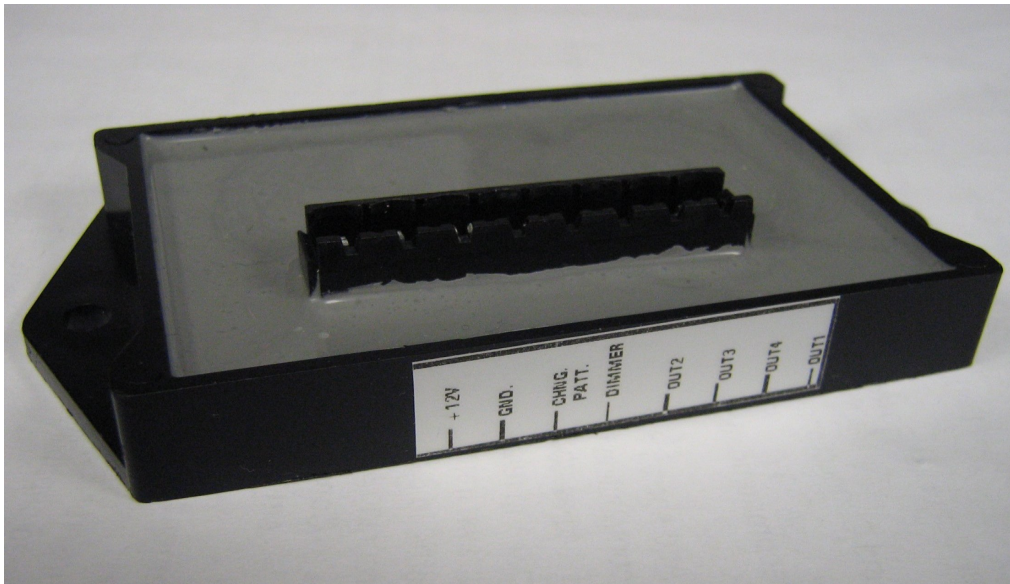




ELECTRONICS CO. LTD.
EMERGENCY VEHICLE SOUND, LIGHTING & EQUIPMENT

LED FLASHER GND CONTROL FPC4N

Installation/Operations Manual



FPC4N

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Applicable Models

- Flasher Module LED (FPC4N)

Introduction

The *LED Flasher Module* is a compact state of the art device intended to provide a series of standard flashing patterns for controlling the externally mounted vehicle warning beacons or LED warning light bars. This module can provide flashing and sequencing of 4 individual LED light bars.

Each output circuit can safely control LED light loads of up to 2A each.

REGULAR TUNGSTEN AND HALOGEN LIGHTS SHOULD NOT BE CONNECTED TO THIS FLASHER MODULE.

General Warning

1. The use of emergency warning devices does not ensure the safety of the operator. The operator is responsible to ensure safe operation of the vehicle regardless of whether the warning device is in operation or not
2. The effectiveness of this or any warning device is highly dependent on proper installation and maintenance. ***Read the manufactures instructions before installing and follow all recommendations.***
3. When in use the operator must ensure that the warning signal is visible and not obstructed by vehicle components (i.e. open trunk lid), people or other obstructions
4. This device is intended for use by authorized personnel only The user is responsibility to ensure that all local, state/provincial and federal laws are being complied with. D&R assumes no liability for any loss resulting from the use of this device.
5. The device must be installed so as not to reduce the output performance of vehicle systems
6. Placement of control switches must be so as to provide convenient reach for the operator without losing eye contact with the road.
7. Emergency warning devices require high electrical voltages and/or currents. Properly connect and ground all circuits. Shorting or improper grounding of this device may caused personal injuring, vehicle damage or both
8. ***All operators should be properly trained in the operation of this device to ensure both their and public safety***

Unpacking & Pre-Installation Check

D&R Electronics Co. advises that you open and examine all shipments within **48 hours of receipt**. *LED Flasher Module* is shipped pre-assembled, sealed and factory tested. All necessary hardware for standard installation is included. Remove all components from the shipping carton.

Use this pre-installation check list to verify your unit:

1. Confirm contents with the packing slip
2. Examine unit for in transit damage (i.e. scratches, broken or bent connectors. etc). Report any damage to the carrier immediately. Keep all shipping material
3. The unit is factory tested and a pre-installation check is not needed.

