

# WHELEN<sup>®</sup>

## ENGINEERING COMPANY INC.

51 Winthrop Road  
Chester, Connecticut 06412-0684  
Phone: (860) 526-9504  
Fax: (860) 526-4078  
Internet: [www.whelen.com](http://www.whelen.com)  
Sales e-mail: [autosale@whelen.com](mailto:autosale@whelen.com)  
Canadian Sales e-mail: [canadiansales@whelen.com](mailto:canadiansales@whelen.com)  
Customer Service e-mail: [custserv@whelen.com](mailto:custserv@whelen.com)

### Installation Guide: Responder<sup>®</sup> DX Series

#### 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.

#### 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 the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro<sup>®</sup>, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **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 (this does not include products that use cigar power cords).**
- **If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device 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.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

The Responder® DX Series, which includes Models R2DX, R3DX, R4DX, R5DX and R6DX uses a base design that enables deck, permanent or magnetic (optional) mounting.

#### Installation: Permanent Mount

1. Check to make sure that no vehicle components will interfere with the selected mounting location of this unit.
2. Remove the outer lens by unscrewing the four Phillips Pan Head screws shown in Fig. 1. Position the Responder on the proposed mounting location. Using an awl or other suitable tool, scribe the mounting surface where the mounting holes are to be drilled.

**Caution:** Mounting the Responder will require drilling. It is absolutely necessary to make sure that no other vehicle components will be damaged in the process. Check both sides of the mounting surface before starting and if damage is possible, select a different mounting location.

3. Drill the mounting holes in the areas scribed in step 2. The diameter of these holes will be determined by the size of the mounting hardware (#10 x 1") and the thickness of the mounting surface.
4. Using the supplied #10 x 1" Phillips Pan Head Sheet Metal Screws, secure the Responder to the mounting location and remount the lens in its original location.

**IMPORTANT:** The outer surfaces of this product may be cleaned with mild soap and water. Use of any other chemicals may void product warranty. Do not use a pressure washer.

#### Removing the Halogen Bulb (R2-, R3- & R4DX):

1. Remove the outer lens as outlined previously. Insert a flat-blade screw driver into the space between the lamp holder and the snap-in assembly. Gently rotate the screw driver as shown in Fig. 2. Repeat this action until the bulb is loose. Pull the bulb in an upward direction until it is free.
2. Verify that the replacement bulb is the correct wattage by the part numbers marked on the bulb assembly (see "Part Numbers"). Insert the alignment tab of the new bulb into the lamp holder and press downwards to lock the bulb into place.

#### Replacing the Strobe Assembly (R5DX-only):

**NOTE:** Do not begin this procedure unless the R6DX has been disconnected from power for at least 10 minutes!

1. Remove the outer lens as outlined previously and disconnect the strobe assembly from its power supply.
2. Using a Phillips screwdriver, remove the retaining ring from the strobe assembly.
3. Remove the lens and lift the strobe assembly away from the base. Disconnect the strobe tube assembly from the harness plug.
4. Reverse this procedure to install the new assembly.

#### Replacing the Strobe Assembly (R6DX-only):

**NOTE:** Do not begin this procedure unless the R6DX has been disconnected from power for at least 10 minutes!

1. Remove the outer lens as outlined previously and disconnect the strobe assembly from its power supply.
2. Unscrew the lens from the strobe assembly base. Locate and remove the two strobe assembly mounting screws from the strobe assembly base.
3. Reverse this procedure to install the new assembly.

#### Wiring to Power:

1. Install an SP/ST switch (customer supplied) onto the RED wire. Using appropriately sized wires, extend the RED and BLACK wires to the battery.

**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!

2. Connect the BLACK wire directly to the vehicle's chassis ground (typically adjacent to the battery).
3. Connect the RED wire to one end of the user supplied fuse block (see table for the correct fuse application for your specific model). After the fuse block is in place, connect the RED wire to the POSITIVE(+) terminal of the battery.

After this connection has been made, inspect the circuit wires and make sure they are wired correctly. Replace the fuse if blown with one of an identical amp. rating as the original. If the fuse blows after installation or activation, contact Whelen Engineering Technical Support.

#### Low Power Control Wire / VIOLET (R6DX-only)

The type of switch used is dependant on how the operator wishes the Hi/Low feature to function:

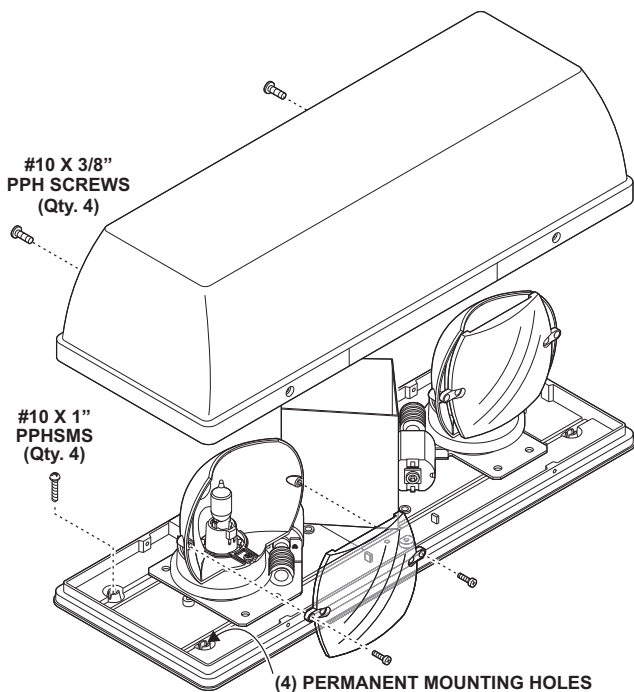
**Latching Mode:** By applying +voltage to the Violet wire for less than 1 sec., the power supply is "latched" into low power operation. The unit must be turned off and then back on to restore normal, Hi power operation. A momentary switch is desired for this.

