

WHELEN[®]

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Installation Guide: Strobe Light Power Supply Model UPS12180

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 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.**
- **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

This UPS12180 strobe power supply can be installed in many different types of vehicles. The guidelines for installation are written so that no matter what vehicle is being used, the installation and operation of the UPS12180 will be simple and straight forward.

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 UPS12180 could be installed, this is not always possible. The following guidelines will help the installer select an acceptable alternative:

- A) The UPS12180 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 UPS12180 will be exposed to potential damage from unsecured or loose equipment in the vehicle.
- C) Do not allow the UPS12180 to be exposed to water!
- D) When routing the UPS12180's 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 (example: trunk lids, door jams, etc.).

WARNING: The strobe light power supply is a high voltage device. Do not remove strobe tubes or dismantle strobe light head assemblies in the system while it is in operation. Wait 10 minutes after turning off power before starting work or any trouble shooting.

Caution: Permanent mounting of this product will require drilling. It is absolutely necessary to make sure that no other vehicle components could be damaged by this process. Check both sides of the mounting surface before starting. If damage is likely, select a different mounting location.

Mounting your UPS12180:

1. Position the UPS12180 in its proposed mounting location to ensure that it fits properly. With the UPS12180 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 UPS12180 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 UPS12180 to its mounting location and using the supplied #10 sheet metal screws, mount the unit onto the mounting surface.

Wiring your UPS12180:

Note: The UPS12180 essentially functions as two, independently wired and operated power supplies. The wiring details that follow will demonstrate how to make all the necessary connections for one set of outlets and controls. The same guidelines will apply for both sets.

1. Locate the 10 position **Input Connector** included with your UPS12180 and plug it into the port indicated in Fig. 1. Extend the BLACK and RED wires from the **Input Connector** towards the battery (see wire gauge table on page 3 to determine proper wire size).

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 RED 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. Connect BLACK wire to factory chassis ground adjacent to battery.
4. Refer to Fig. 2 for wiring information for the remaining **Switch Control Wires** and **Pattern Control Wires**.
5. As indicated in Fig. 2, there is a provision in the **Input Connector** for a wire (VIOLET) to activate Hi Power/Low Power

strobe operation. If this feature is desired, locate the VIOLET wire included with your power supply and, with the **Input Connector** disconnected from the power supply, insert the pinned end of the VIOLET wire into position 4 of the **Input Connector**. Refer to the Wiring Diagram on page 3 for wiring information.

Configuring your UPS12180:

Although the wiring diagram illustrates the proper switch connections for the UPS12180, an explanation of how the switches are configured is necessary. It is also necessary to understand how the dip switch positions will impact the operation of the UPS12180. The following section will explain switch functionality in the DEFAULT configuration (all dip switches in the OFF position and all strobe switches wired as illustrated).

Strobe Switches:

Switch #1 (SW1) -

In the default configuration, switch #1 controls outlets 1 & 2. The control wire for switch #1 is the BLUE wire.

Switch #2 (SW2) -

In the default configuration, switch #2 controls outlets 3 & 4. The control wire for switch #2 is the GREEN wire.

Switch #3 (SW3) -

In the default configuration, switch #3 controls outlets 5 & 6. The control wire for switch #3 is the YELLOW wire.

Dip Switches:

Dip Switch #1 (Progressive Outlet Control):

OFF (Default position) - In this position, the strobe switches are configured as indicated in the "Strobe Switches" section above.

Example: SW1 = Enables outlets 1 & 2
SW2 = Enables outlets 3 & 4
SW3 = Enables outlets 5 & 6

ON - In this position, Progressive Outlet Control is enabled.

Example: SW1 = Enables outlets 1 & 2
SW2 = Enables outlets 1, 2, 3 & 4
SW3 = Enables outlets 1, 2, 3, 4, 5 & 6

Dip Switch #2 (Alternating vs. Simultaneous):

OFF (Default position) - In this position, the strobe switches are configured as follows:

Example: SW1 = Outlets 1 & 2 alternate flashing
SW2 = Outlets 3 & 4 alternate flashing
SW3 = Outlets 5 & 6 alternate flashing

ON - In this position, Simultaneous Outlet Control is enabled.

