



# INSTRUCTION MANUAL

Smart Trigger Control Kit  
2 Input / 2 Output



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## Introduction

Thank you for purchasing Laserglow's Smart Trigger Kit product.

This product is a safety-assisting device to give warning signals by detecting the proximity of vehicles and pedestrians at industrial work sites. Laserglow will not be held responsible for any personal injury or property damage caused by improper use. Before using this product, please read this manual carefully.



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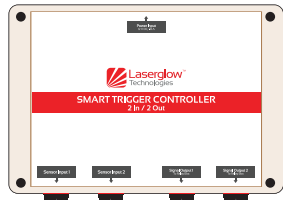
# Section 1: Description of Components

The Laserglow Smart Trigger System is a flexible and modular system designed to be configured in several different ways to meet a variety different installation requirements.

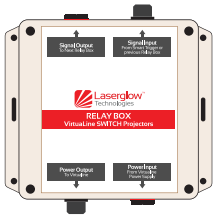
## THE SMART TRIGGER SYSTEM CONSISTS OF 5 MAJOR COMPONENTS



**Sensors/Inputs:** Various types of sensors and inputs are available for the Smart Trigger system. They include motion sensors, beam-break sensors, pushbuttons, and our SPDS (Smart Proximity Detection System) devices. If you wish to use your own sensor or another kind of sensor that is not offered, contact Laserglow for assistance.

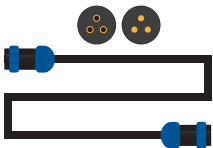


**Smart Trigger Controller 2 Input / 2 Output:** The Smart Trigger is the brain of the Smart Trigger System. It accepts input signals from sensors or other devices, and then energize one or more outputs as per the program. The Smart Trigger is the control unit with one sensor input and one signal output.

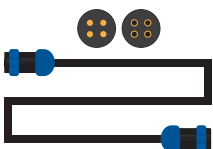


**Relay Boxes:** The Relay Box is the interface between the Smart Trigger and the devices that are being controlled, such as Virtual Sign/Walkway Projectors, Virtual line LED fixtures, and alignment laser modules. The Relay Box is connected between the light fixture and its power supply, and switches the power to the light fixture on and off in response to a signal provided by the Smart Trigger. Every Relay Box also has a signal output, so many projectors/light sources can be “daisy-chained” together in series, allowing a single Smart Trigger to control all of them simultaneously.

NOTE: Connecting more than 10 fixtures in series may introduce signal degradation issues. Contact Laserglow to discuss your specific application.



**Signal Cables:** These cables carry the signal from the Smart Trigger to the Relay Box, and from one Relay Box to the next. They are available in 2m and 5m lengths and can be joined together to extend even further. Custom lengths are available if required.



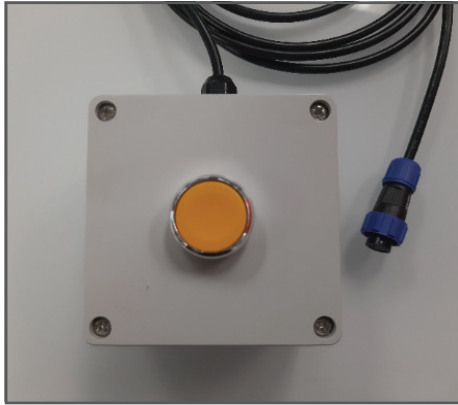
**Sensor Cables:** All sensors include a fixed length of cable, typically 2 meters. If this is not long enough, sensor extension cables are available in 2m and 5m lengths and can be joined together to extend even further. Custom lengths are available if required.

NOTE: Connecting more than 30 meters of sensor or signal cables together may introduce signal degradation issues. Contact Laserglow to discuss your specific application.

NOTE: Signal and Sensor cables can also be extended by splicing additional cable into the existing cable. The signal and sensor cables carry 12V power and typically less than 100 mA of current. 4 conductor cables are required and Laserglow recommends using 22 AWG cable or larger to avoid signal degradation issues.