Installation and Mounting

Warning

1. Any device used inside a vehicle, may cause severe personal injury if not properly mounted and secured. Objects used in the vehicle may become airborne during a collision or other sudden changes in vehicle speed or direction, such as braking, acceleration or turns.
2. Be sure to mount unit through the steel of the vehicle. Avoid mounting through plastic or other non-structural materials.
3. **POINT OF INSTALLATION MUST NOT INTERFERE WITH DEPLOYMENT OF VEHICLE AIR BAGS.**
4. **D&R Electronics recommends this or any of our products be installed by qualified professionals.**

Mounting the LED Flasher Module

The *FPC4N* may be mounted anywhere inside the vehicle, inside the warning device or any convenient location that is determined by proper planning and installation techniques.

Proceed as Follows:

1. Determine an appropriate mounting location
2. Confirm there is adequate access and clearance for the wiring and its connections.
3. Secure the *FPC4N* with 2 self tapping mounting screws (not supplied).

Wiring and Setup Instructions

Warning

1. Looms, grommet, cable ties or other installation hardware should be used to anchor and protect wires
2. All wire should conform to the minimum wire size as specified by the manufacturer.
3. Splices should be minimized and made in a fashion so as to protect from corrosion to reduce loss of conductivity.

Note: This product is designed to control LED based light bars and warning beacons connecting this to regular or halogen lamp loads could compromise the safety and reliability of this product.

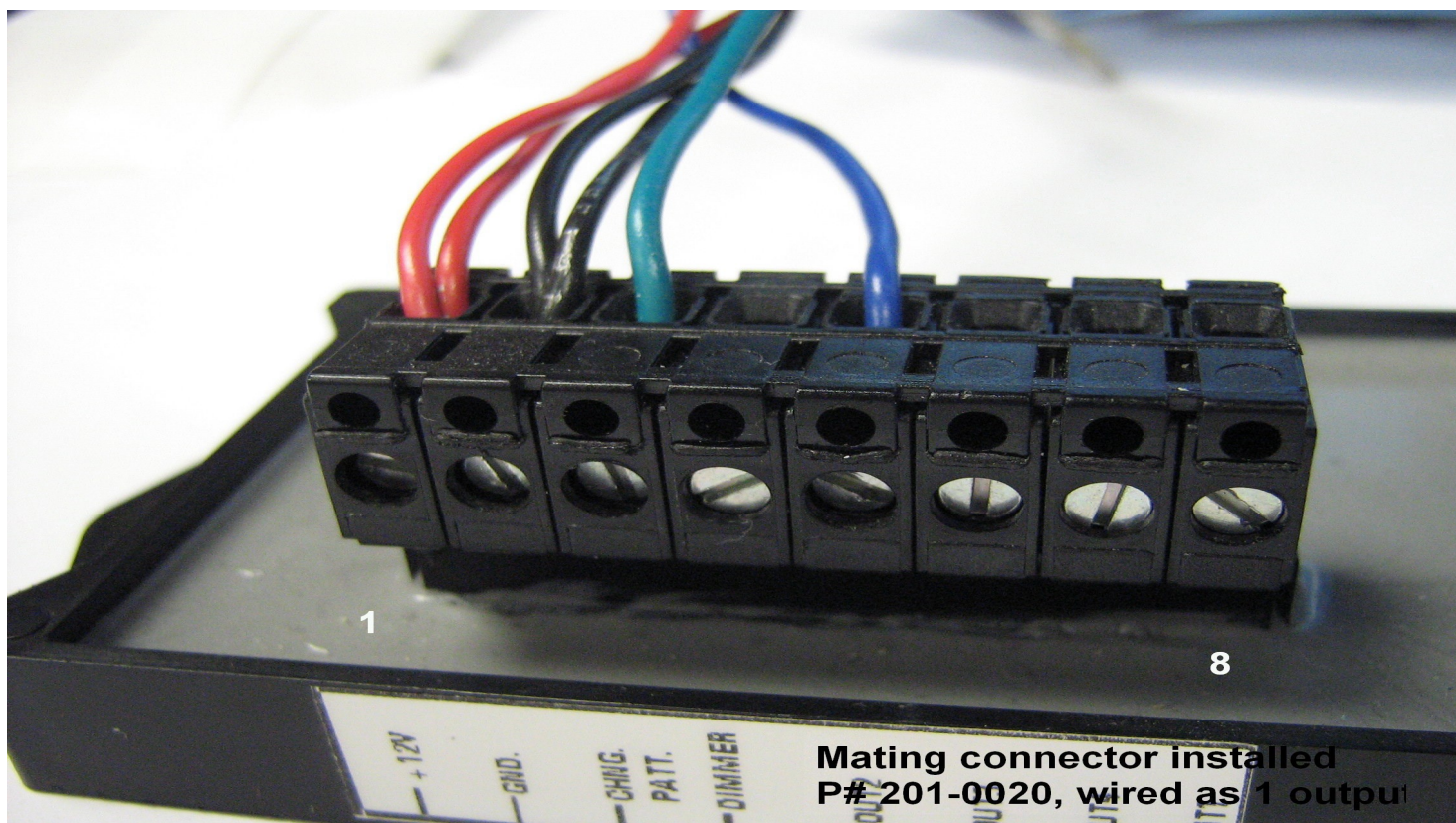


Figure 1

Side and connector views of the FPC4N showing the location of the Input/output pins with the connector installed.

