

## INSTALLATION INSTRUCTIONS FOR MODEL 600151 STROBE POWER SUPPLY

### SAFETY MESSAGE TO INSTALLERS

People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with the products. In addition, listed below are some other important safety instructions and precautions you should follow:

- To properly install this unit: you must have a good understanding of automotive electrical procedures and systems, along with proficiency in the installation and use of safety warning equipment.
- When drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged.
- A light system is a high current device. In order for it to function properly, a separate ground connection must be made. If practical, it should be connected to the negative battery terminal. At a minimum, it may be attached to a solid metal body or chassis part that will provide an effective ground path as long as the light system is to be used.
- Do not drill any holes in the power supply housing.
- Locate light control so the VEHICLE and CONTROL can be operated safely under all driving conditions.
- You should frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- File these instructions in a safe place and refer to them when maintaining and/or reinstalling the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

### WARNING

This power supply is designed to power various strobe heads designed by Federal Signal. Consult local codes and regulations to determine if the power supply/strobe head combination complies.

### I. GENERAL.

The Federal Model 600151 strobe power supply is designed to operate on 11 to 16-volts DC (13.6 Vdc nomi-

nal). It is designed to power six remote strobe heads. This power supply will provide 72 alternating quadruple or double strobe flashes per minute with flash energy of up to 12 joules per quad flash.

When fewer than six strobe heads are connected, the flash energy delivered to selected outlets doubles to 24 joules. If the number of connected strobe heads is reduced to five or four, head-type selection and connection to the proper power supply outlets must be performed carefully. Strobe head overheating and failure may result if the selected strobe heads are not designed to handle the additional power.

This power supply can produce several flashing patterns. The basic flashing pattern is an alternating quadruple flash pattern. The "action" pattern flashes the heads overlapping one another to produce a "no dark time" pattern with increased light intensity. The cutoff function disables all but two strobe heads. A low-power double - flashing pattern can be activated when the basic flashing pattern, action pattern, or cutoff function, is activated.

### II. SPECIFICATIONS.

Input Voltage	11Vdc to 16Vdc (13.6Vdc nominal).
Input Current @ 13.6Vdc	7.1 amperes (basic pattern) 3.2 amperes (low power).
Fuse	15 amperes (automotive type).
Flash Energy Per Head (nominal)	11 joules per quadruple flash (basic pattern). 12 joules per quadruple flash (action pattern). 5.5 joules per double flash (low power pattern).
Power Per Head*	14 watts (action pattern).
Dimensions:	
Length	10.06" (256 mm)
Width	2.8" (71 mm)
Height	3.46" (88 mm)
Net Weight	1.75 lbs. (0.79 kg)
Shipping Weight	2.2 lbs. (1.0 kg)

\* NOTE: The power will double to 28 watts at some outlets if fewer than six operating strobe heads are connected to the power supply. Federal Models 601131, 601151, 601181, and 601191 are designed to withstand the doubled power. Connect only these models to doubled power outlets.

### III. INSTALLATION.

#### CAUTION

The power supply housing is NOT waterproof. It must be mounted in a location which is sheltered from falling rain, snow, standing water, etc. Also, it must be installed in an adequately ventilated area. Never install near heater ducts.

Do not mount the power supply unit under the vehicle's hood.

When selecting a mounting location for the power supply unit, it is necessary to keep in mind that the cables are available in either a 16-foot length (601341) or a 30-foot length (601351). Plan all wiring and cable routing before performing any installation.

#### A. Mechanical.

1. Use the power supply as a template and scribe four drill positioning marks at the selected mounting location.

#### CAUTION

Before drilling holes in ANY part of a vehicle, be sure that both sides of the mounting surface are clear of parts that could be damaged; such as brake lines, fuel lines, electrical wiring or other vital parts.

#### WARNING

**DO NOT** drill holes in ANY part of the power supply chassis or cover. Damage to the unit, serious injury or death to you or others may result.

2. Drill four mounting holes at the position marks.

3. Secure the power supply to the mounting surface.

4. Install the strobe units as described in the instructions packed with the units.

#### B. Flashing Configurations.

Before proceeding with electrical connections, it is important to understand the flashing configurations available with the unit.

#### CAUTION

If one of the strobe heads operating at normal power (outlets 1 and 3 or 2 and 6) fails, the other will operate at double the flash power. If the remaining strobe head cannot withstand the doubled flash power, IMMEDIATELY replace the failed strobe head.

#### 1. Double Power Option.

Outlets 1 and 3 operate in parallel. They share flash power and always flash at the same time. Outlets 2

and 6 also operate in parallel, flash at the same time, and flash alternately with outlets 1 and 3. Power output of any of these outlets is doubled if its parallel outlet is not connected, or not working.