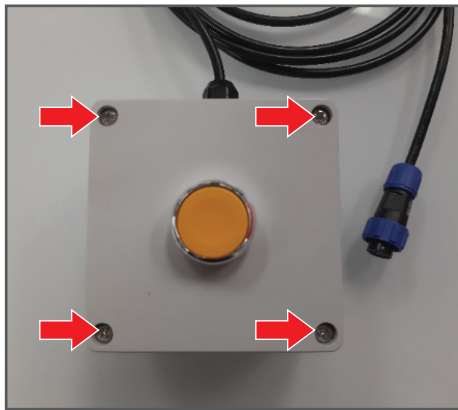
## Section 2: Sensor Details



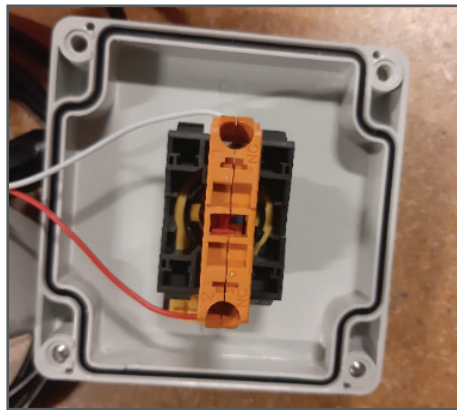
### PUSH BUTTON

**Introduction:** The pushbutton typically comes in a small enclosure that can be easily mounted to a flat surface such as a wall, and typically comes with 2 meters of cable permanently attached with the enclosure. This can be extended using Sensor Extension cables (available in 2m and 5m length) as needed. The pushbutton can be disconnected from the cable if required for installation.

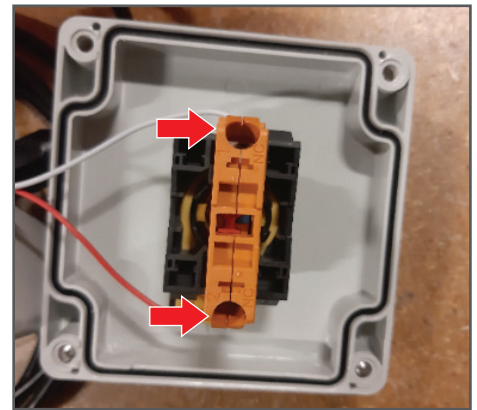
### INSTALLATION



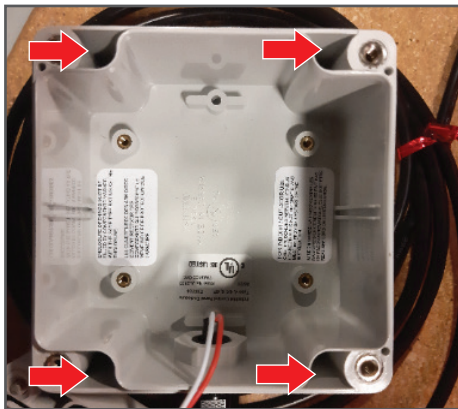
1: Unscrew the four screws.



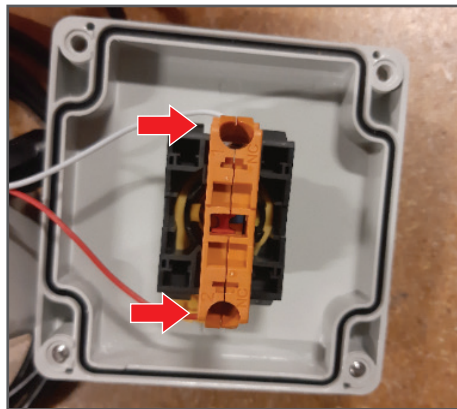
2: Carefully remove the top with button attached. The bottom of the button has the wires connected to the terminal block of the Push Button.



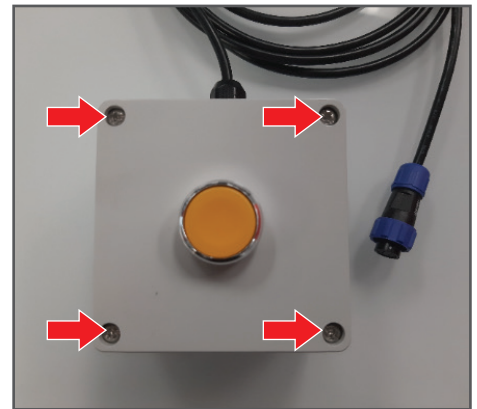
3: Disconnect the wire by unscrewing the two screws.



