

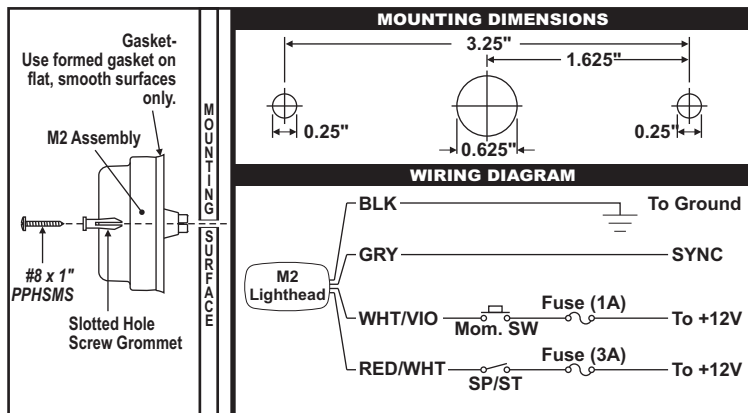
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**Safety First:** This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator 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.
- Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.
- 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**

1. Using the dimensions below, mark the mounting and wire hole locations onto the proposed mounting surface.
2. Drill two, .250" diameter mounting holes and a .625" (minimum) wire access hole into the mounting surface.
3. Place the gasket into position on the rear of the M2 assembly. Insert the slotted hole screw grommet through the mounting holes on the M2/Gasket assembly.
4. Feed the M2 wires through the wire access hole in the mounting surface. Press the M2/Gasket/Grommet assembly onto its mounting location so that it is flat against the mounting surface.
5. With the assembly in position and using the hardware provided, tighten the mounting screws until the lighthouse assembly is drawn firmly against the mounting surface. **DO NOT OVERTIGHTEN!**
6. Using appropriately sized wires (minimum 18 AWG), extend the M2 wires to their designated connections. Refer to the diagram below for wiring and fusing information.



**Wiring**

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!**

**Power (RED/WHT)** - Extend the RED/WHT wire to +12VDC (see diagram).

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

**SYNC (GREY)** - To SYNC lighthoods, configure each lighthouse to display the same Phase 1 pattern (see pattern list below). Turn power off and connect the GREY wire from each lighthouse together. Activate the lighthoods and their patterns will be synchronized. To configure specific lighthoods so that their patterns alternate, advance those lighthoods to Phase 2 of the current pattern.

If the SYNC feature is not used, the GREY wire should be capped and insulated.

**Scan-Lock™ (WHT/VIO)** - Extend the WHT/VIO wire to a customer supplied momentary switch (fuse @ 1 amp). Refer to the Scan-Lock section for operational information.

**Scan-Lock**

Note: In order to change flash patterns, the lighthouse must be on.

**TO CHANGE PATTERNS:** To advance to the next pattern apply +12VDC to the WHT/VIO wire for less than 1 second and release. To cycle back to the previous pattern apply +12VDC to the WHT/VIO wire for more than 1 second and release.

**TO CHANGE THE DEFAULT PATTERN:** When the desired pattern is displayed, allow it to run for more than 5 seconds. The lighthouse will now display this pattern when initially activated.

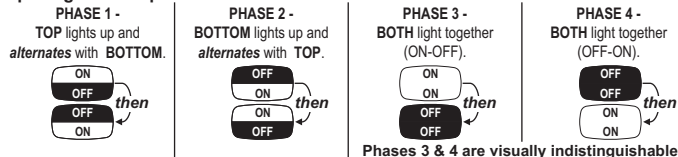
**TO RESTORE THE FACTORY DEFAULT PATTERN:** This will reset all patterns back to their default settings. With the light turned off, apply power to the WHT/VIO wire. With power applied to the WHT/VIO wire, turn light on. Allow the unit to run for 3 seconds before removing power from the WHT/VIO wire.

A normally open, momentary switch should be used to control Scan-Lock operation.

**Flash Patterns:**

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

**Split Lighthouse Operation:**



Note: SYNC-capable LED lighthoods can be used with a SYNC-capable strobe power supply (such as the CS240S or UPS64LXA) by wiring their GREY wires together. When connected, LED lighthoods in Phase 1 of a pattern will flash **simultaneously** with strobe lighthoods connected to the GREEN wire outputs. LED lighthoods set to Phase 2 of a pattern will **alternate** with strobe lighthoods connected to the WHITE wire outputs. GREEN wire outputs always alternate with WHITE wire outputs.

**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.

**IMPORTANT WARNING!**  
**CAUTION! DO NOT LOOK DIRECTLY AT THESE LEDS WHILE THEY ARE ON. MOMENTARY BLINDNESS AND/OR EYE DAMAGE COULD RESULT!**

## **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.