**Level Mode:** Applying +voltage to the Violet wire for more than 1 sec. holds the power supply in low power mode until that voltage is removed. A toggle switch is desired for this.

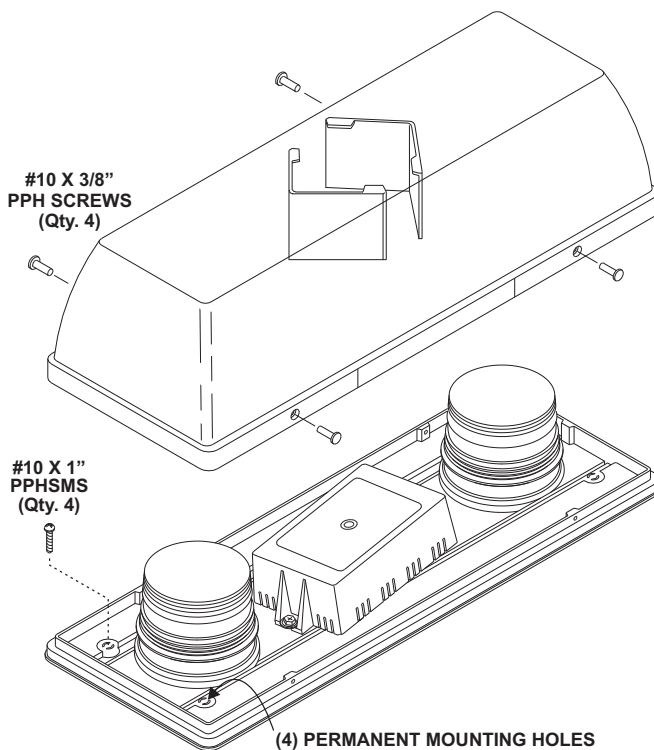
#### Pattern Selection Wire / WHITE (R6DX-only)

A momentary application of +12VDC (less than 1 second) to the WHITE wire will cause the power to change the default flash pattern to the next available pattern. If the new pattern is active for more than 1 second, it will become the new default pattern. A momentary application of +12VDC (more than 1 second) will cause the power supply to change the default flash pattern to the previous available pattern. If +12VDC is applied to this wire when the unit is powered up, the default flash pattern will revert to the factory default setting (CometFlash®).

**Fig. 1 R2DX Shown for reference only**



**R6DX Shown for reference only**



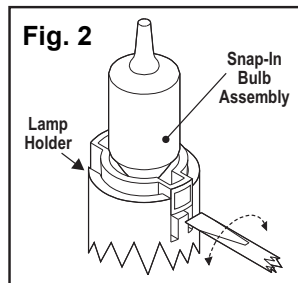
MODEL	VOLTAGE	AVERAGE CURRENT	LAMP TYPE	FUSE "at the battery"
R2DX	12 VDC	6a @ 13.5 VDC	35 Watt Halogen	10 amp
R3DX	12 VDC	8.75a @ 13.5 VDC	35 Watt Halogen	10 amp
R4DX	12 VDC	8.25a @ 13.5 VDC	35 Watt Halogen & Strobe Flash Tube	10 amp
R5DX	12/24 VDC	3.5a @ 13.5 VDC	Strobe Flash Tube	5 amp
R6DX	12 VDC	2.6a @ 13.5 VDC	Strobe Flash Tube	5 amp

**Part Numbers**

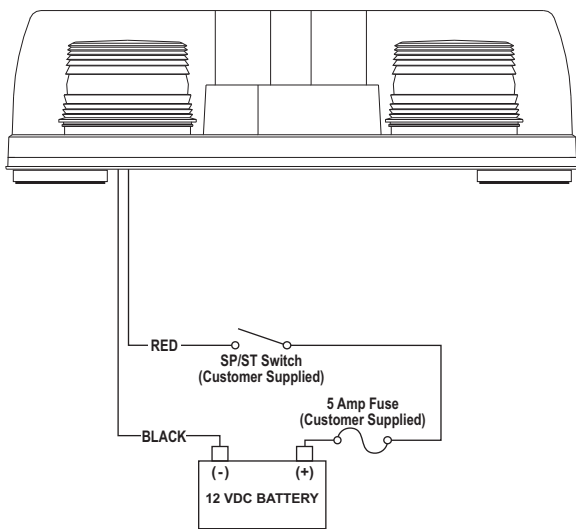
- Snap-in Bulb Assembly (12V-35 Watt)..... H35SN12
- Snap-in Bulb Assembly (24V-35 Watt)..... H35SN24

**CAUTION:** Replacing any halogen bulb requires the use of safety glasses to prevent injury. Do not handle the bulb with bare hands. Use gloves to prevent possible injury.

**WARNING: DO NOT INSTALL BULBS EXCEEDING 35 WATTS.**



**R6DX Wiring (Magnetic Mount)**



**R6DX Wiring (Permanent Mount)**