4: Use the holes (inside these channels) to mount the bottom part of the housing on any surface.



5: Connect the red and white wires to the terminal block of the push button.



6: Close the top part of the housing screwing all 4 screws.



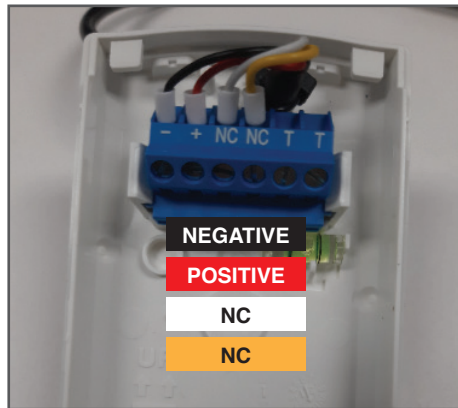
### INDOOR MOTION SENSOR

**Introduction:** Indoor Motion sensors come with approximately 2 meters of cable already attached. This can be extended using Sensor Extension cables as needed. The motion sensor can be disconnected from the cable if required for installation. To do this, unlock the rear panel by turning the locking screw on the bottom of the sensor, then slide the rear panel off. The wires can be removed by loosening the screws in the terminal block. When reconnecting the wires later, ensure that red is connected to +, black to -, and the white and yellow wires are connected to the two terminals marked with 'NC'. Physically these sensors are typically installed by screwing the rear panel to a flat surface such as a wall, but they can also be zip tied to poles or other irregular fixtures if required.

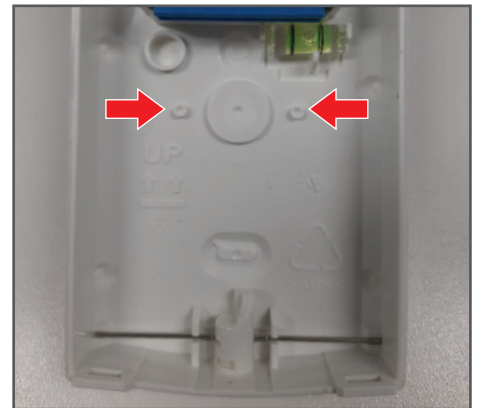
### INSTALLATION



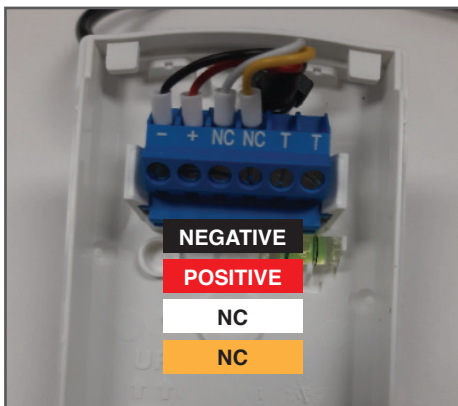
**1:** Using flat screw driver turn the knob at the bottom of the sensor to the unlock position and remove the top cover.



**2:** Remove the wires. Ignore this step if the installation space is accessible and wires do not make the installation difficult.



**3:** Use these marks to pierce holes using a screw, then mount the bottom part of the housing on any surface



**4:** Screw in the wires back to the terminal block. Slide in the top cover, and it will lock by itself.



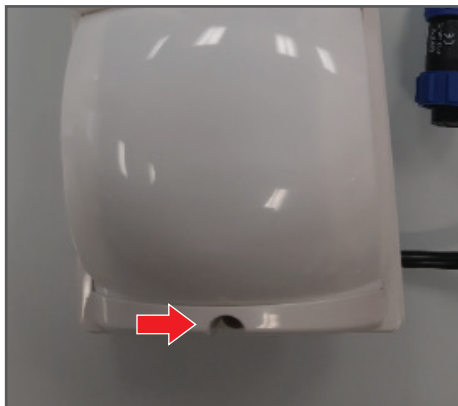
### OUTDOOR MOTION SENSOR

**Introduction:** Outdoor Motion sensors come with approximately 2 meters of cable already attached. Outdoor motion sensor comes in 2 different version Wide Range and Long Range. This can be extended using Sensor Extension cables as needed (Extension cables available in 2m and 5m length). Wide range sensor can be ideally mounted at 10ft height and it will give sensing area of approximately 50ft (across) X 40ft (away from sensor). Long range sensor can be ideally mounted at 10ft height and it will give approximate sensing area of 10ft (across) X 80ft (away from the sensor).