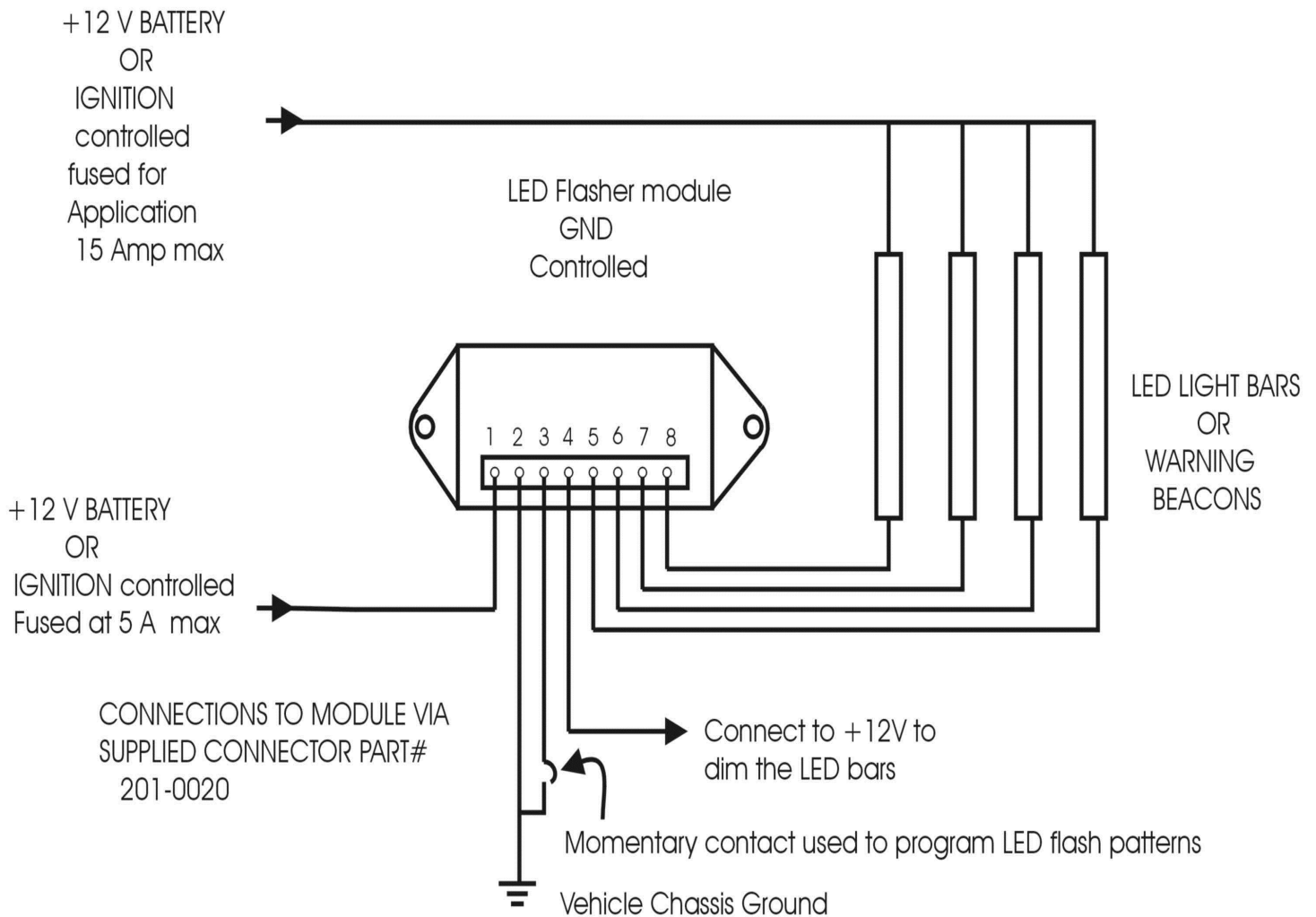


Figure 2
FPC4N Input and Output Basic Wiring Diagram for a 4 Output Installation

Wiring information:

PIN# FUNCTION

- 1 +12 V Battery Input
- 2 Chassis Ground (GND) and return path for the LEDs
- 3 Program PIN, touch to GND to scroll through the LED Flash patterns
- 4 Dimmer I/P, +12V at this pin dims the intensity of the LEDs controlled by this module
- 5 OUTPUT 1
- 6 OUTPUT 2
- 7 OUTPUT 3
- 8 OUTPUT 4

All wiring to use 18 AWG stranded wire, colors selected by installer.

