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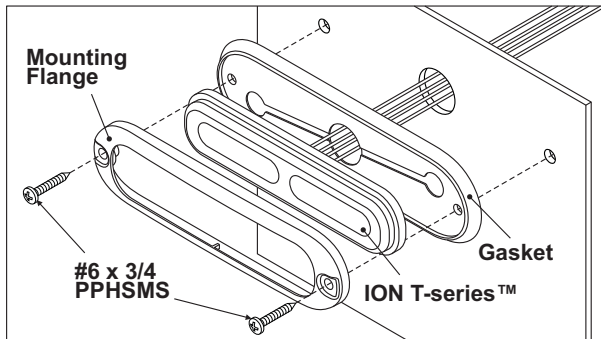
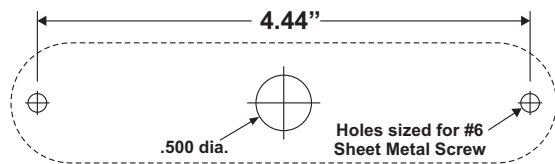
**Safety First:** This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.
- Failure to use specified installation parts and/or hardware will void the product warranty!
- If mounting this product requires drilling holes, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.
- Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.
- For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post.
- If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control to be operated safely in any driving condition.
- Do not attempt to activate or control this device in a hazardous driving situation.
- This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.
- Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.
- WARNING!** All customer supplied wires that connect to the positive (+) terminal of the battery must be sized to supply at least 125% of the maximum operating current and **FUSED** "at the battery" to carry that load. **DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!**
- FAILURE TO FOLLOW THESE PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

**Mounting**

**IMPORTANT! BEFORE MOUNTING READ ALL THE ABOVE WARNINGS FOR MOUNTING, VEHICLE DAMAGE AND WIRE ROUTING.**

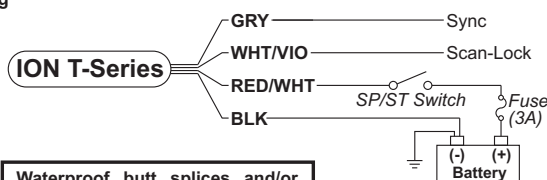
**Hardware Mounting Pattern**



**Hardware Mount**

- Using the mounting dimensions shown, mark the mounting and wire hole locations onto the proposed mounting surface.
- Drill two mounting holes (sized for #6 sheet metal screws and the mounting surface thickness) and a 1/2" wire passage hole into the mounting surface. De-burr wire passage hole before proceeding.
- Route the lighthouse wires through the wire passage hole. Position the ION™ onto its mounting location and place the mounting flange onto the Micron as shown.
- Insert the two supplied #6 sheet metal screws through the flange mounting holes and into the mounting surface. Tighten the mounting screws until the lighthouse assembly is drawn firmly against the mounting surface.
- Using appropriately sized wires (minimum 22 AWG), extend the wires to their designated connections. Refer to the Wiring Diagram for wiring and fusing information.

**Wiring**



**Waterproof butt splices and/or connectors are required if that connection could be exposed to moisture. Any unused wires must be sealed (waterproofed) to prevent moisture infiltration.**

**Ground (BLK)** - Extend the BLK wire to Chassis Ground.

**Warning Light (LED Color)** - Extend the LED wire to +VBAT via an SP/ST switch. Fuse @ 3 AMPS.

**Operation**

**Scan-Lock™ (WHT/VIO)** - To advance to the next pattern, apply +VDC to the WHT/VIO wire for less than 1 second. To cycle backwards, apply +VDC for more than 1 second.

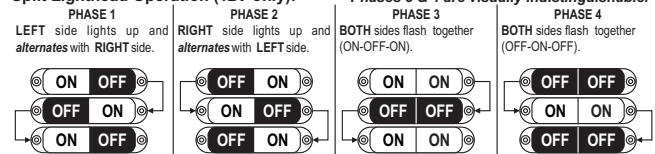
**To reset to the factory default pattern**, turn off power to the lighthouse. While applying +VDC to the WHT/VIO, turn the lighthouse back on. Continue to apply voltage for 5 seconds.

Lighthouses configured to display the Phase 1 mode of a pattern will flash simultaneously. Any lighthouses configured to display the Phase 2 mode will alternate with any Phase 1 lighthouses with the same pattern.

