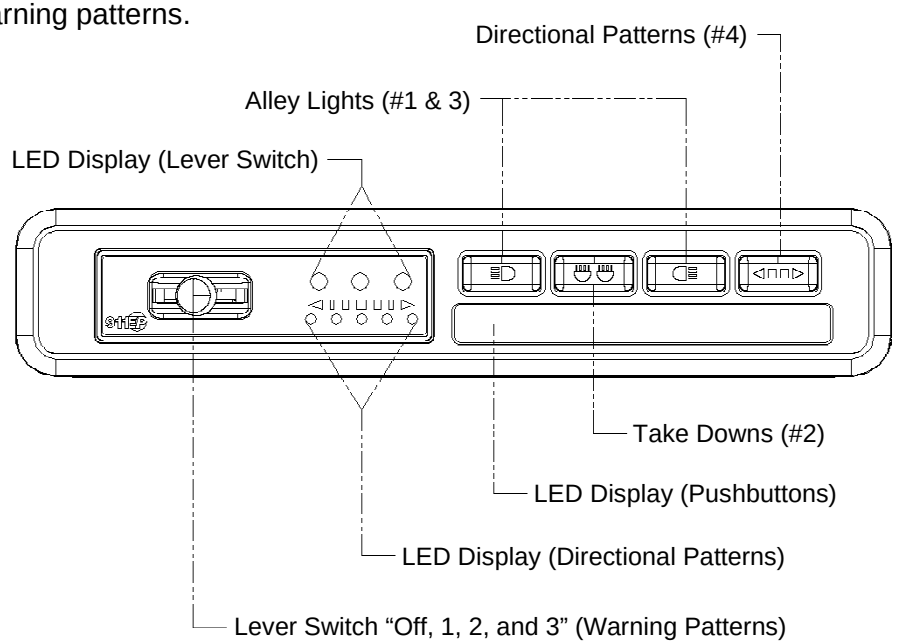
Pushbutton Switches 1-3: Provides independent control over the Take Down and Alley Light steady-on override function.

Pushbutton Switch 4: Provides independent control over the configurable left, center-out, and right directional patterns in addition to a single warning pattern. Repeatedly pressing this pushbutton will cycle through the available patterns. Depressing and holding this button for a couple seconds will automatically turn off any activated pattern. Eliminates the need to cycle back to the off position.

Pushbutton LED Display: The pushbutton LED display identifies which switch is currently activated.

Lever Switch LED Display: Progressively displays the activated pattern(s) controlled by the lever switch. The LEDs are color coded for easier identification.

Directional Pattern LED Display: Will simulate a simplified version of the directional pattern currently activated. Direct Left, Right, Center-Out, or Warning patterns.



Functions:

Configuring: Activate any of the pushbuttons or lever switch positions. Momentarily apply +12V to the configure input (CFG) toggling to the next available pattern. When a pattern has been selected, deactivate that switch/position, and move to the next one. Repeat the same process for each switch or lever switch position.

Beep Enable: This feature will make the controller beep anytime a pushbutton or switch is activated, about every 50 seconds. This option is available if you would like to have a reminder that a flash pattern has not been shut off from the last time it was activated. To activate this feature, depress and hold down push buttons 1 and 4 (left alley and directional patterns) for about 2 seconds. If the buzzer shuts off then this beep enable feature is disabled. If the buzzer’s sound changes to a higher pitch then this feature is enabled.