#### CAUTION

Some strobe heads may not survive the additional heat resulting from doubling the flash power. Models 601131, 601151, 601181, and 601191 are designed to withstand the additional heat. Use only a Model 601131, 601151, 601181, or 601191 strobe head when the flash power is doubled.

To double the flash power at outlet 1, ensure that no other head is connected to outlet 3. To double the flash power at outlet 3, ensure that no other head is connected to outlet 1.

To double the flash power at outlet 2, ensure that no other head is connected to outlet 6. To double the flash power at outlet 6, ensure that no other head is connected to outlet 2.

#### 2. Patterns.

Outlets 1 & 2, 3 & 6, and 4 & 5 form pairs of alternately flashing strobe heads. These pairs are listed on the unit label for your convenience.

#### a. Quadruple Flashing.

The basic flashing pattern is quadruple flashing. Strobe heads connected to outlets 1, 3, and 4 quadruple flash alternately with strobe heads connected to outlets 2, 5, and 6.

Quadruple flashing is activated by applying +12Vdc to the user-supplied 14AWG red wire.

#### b. Action Flashing.

Action flashing produces quadruple flashes that overlap, creating a pattern with no dark time. Flashing pair 4 & 5 is shifted in time with respect to flashing pairs 1 & 2 and 3 & 6. In addition, the flash power is increased by 10 percent.

To activate action flashing, apply +12Vdc to the 14AWG red wire and to the 18AWG blue wire.

#### c. Cutoff.

When activated, strobe heads connected to outlets 1, 2, 3, and 6 are disabled. Strobe heads connected to outlets 4 and 5 remain flashing. Front or rear cutoff is determined by the location of strobe heads connected to outlets 4 and 5.

To activate cutoff, apply +12Vdc to the 18AWG green wire.

## NOTE

Outlets 4 and 5 are marked red on the label indicating they remain flashing when cutoff is activated.

### d. Low Power (Double Flash).

The low-power double-flash mode reduces flash intensity and current requirement by more than 50 percent.

To activate the low power mode, apply +12Vdc to the 18AWG yellow wire.

### C. Electrical Connections.

## WARNING

Failure to observe this WARNING may result in fire, burns or blindness.

If shorted to vehicle frame, high current conductors can cause hazardous sparks resulting in electrical fires or molten metal.

DO NOT connect this system to vehicle battery until ALL other electrical connections are made and mounting of all components is complete.

Verify that no short circuits exist, before making connection to the vehicle battery.

1. Disconnect vehicle battery. Ensure that power is disconnected from all vehicle lighting control systems.

2. Ensure that the power supply chassis is grounded to the vehicle chassis. If necessary, connect a wire from the power supply chassis (mounting screw) to a known good vehicle chassis ground.

## IMPORTANT

Refer to figure 1 while completing the electrical connections.

3. Connect the user-supplied 14 AWG black wire to the power supply's -/BLK terminal. Note that the quick-connect terminal for the black wire is wider than the terminal for the red wire. Dress the wire neatly, allowing for a drain loop and maintenance. Connect it to a known good vehicle chassis ground.

4. Connect the control wire harness (blue, green, and yellow wires) to the power supply. Connect the blue, green, and yellow wires to a 12 volt power source (switch, relay, or vehicle lighting controller) capable of supplying 1 ampere. If desired, selected control wires can be connected directly to the 12 volt power source, or can remain not connected.

5. See figure 1 and proceed as follows:

a. Choose the pair of heads that should remain flashing when cutoff is activated. Connect their cables to outlets 4 and 5 (marked red on the power supply label).

b. Choose the heads desired to form alternating pairs. Connect the cables of one pair to outlets 1 and 2. Connect the cables of the other pair to outlets 3 and 6.

c. Refer to the instructions supplied with the strobe head units, or cable kit, for additional wiring instructions. Route the cables to the strobe tube units. Allow for a drain loop and maintenance.

6. Connect the user-supplied 14 AWG red wire to the power supply's RED/+ terminal. Note that the quick-connect terminal for the red wire is narrower than the terminal for the black wire. Dress the wire neatly, allowing for a drain loop and maintenance. Connect it to a 12 volt power source (switch, relay, or vehicle lighting controller) capable of supplying a minimum of 10 amperes.