The motion sensor can be disconnected from the cable if required for installation.

To do this, unlock the rear panel by turning the locking screw on the bottom of the sensor, then slide the rear panel off. The wires can be removed by loosening the screws in the terminal block. When reconnecting the wires later, ensure that red is connected to +, black to -, and the white and yellow wires are connected to the two terminals marked with 'NC'. Physically these sensors are typically installed by screwing the rear panel to a flat surface such as a wall, but they can also be zip

### INSTALLATION



1: Unscrew the top cover of the sensor by unscrewing the screw



2: Remove the wires.  
Ignore this step if the installation space is accessible and wires do not make the installation difficult.



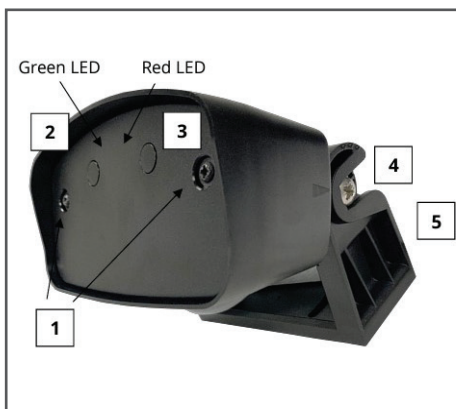
3: Use the holes to mount the bottom part of the housing on any flat surface. Screw in the wires back to the terminal block and slide in the top cover and screw it up with the screw.



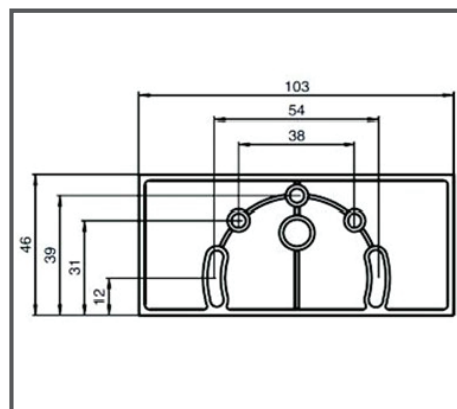
### RAVEN SENSOR (Microwave Motion Sensor)

**Introduction:** Raven Sensor detects moving object based on Microwave technology. This sensor can differentiate between vehicles and pedestrians using two different relay output. Raven Sensor can be integrated with Smart Trigger 2 Input / 2 Output controller either to detect pedestrians or vehicles or both. This sensor can be programmed to sense approach-only, depart-only or bi-directional movement. The other parameters available to configure i.e. sensitivity, responsiveness and relay hold time can either be programmed using Push

### INSTALLATION



**1:** Loosen the Hinge screw (1) to remove the mounting bracket from sensor housing. In the desired location, install the mounting bracket at a height of 23ft/7m or lower.



**2:** Drill mounting holes and attach with the provided screws. The mounting brackets can be installed at an angle (tilted left or right) to shape the detection area.





## BEAM BREAK SENSORS

**Introduction:** The Beam break sensor can be installed in areas where only specific motion is to be detected. The Beam Break sensors comes in 3 different ranges i.e. SENB03KXXX, SENB020HDX and SENB30KXXX. SENB03KXXX and SENB30KXXX are retro-reflective beam break sensor means it has tranceiver and a circular reflector. SENB03KXXX has a sensing range of 3m and SENB30KXXX has sensing range of 30m.