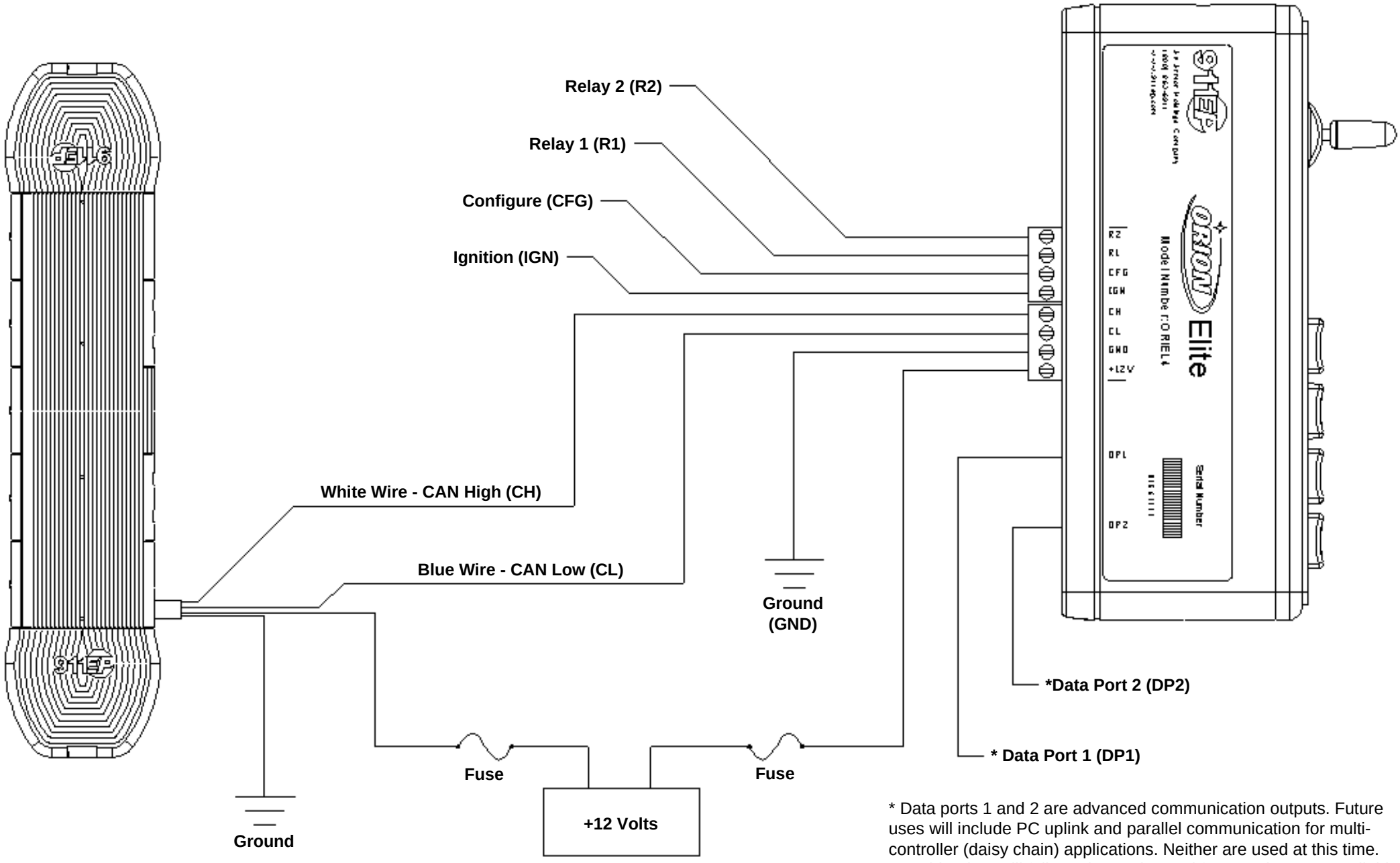
Communication Error Detection: If at any time the pushbutton switches begin flashing, double check the integrity of the communication wire connections. Flashing pushbuttons is the Orion™ Elite’s method of notification in the event that a communication error occurs.

Installation Guidelines:

Backlighting: Establishing a +12V connection to the ignition input (IGN) will enable this feature. This activates the backlighting LEDs directly behind the 4 pushbuttons. The pushbuttons will appear as if they are glowing making them easier to locate when needed. Although any +12V connection can be used, it is recommended that this connection be hard wired into the vehicle’s ignition system or independent relay. Following this recommendation will ensure that this feature is activated only when the vehicle is in use, preventing unnecessary battery drain.

