Traffic Products and Warning Systems

FS-2A

DC Flasher
User Manual

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INTRODUCTION

The FS-2A is a highly versatile, programmable DC flasher.

ELECTRICAL SPECIFICATIONS

- Input Voltage Range .... 11.4 VDC to 30 VDC
- Max Load Power .... 40 Watts per output circuit at 11.4 VDC to 30 VDC
- Operating Temp .... -20°C to +74°C

PHYSICAL SPECIFICATIONS

- Length .... 5.5"
- Width .... 2.625"
- Height .... 1.64"

FUNCTIONAL SPECIFICATIONS

- Flash Rate .... User Programmable for 35 to 70 flashes per minute.
- Flash Circuits .... User selectable via internal jumper for 1 or 2 circuits.
- Night Dimming .... Automatic via Photocell (may be disabled)
- Night Run Only .... User selectable via internal jumper for Disabled or Enabled.
- Lamp Type .... User selectable via internal jumper for Halogen or LED.
- Duty Cycle .... User selectable via internal jumper for 40% on 60% off flash cadence (single circuit mode) or it may be set to 50% on/off

The FS-2A is entirely microprocessor controlled which gives it tremendous versatility and low power consumption. The FS-2A is intended for use in solar power applications, or in any application where there is a ready source of 11.4 VDC to 30 VDC.

CONFIGURING THE FLASHER

To program the FS-2A you first need to remove the case cover. With a Phillips screwdriver, remove the two black cover retaining screws and set them aside. The cover should easily slide off. Near one end of the printed circuit board (opposite the harness connection) you should see a row of jumper pins. Figure 1 shows pin rows and columns.
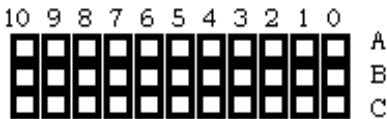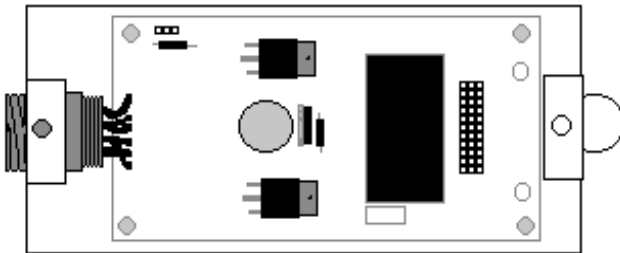
Fig. 1

Tables 1 and 2 show the jumper settings for each option. Table 1 contains the general settings and Table 2 contains the flash rate settings.

GENERAL SETTINGS

PIN	ON (BC)	OFF (AB)	
0	2 CKT FLASHER	1 CKT FLASHER	
1	40% ON 60%OFF *	50% ON/OFF	
2	DIM ENABLED	DIM DISABLED	
3	NIGHT RUN ENABLED	NIGHT RUN DISABLED	**AB=OFF**
4	LED LAMPS	HALOGEN LAMPS	**BC=ON**
5	NOT USED		
6	NOT USED		
7	NOT USED		

Table 1

*40% ON 60% OFF only work in one-circuit mode.

FLASH RATE SETTINGS

FLASHES PER MINUTE

	35	40	45	50	55	60	65	70
8	ON	OFF	ON	OFF	ON	OFF	ON	OFF
9	ON	ON	OFF	OFF	ON	ON	OFF	OFF
10	ON	ON	ON	ON	OFF	OFF	OFF	OFF

Table 2

A jumper across pins A and B = OFF. A jumper across pins B and C = ON.