SENB020HDX is 20m range photoelectric receiver/emitter pair. This sensor is a great option for food and beverage application and areas prone to corrosive material contact. This kit requires both emitter and receiver to operate. The emitter can be mounted with the supplied power supply and aimed at receiver. The receiver part of the sensor will be connected with the Smart Trigger 2 Input /

## INSTALLATION

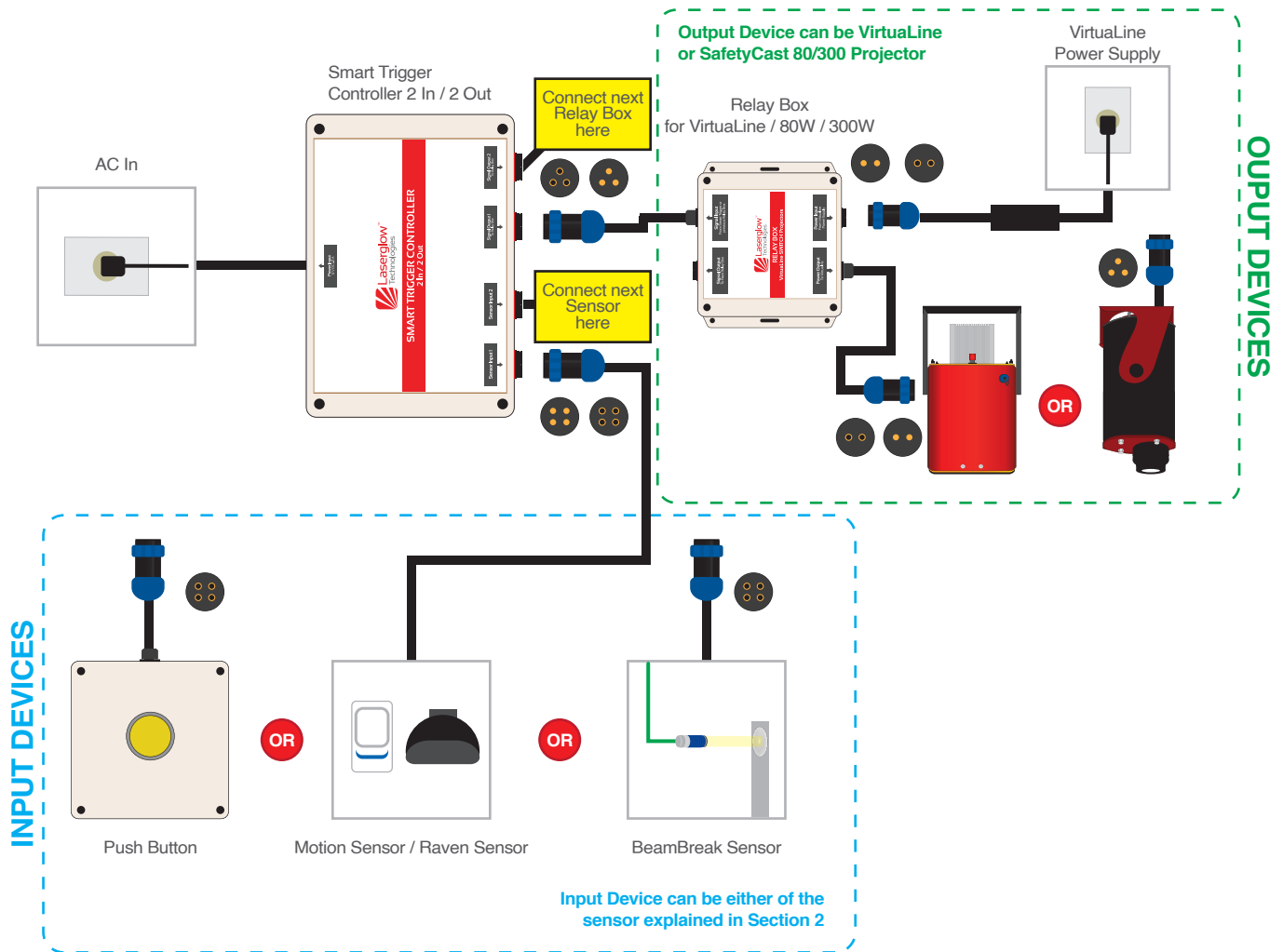
All Beam break sensors comes with M18 X 1 thread on it's barrel body. The beam break sensor can be mounted to a bracket or panel using the 18mm hole cutout.



# Section 3: Installation Examples

## TWO SENSOR CONTROLLING TWO PROJECTORS

Controlling Virtualine or 80W projector or 300W projector using Smart Trigger PRO 2IN 2OUT using Push Button or Raven Sensor or Motion Sensor or Beam Break Sensor.