Relay 1 and 2 Output: These additional outputs have the capacity to handle up to a maximum current load of 250mA. Anytime a lever switch function is activated relay 1 output (R1) will send a +12V signal to any device (such as an additional relay) which is adequately rated at or below a 250mA trigger load. Relay 2 (R2) output will send a +12V signal only when the lever switch is in position 3.

Orion Elite: Wiring Schematic



* Data ports 1 and 2 are advanced communication outputs. Future uses will include PC uplink and parallel communication for multi-controller (daisy chain) applications. Neither are used at this time. An addendum will follow when enhanced features become available.

Orion Standard: Features, Functions, and Installation Guidelines

Features:

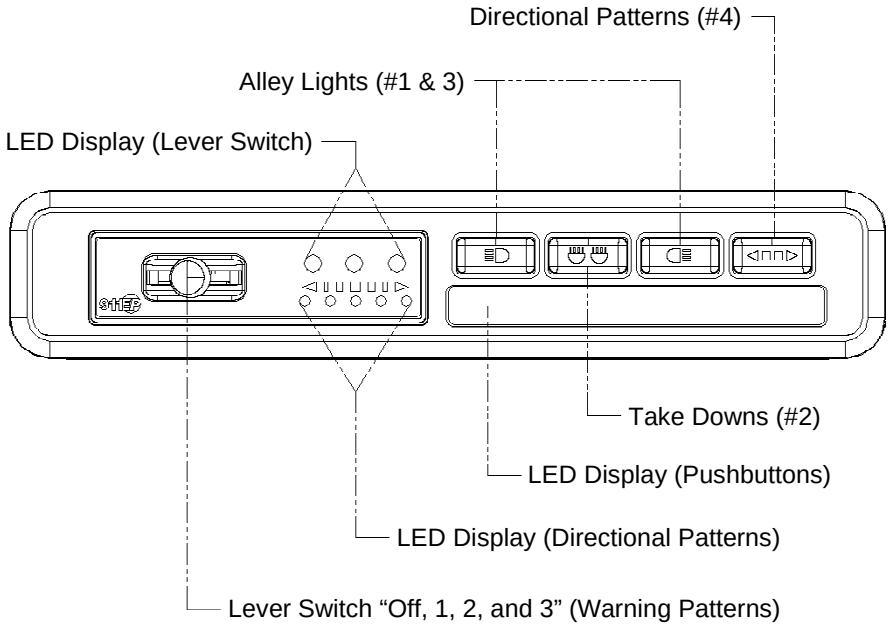
Lever Switch: A 4 position (off, 1, 2, and 3) switch that provides progressive control over 3 configurable warning patterns. The 3 “ON” positions of this switch correspond to the C1, C2, and C3 outputs.

Pushbutton Switches 1-3: Provides independent control over Take Down and Alley Lights. They correspond to the Left Alley, Right Alley, and Take Down outputs (Label reference LA, RA, and TD).

Pushbutton Switch 4: Provides independent control over the configurable left, center-out, and right directional patterns in addition to a single warning pattern. Repeatedly pressing this pushbutton will cycle through the available patterns. It corresponds to the Warning, Direct Left, and Direct Right outputs (W, DL, and DR). Depressing and holding this button for a couple seconds will automatically turn off any activated pattern. Eliminates the need to cycle back to the off position.

Pushbutton LED Display: The pushbutton LED display identifies which switch is currently activated.

Lever Switch LED Display: Progressively displays the pattern(s) activated by the lever switch. The LEDs are color coded for easier identification.



Directional Pattern LED Display: Will simulate a simplified version of the directional pattern currently activated. Direct Left, Right, Center-Out, or Warning patterns.

Functions:

Take Down Output: This output has the capacity to handle up to a maximum current load of 250mA. Since the take down lights integrated into the Galaxy light bar have a current rating of 10A per 100W of power, an inline relay adequately rated to handle the current load must be utilized. The activation wire from the relay should be connected to the take down output (TD) on the rear side of the case.