Maintenance

The *FPC4N* does not require user maintenance , this is a factory sealed unit and can not be repaired.

There are no user maintained parts. Do not attempt to open or repair. Contact your local distributor or D&R Electronics for repair

Troubleshooting

PROBLEM	POSSIBLE CAUSE	SOLUTION
No power at the LED outputs	No power to " <u>12V INPUT</u> " Faulty ground Faulty Unit	Check 12V INPUT connection for loose or missing wires. Check installed fuse, if this is faulty replace it. Check Vehicle Chassis "Ground" connection Return Unit for replacement
Input power OK- No output to connected LEDs (LEDs not flashing or sequencing).	Faulty connection from Led flasher (FPC4N) terminal block to LED Module. Pattern program is set to "OFF" mode. Faulty Unit	Verify that the BLACK, GND or return wire from the LED Module is connected to the FPC4N out put terminals – not the Red . Also ensure that this wire is firmly secured with the set screw and does not pull out when tugged. Verify that the RED or Power IN from the Led module is connected to a +12V source as shown in Figure 2 (typical connection diagram). Touch and release "the pattern set wire" to ground LEDs should be sequencing. The pattern should change at every touch and release. Return Unit for replacement
Partial output from Flasher module; connections check out, connected LEDs check out, one or more outputs dead.	Faulty Unit	Return for replacement

Specifications

General

Description	No. of Available Connections/ Features
Power Inputs:	
18 AWG +12V	1
18 AWG Ground	1
18 AWG Pattern Control Input (momentary ground activated)	1
18 AWG Dimmer input (connected to +12V input)	1
Terminal Block Power Outputs	
OUT 1- LED output load only to a maximum of 2.0A	1
OUT 2- LED output load only to a maximum of 2.0A	1
OUT 3- LED output load only to a maximum of 2.0A	1
OUT 4- LED output load only to a maximum of 2.0A	1
Flashing Patterns and Combinations	20
These patterns and combinations are as follows;	
1 - OFF all outputs off	
1 - ON all outputs constant on	
4 - COMPLEX PATTERN MIXES, multiple outputs at the same time	
14 - DISCRETE OUTPUT FLASH SEQUENCES	
The patterns are scrolled through by momentarily grounding the pattern control input pin.	
The patterns are industry standard for the intended application and this range covers the majority of patterns for the public service vehicles that they are installed in.	
Power consumption	
When pattern set to off and unit is connected to Battery the current drawn by the live circuit is less than 5 mA	

WARRANTY

D & R Electronics warrants its new products to be free from defects in material and workmanship, under normal use and service for a period of one year on parts replacement.

This warranty applies only to original purchasers acquiring the product directly from D&R Electronics, or its authorized dealers. Warranty will not be recognized without proof of purchase or bill of sale.

This warranty is not transferable.

The warranty begins on the date of delivery to the first user/purchaser.

This warranty shall not apply to products which must be repaired due to normal wear and tear, negligence, improper installation, abuse, misuse, or which have been altered or modified at a facility other than D & R Electronics, or its authorized depot centers.

Units proved to be defective within the warranty period, based on an examination by D&R Electronics, will be replaced or repaired at D & R Electronics' option. This warranty does not cover travel expenses or labor charges for removal or installation.

Lamps, flash tubes, batteries or other items considered consumables are not covered under warranty.

This warranty is in lieu of all other express warranties. D&R Electronics makes no warranties, expressed or implied, other than the express warranties contained herein.

PRODUCT RETURN POLICY

In order to provide you with faster service, product returns for repair or replacement, must have a **Return Goods Authorization Number (RGA number)**. Please contact our company to obtain a RGA number before you return the product to D & R ELECTRONICS. Write the RGA number clearly on the package. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

D & R ELECTRONICS assumes no responsibility or liability for expenses incurred for the removal and/or the installation of products requiring service and/or repair. Repairing or replacing product is at the discretion of D & R ELECTRONICS.

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