

WHELEN[®]

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Installation Guide:
Model ISP8HS
Halogen/Strobe Power Supply

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 they can operate the system without taking their 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.

⚠ WARNING: This product can expose you to chemicals including Lead which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- **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 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®, 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).**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **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!**

Selecting a Mounting Location . . .

The most common choice for a mounting area would be a trunk or similar compartment. However, due to the wide variety of vehicles onto which the unit could be installed, this is not always possible. The following guidelines will help the installer select an acceptable alternative:

- A) The power supply should be mounted on a metal surface to aid heat dissipation. Be sure that this surface is not one that either generates or is exposed to excessive heat during normal operation of the vehicle.
- B) Do not select a location where the unit will be exposed to potential damage from any unsecured or loose equipment in the vehicle.
- C) Be sure the area selected will not allow the unit to be exposed to water!
- D) When routing the power supplies wires, it is important to choose a path that will keep these wires away from excessive heat and from any vehicle equipment that could compromise the integrity of the wires (ex. trunk lids, door jams, etc.).
- E) When the best mounting location has been determined, securely fasten the unit to it's mounting surface using the supplied hardware.

WARNING: The Strobe Light Power Supply is a high voltage device. Do not touch or remove tube assembly in strobe light head assemblies while in operation. Wait 10 minutes after disconnecting the unit from its power source before starting work or troubleshooting on power supply or system.

Caution: As it will be necessary to drill holes into the mounting surface, 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!

Mounting your ISP8HS . . .

1. Position the ISP8HS in its proposed mounting location to ensure that it fits properly. With the unit in place, insert an awl or other suitable tool into the mounting screw area of the power supply and scribe the areas to be drilled.
2. Remove the unit from its mounting area and, using a drill bit sized for a #10 sheet metal screw, drill a hole in each of the areas scribed in the previous step.
3. Return the power supply to its mounting location and using the supplied #10 sheet metal screws, mount the unit onto its mounting surface.

Wiring your ISP8HS . . .

1. Locate the 2 screw terminals on the halogen end of the ISP8HS. Using appropriately sized, customer supplied wires and connectors, connect the NEGATIVE (-) terminal to the vehicles chassis ground. This is typically adjacent to the NEGATIVE (-) battery terminal (see table on page 3 for wire sizing guidelines).

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 POSITIVE (+) terminal to a fuse block (customer supplied) and then to the POSITIVE terminal on the battery. There should not be more than two (2) feet of wire between the fuse block and the battery terminal.

NOTE! Although a 50 amp fuse (customer supplied) is required to be used in the fuse block, do not install the fuse until all wire connections are completed.

3. Refer to diagram on page 3 for wiring information for the remaining *Switch Control Wires* and *Pattern Control Wires*.
4. Refer to the following page for dip switch functionality information.

Dip Switch Functionality. . .

The default setting for each dip switch is the "on" position EXCEPT for dip switch 4. The position for this switch can be determined by the user, based on the following information:

With Dip Switch 4 - OFF . . .

Control Wires

In this configuration, applying +12VDC to the control wires will activate the following outlets in an alternating style:

- Control Wire #1** = Strobe Outlets 1 & 4
- Control Wire #2** = Strobe Outlets 2 & 3
- Control Wire #3** = Strobe Outlets 5 & 8
- Control Wire #4** = Strobe Outlets 6 & 7
- Control Wire #5** = Halogen Outlets 1 & 4
- Control Wire #6** = Halogen Outlets 2 & 3
- Control Wire #7** = Halogen Outlets 5 & 8
- Control Wire #8** = Halogen Outlets 6 & 7

With Dip Switch 4 - ON . . .

Control Wires

In this configuration, applying +12VDC to the control wires will activate the following outlets in an simultaneous style:

- Control Wire #1** = Strobe Outlets 1 & 4
- Control Wire #2** = Strobe Outlets 2 & 3
- Control Wire #3** = Strobe Outlets 5 & 8
- Control Wire #4** = Strobe Outlets 6 & 7
- Control Wire #5** = Halogen Outlets 1 & 4
- Control Wire #6** = Halogen Outlets 2 & 3
- Control Wire #7** = Halogen Outlets 5 & 8
- Control Wire #8** = Halogen Outlets 6 & 7

Section 3:Hi/Lo Power

To enable Lo power operation, +12VDC is applied to control wire 9 via a customer supplied, normally off, momentary switch.