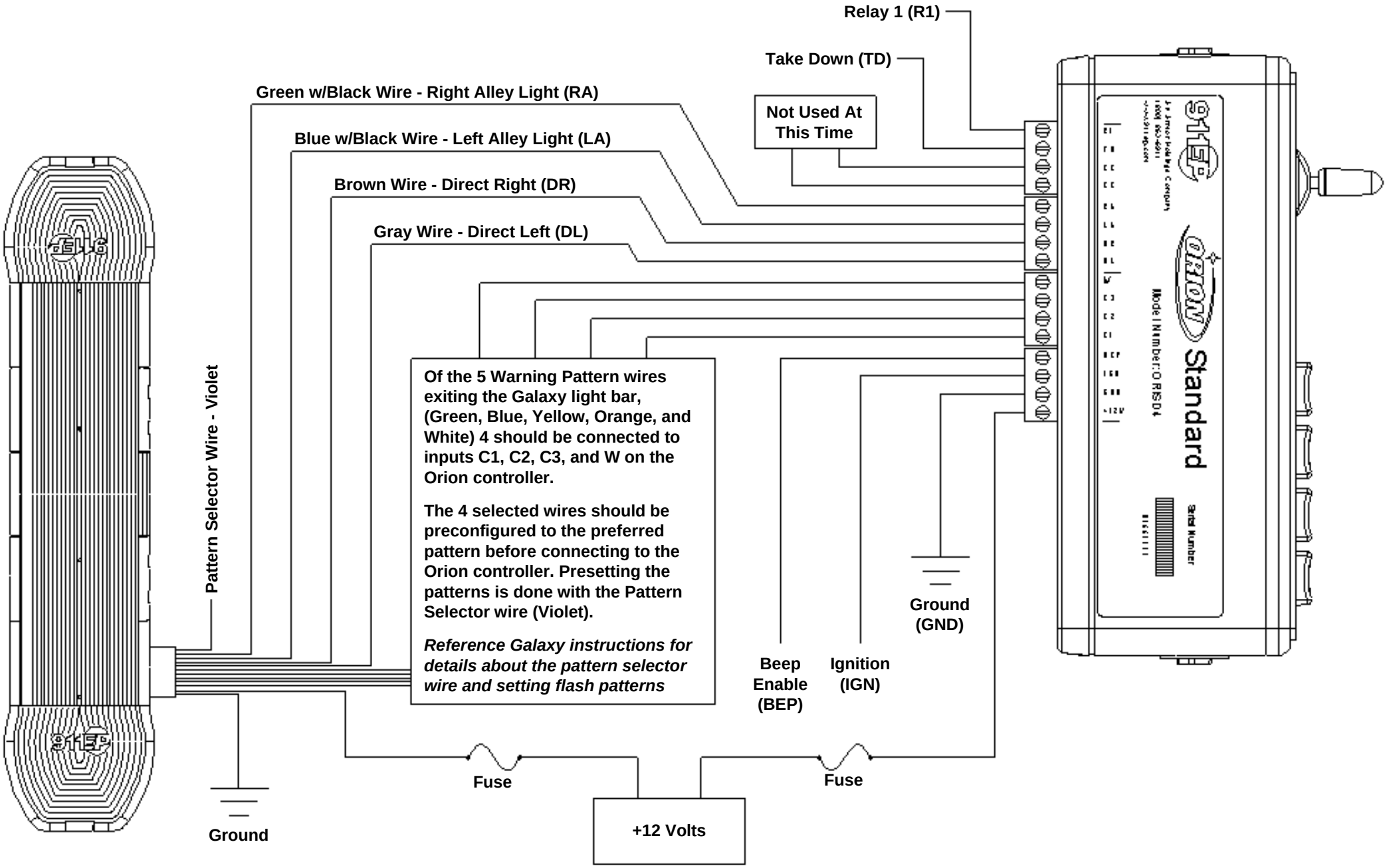
Relay 1 Output: This additional output has the capacity to handle up to a maximum current load of 250mA. Anytime a lever switch function is activated relay 1 output (R1) will send a +12V signal to any device (such as an additional relay) which is adequately rated at or below a 250mA trigger load.