Example: SW1 = Outlets 1 & 3 flash simultaneously
SW2 = Outlets 2 & 4 flash simultaneously
SW3 = Outlets 5 & 6 alternate flashing (no change)

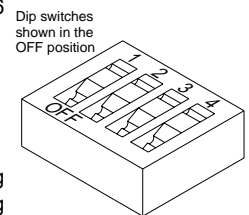
Dip Switch #3 (Hi/Lo Control)-

OFF (Default position) - In this position, when the Hi/Low switch is activated, the power supply "latches" into Lo power. To restore normal, Hi power, it is necessary to turn the power supply off and then on again. In this configuration, a momentary switch is recommended for Hi/Lo activation.

ON - In this position, Hi/Lo power operation is "toggled" between Hi and Lo and it is no longer necessary to turn the power supply off to restore Hi power operation. In this configuration, a toggle switch (non-momentary) is recommended for Hi/Lo power selection.

Dip Switch #4 - This dip switch has no functionality and should be left in its default, OFF position.

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 the load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!



Wire Gage Calculation Chart

Note: The following calculations are for stranded, copper wire

Wire Gage	Length
22 AWG	Insufficient
20 AWG	Insufficient
18 AWG	4 Feet
16 AWG	6 Feet
14 AWG	9.5 Feet
12 AWG	15.5 Feet
10 AWG	24.5 Feet
8 AWG	39 Feet
6 AWG	62 Feet
4 AWG	98.5 Feet
2 AWG	157 Feet

This chart provides information to determine the proper gage wire, based on the total length of the wire. This information should be applied to the RED (POSITIVE battery terminal) and BLACK (to chassis ground) wires.

Table 1
Switch Control Wires

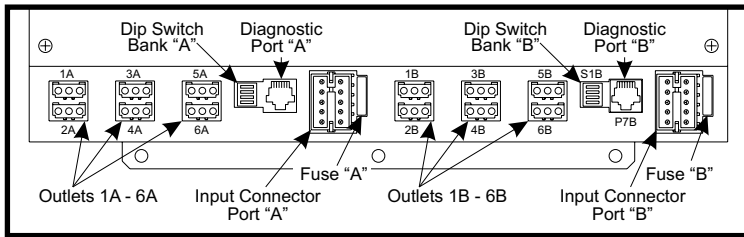
Pattern Control Wires

	BLUE	GREEN	YELLOW
	BLUE Outlets 1 & 2	GREEN Outlets 3 & 4	YELLOW Outlets 5 & 6
No Pattern Wires	CometFlash®	CometFlash®	CometFlash®
BRN	DoubleFlash	DoubleFlash	DoubleFlash
WHT	RapidRandom	RapidRandom	RapidRandom
BRN & WHT	ActionFlash™	ActionFlash™	ActionFlash™
GREY	ModuFlash™	ModuFlash™	ModuFlash™
BRN & GRY	MicroBurst II	MicroBurst II™	MicroBurst II™
WHT & GRY	MicroBurst III™	MicroBurst III™	MicroBurst III™
BRN, WHT & GRY	Traffic Advisor™	Traffic Advisor™	Traffic Advisor™

Table 2

Traffic Advisor

All Pattern Wires	LEFT SWEEP		
All Pattern Wires		RIGHT SWEEP	
All Pattern Wires	SPLIT SWEEP		
All Pattern Wires			ALTERNATING



Flash Patterns:

The UPS12180 can produce several flash patterns:

CometFlash® - A burst of 4 strobe flashes.

DoubleFlash - A burst of 2 strobe flashes.

Rapid Random - A pattern of strobe flashes at a rate of 240 RRFPM (Rapid Random Flash Per Minute).

Sequential - Three Comet Flash bursts, followed by 6 Rapid Random flashes.

ModuFlash™ - this pattern will produce a sweeping (rising and falling) effect. One full cycle, flashes from 150 fpm to 400 fpm and back to 150 fpm.