SETTING FLASHER TO ONE-CIRCUIT OR TWO-CIRCUIT MODE

ONE CIRCUIT   TWO CIRCUIT

SETTING TO 40% ON 60% OFF OR 50% ON/OFF CADENCE

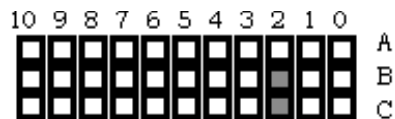(ONE-CIRCUIT MODE ONLY)

50% ON/OFF   40% ON 60% OFF

ENABLING AND DISABLING THE DIMMING OPTION

For the dimming circuit to work the photocell must be installed. The photocell should be mounted in your solar cabinet in a position where street lamps or traffic lights will not affect it.
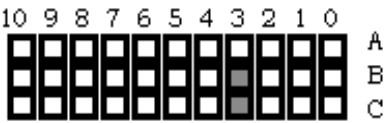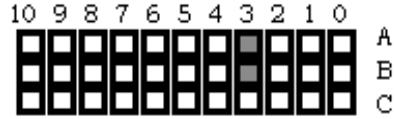

DIM DISABLED   DIM ENABLED

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ENABLING AND DISABLING THE NIGHT RUN OPTION.

If night run is ENABLED the unit ignores external control inputs (such as a clock relay) and will turn on at dusk and turn off when full daylight. Like the DIM option the NIGHT RUN setting will work only if the photocell is installed.

NIGHT RUN ENABLED   NIGHT RUN DISABLED

SELECTING LED OR HALOGEN LAMPS
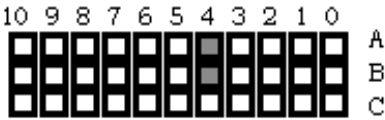
HALOGEN LAMPS   LED LAMPS

FLASH OPTIONS

NOTE: Jumped pins are shown as shaded blocks in examples

EXAMPLE 1 - Flashes per Minute

FLASH RATE=45 FLASHES/MIN   FLASH RATE=60 FLASHES/MIN

EXAMPLE 2

- 2 circuit operation
- 50% on/off
- Dim enabled
- Night Run disabled
- LED type lamps
- Flashing at 40 flashes/minute

EXAMPLE 3

- 1 circuit operation
- 40% on 60% off
- Dim enabled
- Night Run enabled
- Halogen type lamps
- Flashing at 55 flashes/minute

CONTROL OPTIONS

1. Continuous Flash (operates 24 hrs/day when power is applied to RED and BLACK)
2. Relay/Switch (operates only when YELLOW is grounded to WHITE/YELLOW)

Another small set of jumpers is located at the opposite end of the circuit board, near the harness connection. These 3 pin jumpers allow you to select continuous flash or relay/switch controlled operation.
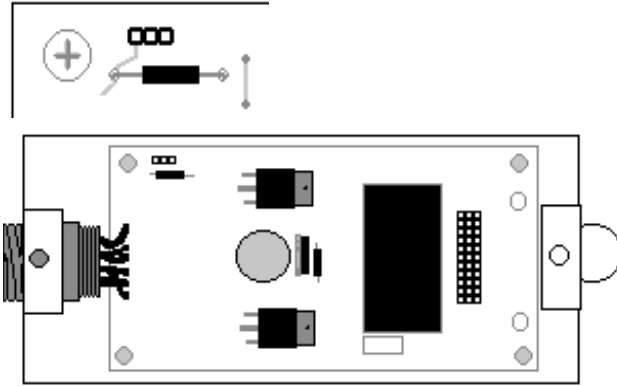

Fig. 2

CONTINUOUS FLASH

(JUMPED PINS ARE SHADED)

Jumper the 2 pins closest to the corner edge of the circuit board for continuous flash mode. If the flasher is set to continuous flash it will ignore any switches or relays which may be connected.

RELAY/SWITCH CONTROLLED FLASH

(JUMPED PINS ARE SHADED)

Jumper the 2 pins away from the corner edge of the circuit board for Relay/Switch control mode. In this mode, the flasher will operate only if the controlling relay or switch is closed(yellow wire grounded). The switch or relay must be connected across pin 7 (YELLOW) and pin 9 (WHITE/YELLOW) of the CPC harness.

WARNING: Never apply voltage to the (YELLOW) control input wire.

See Figure 3 for Flasher Wire/ Connector Pin Out designation.

After programming is finished, replace flasher cover and screws.

NIGHT DIMMING SPECIFICATIONS

When your flasher is set for night dimming it will constantly evaluate the brightness of light at the photocell. It will not react to brief increases or decreases in light levels, such as a passing car headlights or someone walking by the photocell. A built-in filter constantly averages the amount of light appearing at the photocell. This light level must change for a number of seconds before the filter will trigger a change in signal intensity.

