INSTRUCTION SHEET
FOR
MODEL 650205
HIGH SIDE 2 CHANNEL FLASHER

SAFETY MESSAGE TO INSTALLERS

⚠ WARNING

The lives of people depend on your proper installation and servicing of Federal products. It is important to read 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 kit: 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. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring passes.**
- **Never attempt to install aftermarket equipment, which connects to the vehicle wiring, without reviewing a vehicle wiring diagram - available from the vehicle manufacturer. Insure that your installation will not effect vehicle operation or mandated safety functions or circuits. Always check vehicle for proper operation after installation.**
- **Locate control so the VEHICLE and CONTROLS can be operated safely under all driving conditions.**
- **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.

I. GENERAL.

The flasher (Model 650205) has two (2) light circuits with a current capacity of up to 10-amperes (maximum) per side, 20-amperes total. The flasher is designed to operate on any 12-24VDC (negative ground) vehicle electrical system. The flasher operates as a high side switch, switching the +DC supply to the load.

The flasher is in a metal housing and can be mounted in a variety of locations. User-supplied hardware are required to mount the flasher and user-supplied switches are required to activate the flasher.

II. INSTALLATION.

⚠ WARNING

DO NOT connect flasher to brake light circuit of ANY vehicle.

Connection of aftermarket electrical equipment into this circuit may interfere with the brake shift interlock.

This could cause the vehicle to unexpectedly move forward causing possible property damage, injury or death to the vehicle operator or others.

A. *Flasher Mounting.*

CAUTION

Never mount the flasher in the vehicles engine compartment. It is recommended that the flasher be installed either under the dash, in a console, in an equipment compartment, or in the trunk of the vehicle.

1. Locate a suitable mounting location for the flasher.

2. Using the flasher as a template, scribe drill position marks on the mounting surface.

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, electrical wiring or other vital parts.

3. Drill four mounting holes at the previously scribed drill position marks. The hole diameter should be chosen to accommodate user-supplied hardware.

4. Secure the flasher to the vehicle with user supplied hardware.

B. *Wiring.*

CAUTION

The device WILL NOT light up or flash if improperly grounded. Be sure that the device ground is attached to a good vehicle ground. A ground termination at the flasher is provided.

Refer to figure 1 when performing the following procedure.

1. Connect the flashers GND (-) to a good vehicle ground point.

2. Connect the Power (+) lead to the +12VDC electrical system. If it is desired to switch the flasher on and off, the Power (+) needs to be controlled through a switch sufficiently rated to the fused current rating of the source. Wire gauge should be sized appropriate to the fused current rating of the source.

3. The flasher has two outputs, Out 1 and Out 2. These outputs switch the +DC source from source to the load. Connect these outputs to the loads, which are desired to be switched.

⚠ WARNING

To provide safe operation, the user supplied power control switch and wiring must be capable of handling the rated current of the fuse at the source.

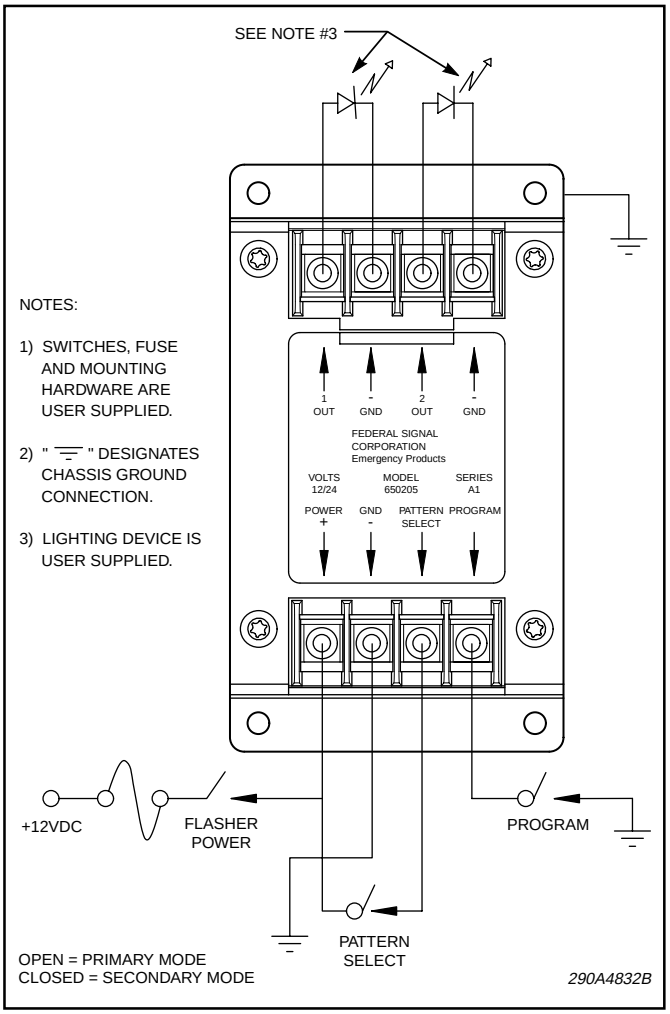

Figure 1.

C. *Programming (see table 1).*

The flasher will provide the end user with two preselected flash patterns. The preselected flash patterns are to be chosen from the ten factory programmed patterns provided with each flasher. It is recommended that the preselected flash patterns be determined and programmed during installation.

The following procedures demonstrate the programming and operating features of the flasher:

Turn on the flasher by applying Power (+) and Ground (-). The flasher will begin to flash in Mode 1(Primary Pattern). By shorting the PROGRAM pin to GND, the flasher will switch to the next pattern. The flasher will step through the patterns each time the program pin is shorted, returning to the top once after the tenth pattern is displayed. To lock in a chosen pattern, allow the pattern to run for 15-seconds and it is now programmed.

To turn on the flasher in Mode 2 (Secondary Pattern), turn the flasher system on and connect the Pattern Select connection to Power (+). By shorting the PROGRAM pin to GND, the flasher will switch to the next pattern. The flasher will again step through the patterns each time the program pin is shorted, returning to the top once after the tenth pattern is displayed. To lock in a chosen pattern, allow the pattern to run for 15-seconds and it is now programmed.

The flasher is now programmed. When power is applied to the flasher, it will flash in Mode 1 (Primary Pattern). To operate the Mode 2 (Secondary Pattern) switch +DC to the Pattern Select Pin. Releasing the switch returns the flasher to flashing Mode 1 (Primary Pattern).

Pattern Descriptions	
Pattern 1	Alternating Quad Flash 76 QFPM SAE Compliant
Pattern 2	Alternating Triple Flash 102 TFPM SAE Compliant
Pattern 3	Overlapping Penta Flash 87 PFPM SAE Compliant
Pattern 4	Alternating Single Flash 120 FPM SAE Compliant
Pattern 5	Alternating Single Flash 240 FPM SAE Compliant
Pattern 6	Simultaneous/Overlapping Triple/Nine
Pattern 7	Alternating Single
Pattern 8	Overlapping Alternate 95 Patterns/Min. SAE Compliant
Pattern 9	Steady
Pattern 10	2 @ 60 FPM 4 Pulse Alternating 2 @ 60 FPM 2 Pulse Simultaneous

Table 1