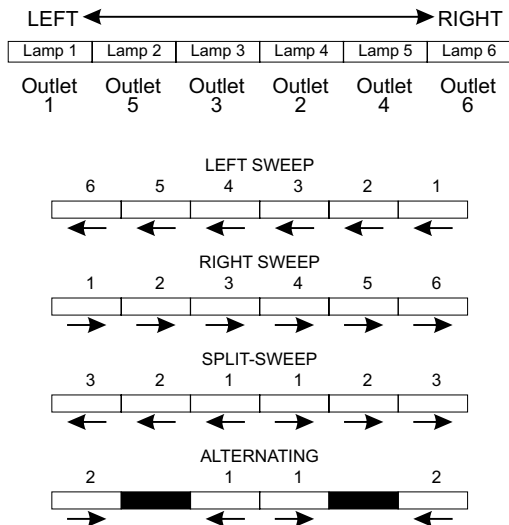
Micro-Burst II™ - Two DoubleFlash bursts.

Micro-Burst III™ - Two Tripleflash bursts.

Traffic Advisor™ - See Traffic Advisor Section below. See Table 1.

Traffic Advisor:

Important! - In order for the Traffic Advisor patterns to flash properly, it is necessary for the lamps to be connected to the UPS12180 in the following pattern: The Traffic Advisor mode is comprised of 4, traffic control-oriented flash patterns:



UPS12180 ELECTRONIC SPECIFICATIONS:

INPUT VOLTAGE 12.8 VDC ± 20%

INPUT CURRENT:

2 LAMPS@30 WATTS 3 AMPS

4 LAMPS@60 WATTS 6 AMPS

6 LAMPS@90 WATTS 9 AMPS

8 LAMPS@120 WATTS 12 AMPS

10 LAMPS@150 WATTS AMPS

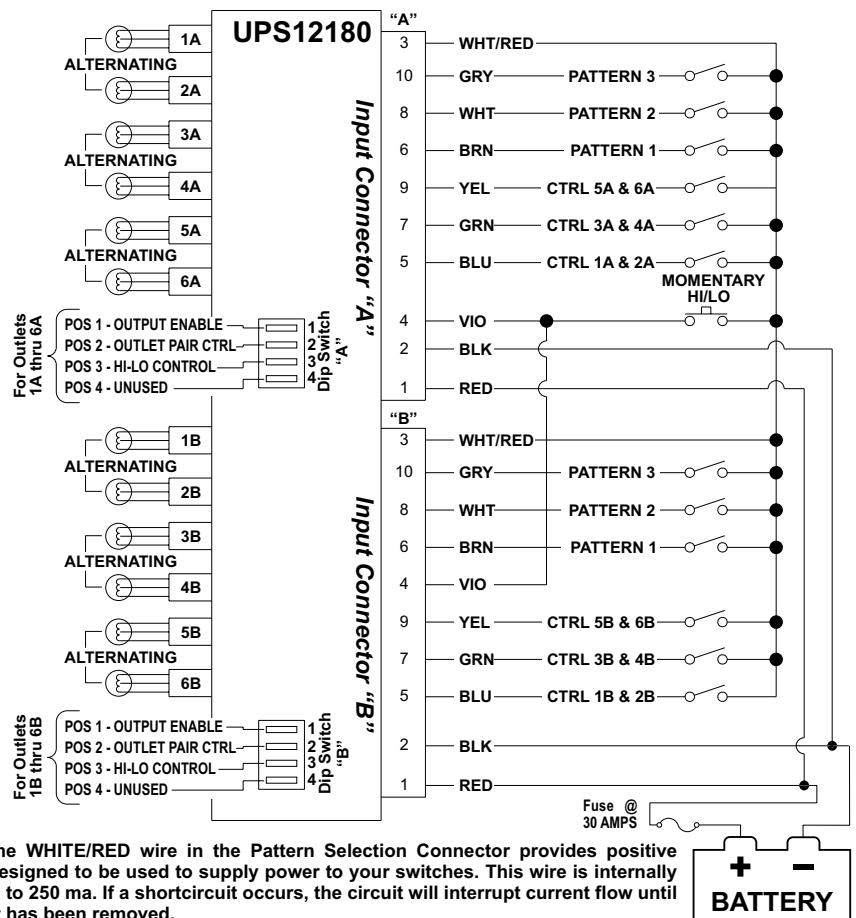
12 LAMPS@180 WATTS 18 AMPS

INPUT POWER (WATTS) 40/80/120/160/200/240

OUTPUT POWER (WATTS) 30/60/90/120/150/180

WIRING DIAGRAM

ALL SWITCHES CUSTOMER SUPPLIED



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 shortcircuit occurs, the circuit will interrupt current flow until the short has been removed.