If the filter detects that the light level at the photocell has changed and has remained changed for several seconds, then it will begin dimming the lamps proportional to light level in steps beginning at 80% then 60% and so on, down to 33% (full dim). The unit should reach full dim at around 2 Foot-Candles +/- 10%.

If you cover the photocell to test the dimming it may take more than a minute for it to reach full dim. When exposed to light after being at full dim, the lamp intensity will be increased from 33% up to 100% (full bright) at about the same rate.

LIMITED WARRANTY

Electrotechnichics Corporation (d.b.a ELTEC) warrants devices manufactured by ELTEC to be free of defects in material and workmanship for a period of 25 months from the date of purchase by the original purchaser.

To determine if the FS-2A is within warranty, locate the serial number (SN) on the white decal. The letter determines the month (A-L=January through December) it was manufactured followed by the year. Example: C12xxxxx=March '12.

ELTEC will repair or replace any FS-2A flasher returned prepaid within the warranty period as long as there is no evidence that the unit has been misused, abused, damaged by input over voltage, output overloads, lightning, or water, or altered in any manner without the expressed written permission of ELTEC. ELTEC disclaims any warranties expressed or implied, including warranties of merchantability and/or fitness for a particular purpose. In no event shall ELTEC be held liable for incidental or consequential damages. Warranty repairs will be handled during normal business hours. Ship flasher requiring warranty service to:

<div align="center">

ELECTROTECHNICS CORPORATION
1310 Commerce Street
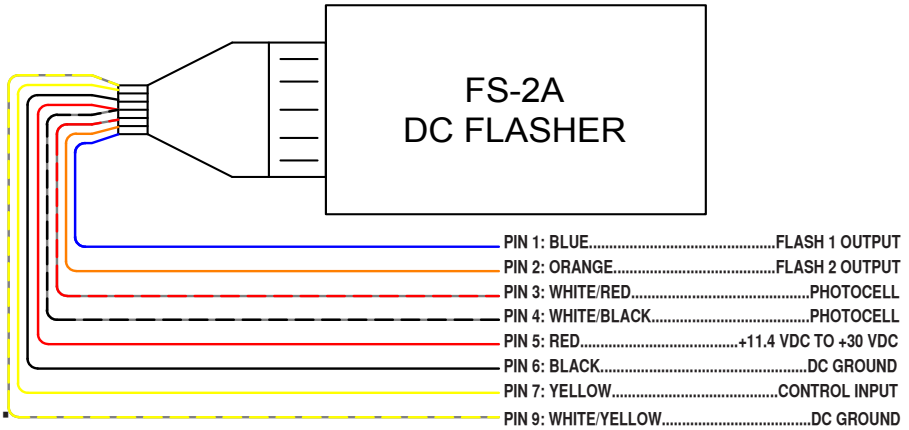Marshall, TX 75672

**Products requiring repair or warranty service must have a
RETURN MATERIAL AUTHORIZATION number (R.M.A.)**

</div>

For an RMA number and/or more information, go to www.ELTECCORP.com and click on TECHNICAL SUPPORT. Tech support can also be reached via e-mail at: company@ elteccorp.com or call us at: 800-227-1734 / 903-938-1901.

Be sure to include the following Product Return Information:
1. Description of problem
2. Model number and serial number
3. Return Address
4. Telephone number and name of contact person

WIRE /CONNECTOR PIN OUT:

FS-2A
DC FLASHER

PIN 1: BLUE..FLASH 1 OUTPUT
PIN 2: ORANGE.......................................FLASH 2 OUTPUT
PIN 3: WHITE/RED..PHOTOCELL
PIN 4: WHITE/BLACK.......................................PHOTOCELL
PIN 5: RED......................................+11.4 VDC TO +30 VDC
PIN 6: BLACK...DC GROUND
PIN 7: YELLOW..CONTROL INPUT
PIN 9: WHITE/YELLOW....................................DC GROUND

Fig. 3

THIS FLASHER IS SET FOR:

Number of circuits_____

Cadence   _____

Dim Option   _____

Night Run Option _____

Lamp Type   _____

Flash Rate   _____

Date: _____

Technician: _____

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