Installation Guidelines:

Beep Enable: This feature will make the controller beep anytime a pushbutton or switch is activated, about every 50 seconds. This option is available if you would like to have a reminder that a flash pattern has not been shut off from the last time it was activated. To activate this feature, establish a +12V connection to the beep enable input (BEP) on the rear side of the case.

Backlighting Feature: Establishing a +12V connection to the ignition input (IGN) will enable this feature. This activates the backlighting LEDs directly behind the 4 pushbuttons. The pushbuttons will appear as if they are glowing making them easier to locate when needed. Although any +12V connection can be used, it is recommended that this connection be hard wired into the vehicle’s ignition system or independent relay. Following this recommendation will ensure that this feature is activated only when the vehicle is in use, preventing unnecessary battery drain.

Orion Standard: Wiring Schematic



Orion Director: Features, Functions, and Installation Guidelines

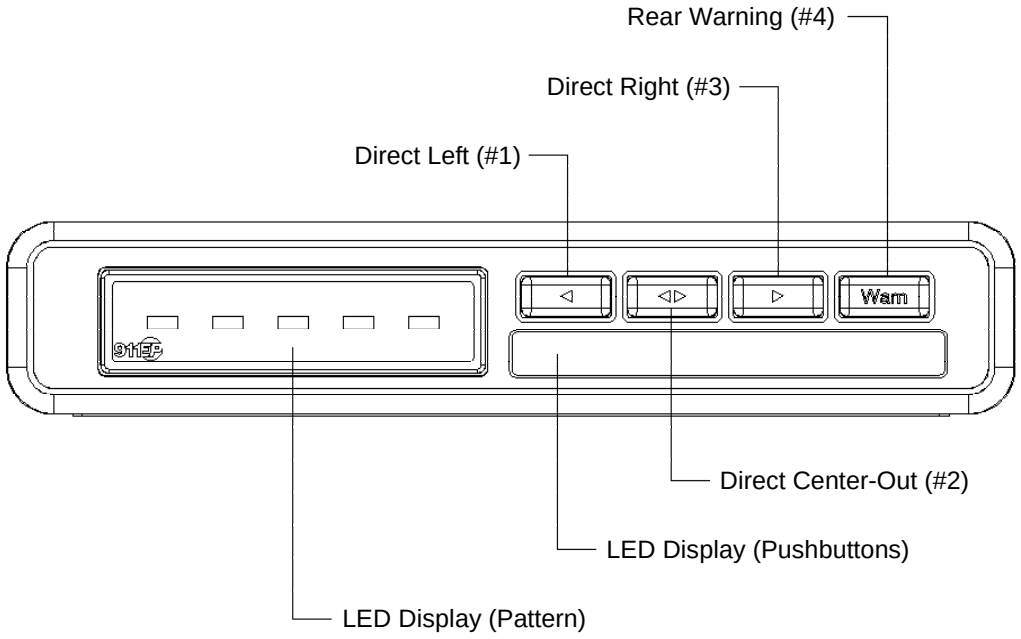
Features:

Pushbutton Switches 1-3: Provides independent control over the configurable direct left, center-out, and right directional patterns. These pushbuttons correspond to outputs O1, O2, and O3 on the rear side of the case.

Pushbutton Switch 4: Provides independent control over the configurable warning pattern. This pushbutton corresponds to the O4 output on the rear side of the case.

Pushbutton LED Display: The pushbutton LED display identifies which switch is currently activated.

Pattern LED Display: A simplified version of the pattern currently activated will be simulated by the LEDs of the display. Direct left, center-out, right, or warning patterns.