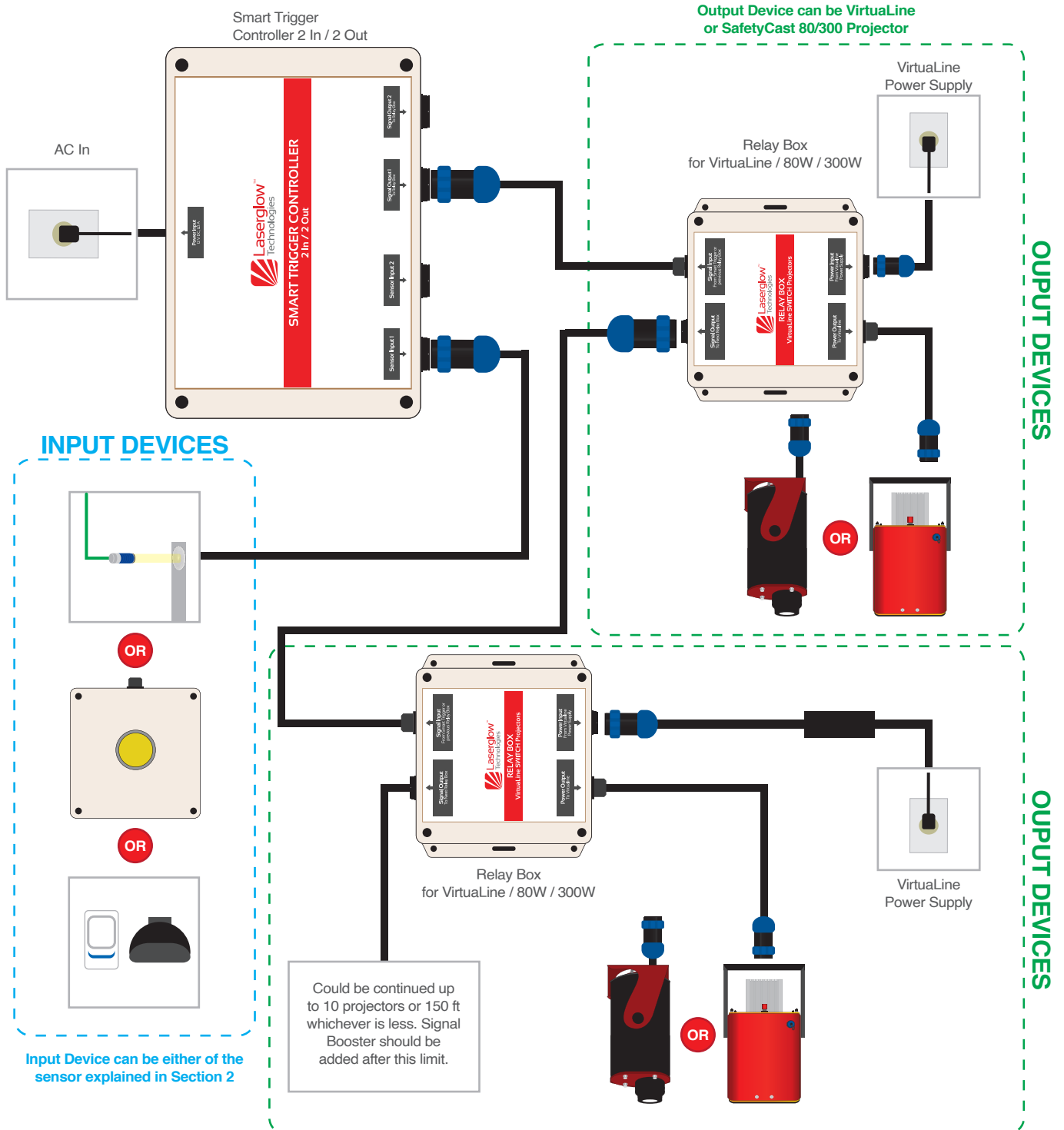


1. Connect the Motion Sensor to the Smart Trigger input.
2. Connect the Relay Box signal input to the Smart Trigger signal output using a signal cable, matching the port number.
4. Repeat steps 1 and 2 for the next set of Input / Output devices.
5. Connect the projector power supply to the Relay Box power input.
6. Connect the projector to the relay box power output.
7. Plug in the projector power supply to a 120V AC outlet.
8. Connect the Smart Trigger power supply to the Smart Trigger power input.
9. Plug in the Smart Trigger power supply to a 120V AC outlet.



