

WHELEN[®]

ENGINEERING COMPANY INC.

Route 145, Winthrop Road,
Chester, Connecticut 06412

Phone: (860) 526-9504

Fax: (860) 526-4078

Internet: www.whelen.com

Sales e-mail: autosale@whelen.com

Canadian Sales e-mail: autocan@whelen.com

Customer Service e-mail: custserv@whelen.com

Installation Guide: UPS158A Strobe Power Supply

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.**
- **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.**
- **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 owners 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.**
- **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!**

For warranty information regarding this product, visit www.whelen.com/warranty

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 UPS158A could be installed, this is not always possible. The following guidelines will help the installer select an acceptable alternative:

- **The UPS158A 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.**
- **Do not select a location where the unit will be exposed to potential damage from any unsecured or loose equipment in the vehicle.**
- **Be sure the area selected will not allow the unit to be exposed to water.**
- **When routing the 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.).**

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 on the power supply or system.

WARNING! 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.

1. Position the UPS158A 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 that are 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 unit to its mounting location and using the supplied #10 sheet metal screws, mount the power supply onto its mounting surface.

Wiring:

1. Locate the two, 3 position Power Connectors included and plug them into their respective ports (fig. 1). Splice the two RED wires together and extend to the the vehicle battery (see Wire Gage chart on the last page for wire size 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 extended wire to a fuse block (customer supplied) and then to the POSITIVE terminal on the battery.

Note: Although a 30 amp fuse (customer supplied) is required to be used in the fuse block, do not install the fuse until all of the wire connections are completed.

3. Splice the two BLACK wires together and extend to the vehicle battery. Connect the extended wire (same gage as determined for the RED wire) to the factory chassis ground typically adjacent to the battery.
4. Refer to Fig. 2 for wiring information for the Control Connectors and for the Pattern Selection Connectors.
5. As shown in Fig. 2, there is a provision in the Power Connectors for a wire (VIOLET) to activate Hi Power/Low Power strobe operation. If this feature is desired, locate the VIOLET wires included with your power supply and, with the Power Connectors disconnected from the power supply, insert the pinned end of the VIOLET wires into position 3 of each of the Power Connectors. Refer to Fig. 2 for wiring information.

Scan-Lock™ Operation...

To cycle forward through the patterns, apply +12VDC to the WHT/VIO wire for less than 1 second and release to cycle forward. Apply +12VDC for more than 1 second and release to cycle backward.

To set a pattern as default, allow it to run for more than 5 seconds. The lighthead will now display this pattern when active.

To reset to the Factory Default pattern: Turn off power. While applying +12VDC to the WHT/VIO wire, turn power back on.

Available Scan-Lock™ Patterns (in order) -

- | | |
|-----------------|--------------------|
| 1) CometFlash® | 6) ModuFlash™ |
| 2) TripleFlash™ | 7) MicroBurst II™ |
| 3) DoubleFlash | 8) MicroBurst III™ |
| 4) RapidRate™ | 9) LongBurst™ |
| 5) ActionFlash™ | 10) ActionScan™ |

Sync Operation...

NOTE! Synchronized power supplies should be configured to flash the same pattern.

If desired, the user may Sync the "A" and "B" outlets by connecting the GREY wires together (see wiring diagram).

When synchronized, all strobes connected to outlets 1A, 3A, 1B & 3B will alternate with all strobes connected to outlets 2A, 4A, 2B & 4B.

Hi/Lo Operation...

The type of switch used to activate Hi/Lo operation is dependant on how the operator wishes the Hi/Lo 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 style.

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 style.

Switch Operation Table

Control Lines...	Activates...
1A & 4A	Outlets 1A & 4A
2A & 3A	Outlets 2A & 3A
1B & 4B	Outlets 1B & 4B
2B & 3B	Outlets 2B & 3B