To restore Hi power operation, activate the same momentary switch.

Section 4:Diagnostix™ (Optional)

The optional Diagnostix™ display allows the operator to confirm proper operation of not only the 16 outlets on the ISP8HS, but of the light head and cable connected to these outlets as well. Each LED indicator on the Diagnostix™ display, provides diagnostic information for two outlets.

NOTE: The following page includes a table with information on which outlets are monitored by a given LED.

The Diagnostic LED's provide different information based on their state:

LED off

The outlets in question are not enabled or the ISP8HS is not turned on.

LED on

The outlets, cables and lighthead are functioning properly.

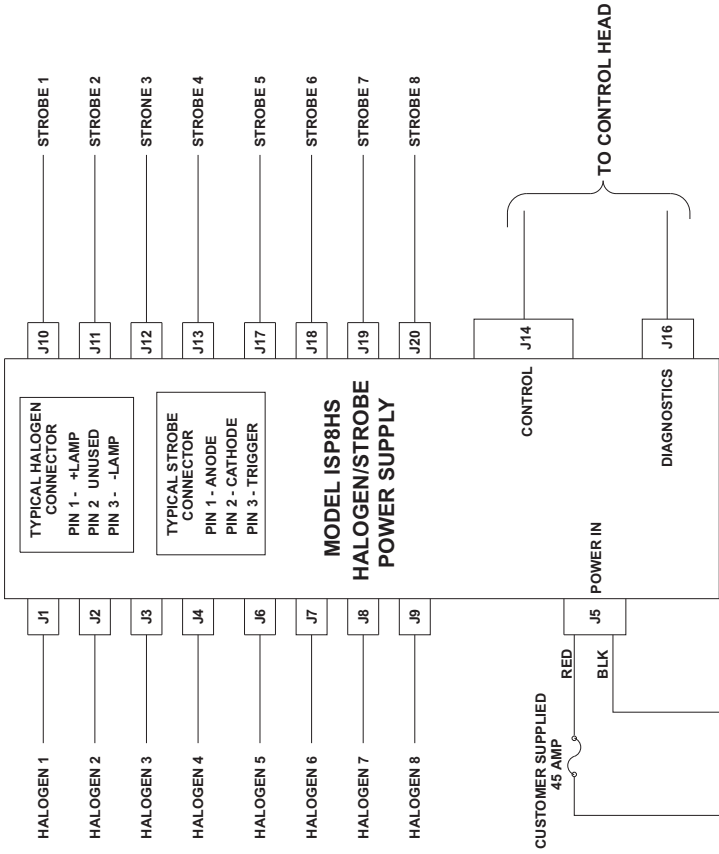
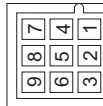
STROBE SPECIFICATIONS

INPUT VOLTAGE — 12.8 VDC ±20%
 INPUT CURRENT
 2 STROBES — 4.5 AMPS (TYP)
 4 STROBES — 9 AMPS (TYP)
 6 STROBES — 13.5 AMPS (TYP)
 8 STROBES — 18 AMPS (TYP)
 INPUT POWER — 230 WATTS (TYP)
 ANODE VOLTAGE — 450 VDC (MAX)
 TRIG. VOLTAGE — 150 VDC (MIN)
 ENERGY (PER FLASH) — 7.9, 3.8/3.8 JOULES
 F FLASHRATE (S1-S4) — 440 SFPM
 F FLASHRATE — 440 SFPM
 R FLASHRATE — 440 SFPM
 OUTPUT POWER — 22.5 WATTS (TYP)
 (PER OUTPUT)