Functions:

Configuring: Following the schematic will achieve the controller's default flash pattern settings. If you wish to configure the pushbuttons to activate a pattern different from the defaults you have the ability to do so. Establish a continuous +12V connection to the Configure input (CFG). Repeatedly pressing any pushbuttons on, off, and then on again will cycle through the available flash patterns. Once you have selected a pattern, depress the pushbutton so it is inactive and move onto the next pushbutton. Once all the pushbuttons are configured, remove the +12V connection from the Configure input and your selected patterns are programmed.

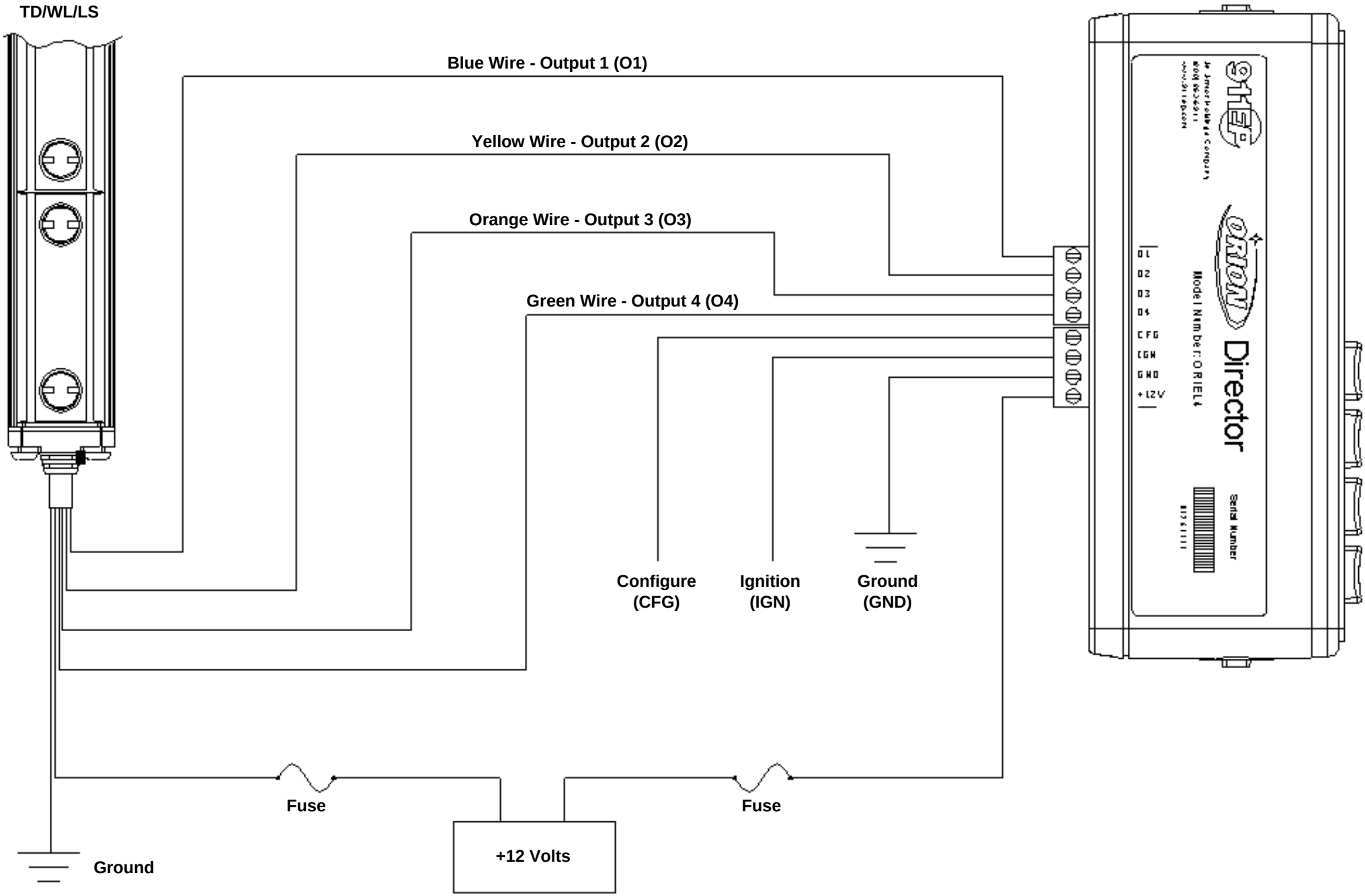
Restoring Default Settings: If it becomes necessary to restore the default settings. Establish a continuous +12V connection to the Configure input (CFG). Activate any of the pushbuttons, then depress and hold pushbuttons #2 and #4 for a few seconds. Listen for the buzzer to stop and wait for all LED's on the device to turn off. Release the depressed pushbuttons and remove the +12V connection from the configure input. This will restore the default flash pattern settings of the Orion Director.