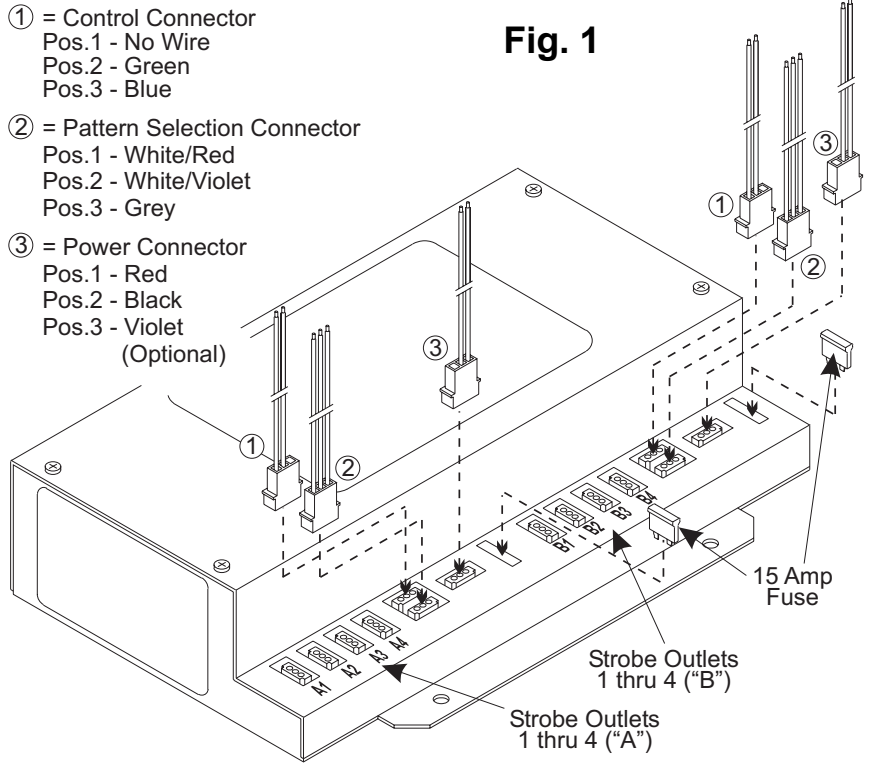
OUTLETS 1A/1B & 4A/4B = FLASH ALTERNATELY
 OUTLETS 2A/2B & 3A/3B = FLASH ALTERNATELY
 OUTLETS 1A/1B & 3A/3B = FLASH SIMULTANEOUSLY
 OUTLETS 2A/2B & 4A/4B = FLASH SIMULTANEOUSLY