### ONE SENSOR CONTROLLING MULTIPLE PROJECTOR (DAISY CHAINING)

Controlling multiple Virtualines or 80W projectors or 300W projectors using Smart Trigger 2 Input / 2 Output using Push Button or Raven Sensor or Motion Sensor or Beam Break Sensor





## Section 4: Smart Trigger Programming

The Smart Trigger provides advanced functionality, but modifying the program and timing can only be done by Laserglow or an authorized distributor. Please contact your sales agent if you would like to reprogram the device.



## Section 5: Warranty Information

### LIMITED PRODUCT WARRANTY

Laserglow Technologies ("Laserglow") warrants that this product is guaranteed to operate within the stated specifications, free from defects in materials and workmanship, for a period of twelve (12) months from the date of delivery. BEFORE RETURNING ANY ITEM FOR SERVICE, PLEASE CONTACT LASERGLOW TO RECEIVE A RETURN AUTHORIZATION (RA) NUMBER. ITEMS RETURNED WITHOUT AN RA NUMBER MAY INCUR DELAYS OR ADDITIONAL FEES.

### LASERGLOW'S PLEDGE TO CORRECT PROBLEMS UNDER WARRANTY

At its option, Laserglow will either repair or replace the in-warranty defective unit without charging the customer for costs of repair or replacement. When parts or products are replaced under warranty the replaced items will automatically become property of Laserglow. Once an item has been repaired or replaced under warranty, the repaired or replacement item assumes the remaining period of warranty based on the original date of delivery, plus the period of time during which the laser was out of the customer's possession. Within North America only, and within the first 30 days of the warranty period, Laserglow will cover the cost of shipping the defective item back to Laserglow and the cost of shipping the repaired/replacement item to the customer. After 30 days, or for overseas shipments, the customer will cover the cost of shipping the defective item back to Laserglow and Laserglow will cover the cost of shipping the repaired/replacement item to the customer. Where Laserglow covers the cost of shipping, the carrier and method of shipping will be at Laserglow's discretion. Items returned to Laserglow as warranty issues, which upon inspection are deemed not to have any defect, will incur a diagnosis service charge of \$119.

### NOT COVERED UNDER THIS WARRANTY

This warranty will become void if any of the following conditions are met:

- The product has been modified or tampered with in any way.
- The product has been dropped or subjected to shock in excess of 100 G.
- The product has been exposed to water, any liquid, or condensing atmospheric humidity.
- The unit was powered from a source other than those which are specified in the instruction manual.
- The unit was operated in an area with ambient temperature outside of the operating temperature range, as stated in the product specifications and instruction manual.
- The serial number or other identifying marks are removed.
- Ownership of the product has changed. (This warranty is not transferable).
- The warranty period has expired.

NEITHER THIS WARRANTY NOR ANY OTHER WARRANTY OR GUARANTY, EXPRESSED OR IMPLIED STATUTORY OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL EXTEND BEYOND THE WARRANTY PERIOD. NO RESPONSIBILITY IS ASSUMED FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, DAMAGES RESULTING FROM PRODUCT MALFUNCTION, INACCURACY, OR MATHEMATICAL INACCURACY OF THE PRODUCT SPECIFICATIONS. NOTHING IN THIS WARRANTY AFFECTS YOUR STATUTORY RIGHTS.



**OTHER BENEFITS (NON-WARRANTY) THAT ARE ACCORDED TO YOU BY LASERGLLOW**

10% Replacement/Upgrade Credit: At any time, for the lifetime of the product, you may return the product to us in any condition, functional or not, for a trade-in credit equal to 10% of the original purchase price or 10% of the current retail price, whichever is less. The new product which you select must be of equal or greater value than the trade-in product, based on the value used to calculate the 10% credit amount.

**Out-of-Warranty Repairs**

The cost of any out-of-warranty repair will be \$100/hr for labor, plus materials.

**Rebuild/Complete Product Refurbishment**

The cost of a complete rebuild or refurbishment of an out-of-warranty product will be no more than 60% of the current retail price.



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