**Sync (GREY)** - To sync two lighthouses, configure both lighthouses to display the same Phase 1 pattern. With the power off, connect the GREY wires from each lighthouse together. When the lighthouses are activated, their patterns will be synchronized. To configure the two lighthouses to alternate their patterns, advance the pattern of either lighthouse to the Phase 2 mode of the current pattern. The same concept applies to Phases 3 & 4.

To understand how to use the sync feature with more than two lighthouses, the principles will be applied to a sample system consisting of 4 lighthouses with 2 mounted on the rear, driver-side and 2 mounted on the rear, passenger-side. With all the wiring complete, turn on all 4 lighthouses. As shipped from factory, the lighthouses will all display SignalAlert™ 75 - Phase 1. To configure one side to alternate with the other side, change the pattern for either the passenger or driver side to Phase 2 mode for that pattern.

**Split Lighthouse Operation (12V only):**



PH 1 = Phase 1 PH 2 = Phase 2

NOTE: **BOLD** = California Title XIII Compliant Pattern *Italic* = SYNC Pattern

1. SignalAlert™ 75	PH 1	24. LongBurst 75	PH 4	47. ModuFlash™	Alt.
2. SignalAlert 75	PH 2	<b>25. PingPong™ 75</b>	<b>PH 1</b>	48. ModuFlash	Sim.
3. SignalAlert 75	PH 3	<b>26. PingPong 75</b>	<b>PH 2</b>	49. DoubleFlash 120	ALT
4. SignalAlert 75	PH 4	<b>27. PingPong 75</b>	<b>PH 3</b>	50. DoubleFlash 120	SIM
5. CometFlash@75	PH 1	<b>28. PingPong 75</b>	<b>PH 4</b>	51. PingPong™ 120	ALT
6. CometFlash 75	PH 2	29. SSNF 75	PH 1	52. PingPong 120	SIM
7. CometFlash 75	PH 3	30. SSNF 75	PH 2	53. TripleFlash™ 75	ALT
8. CometFlash 75	PH 4	31. SingleFlash 60	Alt.	54. TripleFlash 75	SIM
<b>9. DoubleFlash 75</b>	<b>PH 1</b>	32. SingleFlash 60	Sim.	55. TripleFlash 120	ALT
<b>10. DoubleFlash 75</b>	<b>PH 2</b>	33. SingleFlash 90	Alt.	56. TripleFlash 120	SIM
<b>11. DoubleFlash 75</b>	<b>PH 3</b>	34. SingleFlash 90	Sim.	57. SigAlert Cal.™	ALT
<b>12. DoubleFlash 75</b>	<b>PH 4</b>	35. SingleFlash 120	Alt.	58. SigAlert Cal.	SIM
<b>13. SingleFlash 75</b>	<b>PH 1</b>	36. SingleFlash 120	Sim.	59. Action SF 60/120	ALT
<b>14. SingleFlash 75</b>	<b>PH 2</b>	37. SingleFlash 300	Alt.	60. Action SF 60/120	SIM
<b>15. SingleFlash 75</b>	<b>PH 3</b>	38. SingleFlash 300	Sim.	61. Action SF60/TF120	ALT
<b>16. SingleFlash 75</b>	<b>PH 4</b>	39. DoubleFlash 150	Alt.	62. Action SF60/TF120	SIM
17. ComAlert™ 75	PH 1	40. DoubleFlash 150	Sim.	63. CalScan™ (ALT/SIM)	ALT
18. ComAlert 75	PH 2	41. ComAlert™ 150	Alt.	64. ActionScan™ (ALT/SIM)	ALT
19. ComAlert 75	PH 3	42. ComAlert 150	Sim.	65. SteadyFlash 60	ALT
20. ComAlert 75	PH 4	43. ActionFlash™ 50	Alt.	66. SteadyFlash 75	ALT
21. LongBurst™ 75	PH 1	44. ActionFlash 50	Sim.	67. SteadyFlash 90	ALT
22. LongBurst 75	PH 2	45. ActionFlash 150	Alt.	68. SteadyFlash 120	ALT
23. LongBurst 75	PH 3	46. ActionFlash 150	Sim.	69. Steady & Steady	ALT

**IMPORTANT!** It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere or compromise the operation or efficiency of any vehicle equipment!

Before returning the vehicle to active service, visually confirm the proper operation of this product, as well as all vehicle components and/or equipment.

## **Warnings to Installers**

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that he can operate the system without taking his eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. **PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.**

## **Warnings to Users**

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.