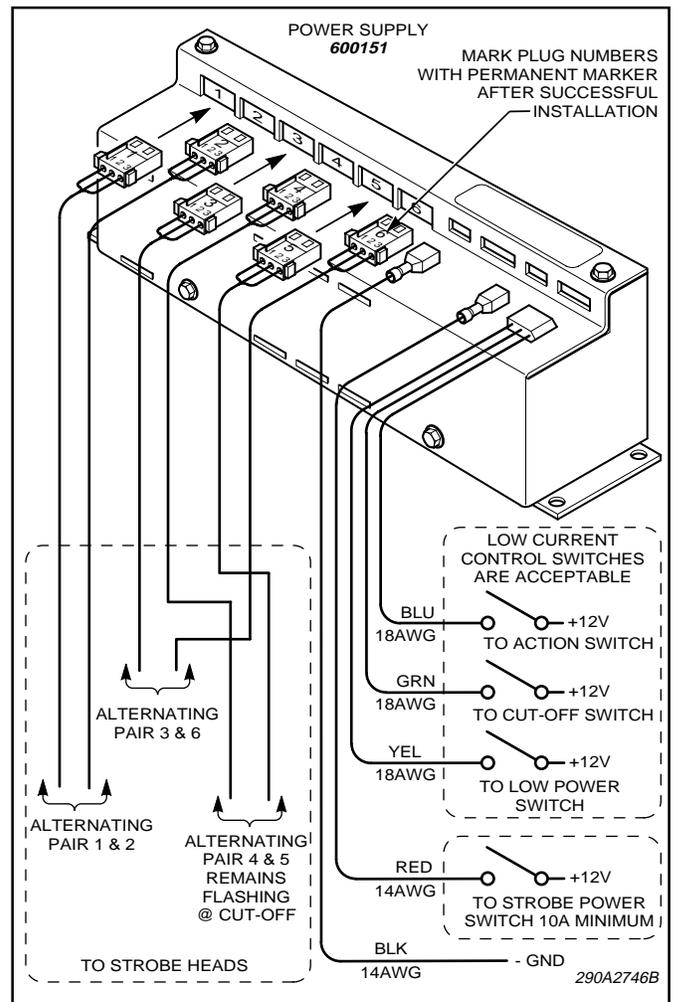


Figure 1.

7. Check all connections and wiring. Ensure that there are no short circuits and that all wires are protected from any sharp edges. Reconnect the vehicle battery. Test for proper operation of the strobe system. Check all the flashing functions. If necessary, adjust the positions of the strobe head plugs connected to the power supply. When satisfied with the flashing patterns, use a permanent marker and mark the strobe plugs with the appropriate outlet numbers.

**IV. OPERATION.**

**SAFETY MESSAGE TO OPERATORS**

Peoples' lives depend on your safe use of our products. Listed below are some important safety instructions and precautions you should follow:

- Do not attempt to activate or deactivate light control while driving in a hazardous situation.
- Although your warning system is operating properly, it may not be completely effective. People may not see or heed your warning signal. You must recognize this fact and continue driving cautiously.
- Also, situations may occur which obstruct your warning signal when natural or man-made objects are between your vehicle and others, such as: raising your hood or trunk lid. If these situations occur, be especially careful.
- At the start of your shift, you should ensure that the lights are securely attached and all units are operating properly.
- If a selected function does not perform properly or if any of the lamps remain illuminated when the control is off, disconnect the power connector from the control unit and contact the nearest service center.

Failure to follow these safety precautions may result in property damage, serious injury, or death to you, to passengers, or to others.

**RETAIN AND REFER TO THIS MESSAGE**

**V. SERVICE.**

**WARNING**

High voltages are present in a strobe light system. Wait at least five (5) minutes, after shutting off power, before servicing the unit. Failure to do so may result in property damage, serious injury, or death to you and others.

Servicing should be performed by a qualified Federal Signal service center. If the power supply is not working properly, disconnect power and ground to the unit. Next, disconnect the electrical connections to the strobe tubes. Remove the power supply from the vehicle. Send the unit to the nearest authorized service center or to the Federal Signal service department.

Communication and shipments should be addressed to:

Service Department  
 Federal Signal Corporation  
 2645 Federal Signal Drive  
 University Park, IL 60466

1-800-433-9132  
 (In Illinois) 708-534-3400

**WARNING**

The fuse **MUST** be replaced with an exact replacement only.

After servicing is complete, perform a test to ensure the power supply is operating properly.

**VI. REPLACEMENT PARTS.**

Description	Part No.
Fuse, 15 Ampere	148A142A-06
Printed Circuit Board Assy.	2001189-02
Power Supply Unit	8575060-01
Accessory Kit	8575101

**VII. KIT CONTENTS LIST.**

Qty.	Description	Part No.
1	Terminal, Wide	224A216-04
1	Terminal, Narrow	224A215-04
1	Control Harness/Plug	175830