Beep Enable: This feature will make the controller beep, about every 50 seconds, anytime a pushbutton or switch is activated. This option is available if you would like to have a reminder that a flash pattern has not been shut off since the last time it was activated. To activate this feature, depress and hold down push buttons 1 and 4 (direct left and warning) for about 2 seconds. If the buzzer shuts off then this beep enable feature is disabled. If the buzzer's sound changes to a higher pitch then this feature is enabled.

Installation Guidelines:

Backlighting Feature: Establishing a +12V connection to the ignition input (IGN) will enable this feature. This activates the backlighting LEDs directly behind the 4 pushbuttons. The pushbuttons will appear as if they are glowing making them easier to locate when needed. Although any +12V connection can be used, it is recommended that this connection be hard wired into the vehicle's ignition system or independent relay. Following this recommendation will ensure that this feature is activated only when the vehicle is in use, preventing unnecessary battery drain.

Orion Director: Wiring Schematic



User's Notes

Reference Information:

Vehicle's Identification # _____

Date of Installation _____

911EP's Technical Support # (800) 863 - 6911

Place product's secondary ID label here

LIMITED WARRANTY

Congratulations on your purchase of a quality 911EP® product.

911EP®, Inc. (the “Warrantor”) will replace parts, in case of defects in materials or workmanship, for one year subject to the following conditions and limitations:

- This warranty only covers failures due to defects in materials or workmanship, and does not cover normal wear or cosmetic damage. This warranty does not cover damage that occurs in shipment, failures caused by products not supplied by the Warrantor, or failures that result from abuse, accidents, maladjustment of consumer controls, neglect, improper or inadequate maintenance, improper use of the product, corruption of the cigarette plug, amputation of the cigarette plug, unauthorized modification of the product, commercial use (such as rental use) of the product or damage that is attributable to acts of God or other events beyond the control of the Warrantor.

- The Warrantor will, for one year from the date the product is shipped from the 911EP® manufacturing facility, cover the cost of replacement for defective parts under this Warranty. This warranty does not cover chipping, scratching, fading or discoloration of lenses or paint. Halogen lamps are not covered under this warranty. The warranty does not cover labor charges for removal and re-installation of the product. This warranty will be voided by any unauthorized alteration made to your 911EP® product, or by the installation or attachment of any accessory not designed by 911EP® specifically for the product.

- The Warrantor shall not be liable for incidental or consequential damages resulting from the use of this product, or arising out of any breach of this warranty. If a problem with this product develops within the warranty period, contact a Technical Service Representative at (800) 863-6911.

Exclusion of Warranties: This limited warranty is expressly in lieu of all other agreements and warranties, general or special, express or implied. The warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, and all other warranties, express or implied, are EXCLUDED from this transaction and shall not apply to the goods sold. The Warrantor reserves the right, in its sole and absolute discretion, to refund all or a portion of the purchase price rather than repair or replace any defective materials for workmanship.

The Warrantor shall not be liable for incidental or consequential damages. Some states and countries do not allow the exclusion or limitation of implied warranties, incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This limited warranty does not cover any representation or warranty made by any person beyond the provisions of this warranty. No representative or person is authorized to assume liability on behalf of the Warrantor in connection with the sale or use of any product.

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