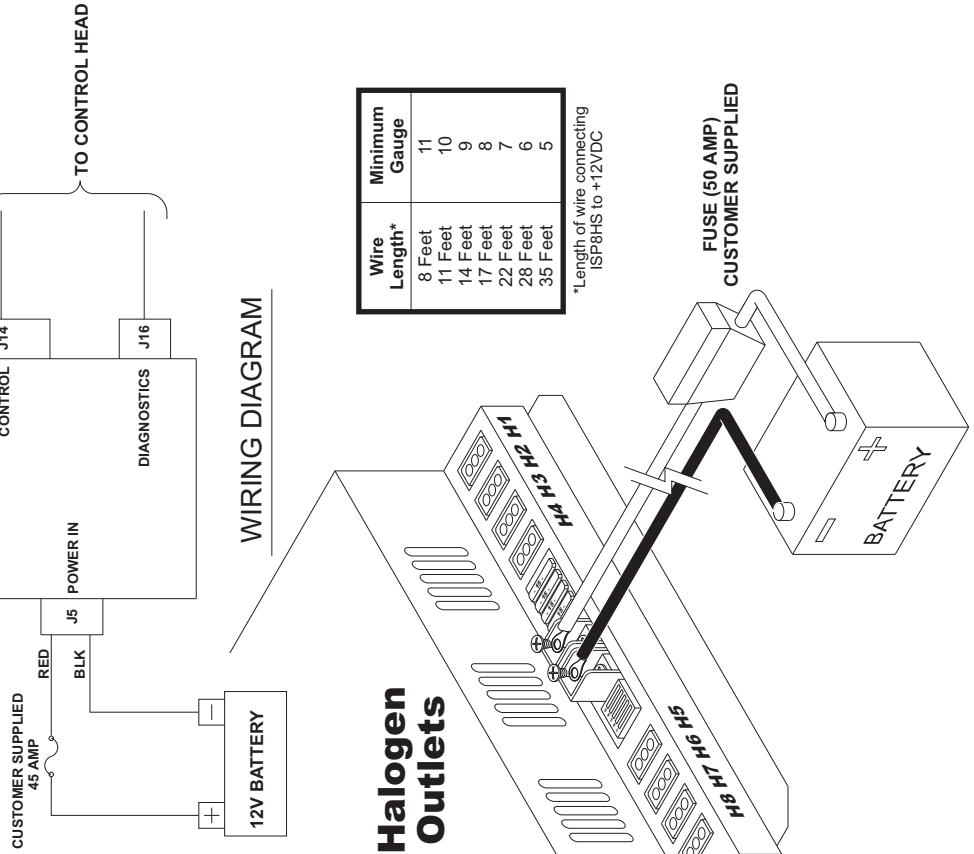
HALOGEN SPECIFICATIONS

INPUT VOLTAGE — 12.8 VDC ±20%
 INPUT CURRENT
 2 LAMPS — 4.5 AMPS (MAX)
 4 LAMPS — 9 AMPS (MAX)
 6 LAMPS — 13.5 AMPS (MAX)
 8 LAMPS — 18 AMPS (MAX)
 INPUT POWER — 230 WATTS (MAX)
 OUTPUT VOLTAGE — INPUT VOLTAGE - 1V
 ON TIME — 125 mS (TYP)
 OFF TIME — 125 mS (TYP)
 FLASHRATE — 120 DPFM ±5%
 OUTPUT POWER — 50 WATTS (MAX)
 (PER OUTPUT)

- 1 BROWN
- 2 WHITE/BLACK
- 3 ORANGE
- 4 YELLOW
- 5 GREEN
- 6 BLUE
- 7 VIOLET
- 8 GREY
- 9 WHITE



WIRING DIAGRAM



Wire Length*	Minimum Gauge
8 Feet	11
11 Feet	10
14 Feet	9
17 Feet	8
22 Feet	7
28 Feet	6
35 Feet	5

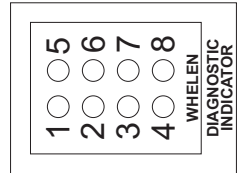
*Length of wire connecting ISP8HS to +12VDC

FUSE (50 AMP)
 CUSTOMER SUPPLIED

Halogen Outlets

Strobe Outlets

Diagnostic Indicator	Outlets Monitored
1	S1 & S4
2	H1 & H4
3	H5 & H8
4	S5 & S8
5	S2 & S3
6	H2 & H3
7	H6 & H7
8	S6 & S7



(Optional Diagnostic Indicator)