UPS158A Specifications

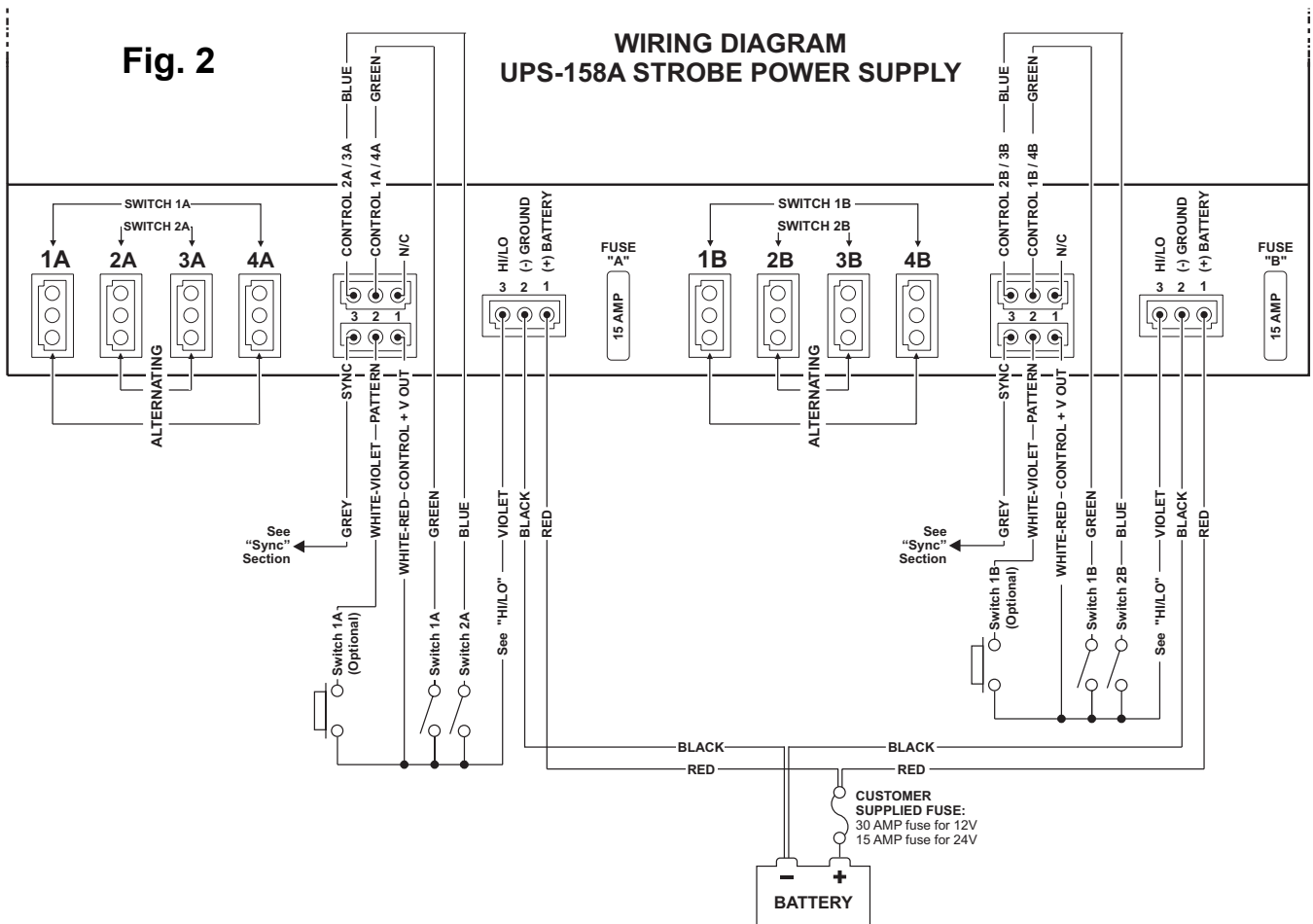
INPUT VOLTAGE: 12.8 VDC / 25.6VDC ± 20%

POWER RATING: 40 WATTS @ 2 LAMPS
 75 WATTS @ 4 LAMPS
 115 WATTS @ 6 LAMPS
 150 WATTS @ 8 LAMPS

INPUT CURRENT: 14 AMPS @ 12.8 VDC
 8 AMPS @ 25.6 VDC



NOTE! The WHITE/RED wire in the Pattern Selection Connector provides positive voltage designed to be used to supply power to your switches. This wire is internally protected to 250 ma. If a short circuit occurs, the circuit will interrupt current flow until the short has been removed.



Wire Gauge Calculation Chart

		Wire Gage (AWG)										
		22	20	18	16	14	12	10	8	6	4	2
Current Draw (AMPS)	5	6	9.5	15	24.5	39	62	98	156	248	395	629
	10	3	5	7.5	12	19.5	31	49	78	124	197	314
	15	INS.	3	5	8	13	20.5	32.5	52	82.5	131	209
	20	INS.	INS.	4	6	9.5	15.5	24.5	39	62	98.5	157
	25	INS.	INS.	3	5	8	12.5	19.5	31	49.5	79	125
	30	INS.	INS.	INS.	4	6.5	10.5	16.5	26	41.5	66	104
	35	INS.	INS.	INS.	3.5	5.5	9	14	22.5	35.5	56.5	89.5
	40	INS.	INS.	INS.	3	5	7.5	12.5	19.5	31	49.5	78.5
	45	INS.	INS.	INS.	INS.	4.5	7	11	17.5	27.5	44	69.5
	50	INS.	INS.	INS.	INS.	4	6	10	15.5	25	39.5	63
	55	INS.	INS.	INS.	INS.	3.5	5.5	9	14	22.5	36	57
	60	INS.	INS.	INS.	INS.	3	5	8	13	20.5	33	52.5
	65	INS.	INS.	INS.	INS.	3	5	7.5	12	19	30.5	48.5
	70	INS.	INS.	INS.	INS.	3	4.5	7	11	17.5	28	45
	75	INS.	INS.	INS.	INS.	INS.	4	6.5	10.5	16.5	26.5	42
	80	INS.	INS.	INS.	INS.	INS.	4	6	10	15.5	24.5	39
	85	INS.	INS.	INS.	INS.	INS.	3.5	6	9	14.5	23	37
	90	INS.	INS.	INS.	INS.	INS.	3.5	5.5	8.5	14	22	35
	95	INS.	INS.	INS.	INS.	INS.	3.5	5	8	13	21	33
	100	INS.	INS.	INS.	INS.	INS.	3	5	8	12.5	19.5	31.5

INS. = Insufficient All Distances Shown Are In Feet

To use this chart...

1. Determine the amount of current being drawn through the wire. Locate this number in the vertical left-hand column. If the current value is between adjacent values, use the higher number.

2. Follow this row until the length of the installed wire is shown. If the exact length is between adjacent values, use the higher number. Follow this column upwards to find the recommended size (gage) for this wire.

In the example shown below, the size for a wire with an installed length of 36 feet, through which 22 amps of current will be drawn, must be determined.

A row for 22 amps is not shown, so the row for 25 amps will be used. Follow this row to the right. A column for 36 feet is not show, so the column for 49.5 feet will be used. Following this column to the top will show that the size of this wire must be at least 6 gage.