

SBF90

Eight-Lamp School Bus Flasher



Key Features

- Industry Standard Functionality - Compatible with existing bus designs.
- Rugged Anodized Aluminum Case with Sealed Electronics.
- Industry Standard Faston Wiring Terminals and Pin Assignments.
- Ultra Compact Size - Occupies less space than conventional flashers.
- Highly Efficient Power Switching Design - Very low heat loss.

Technical Description

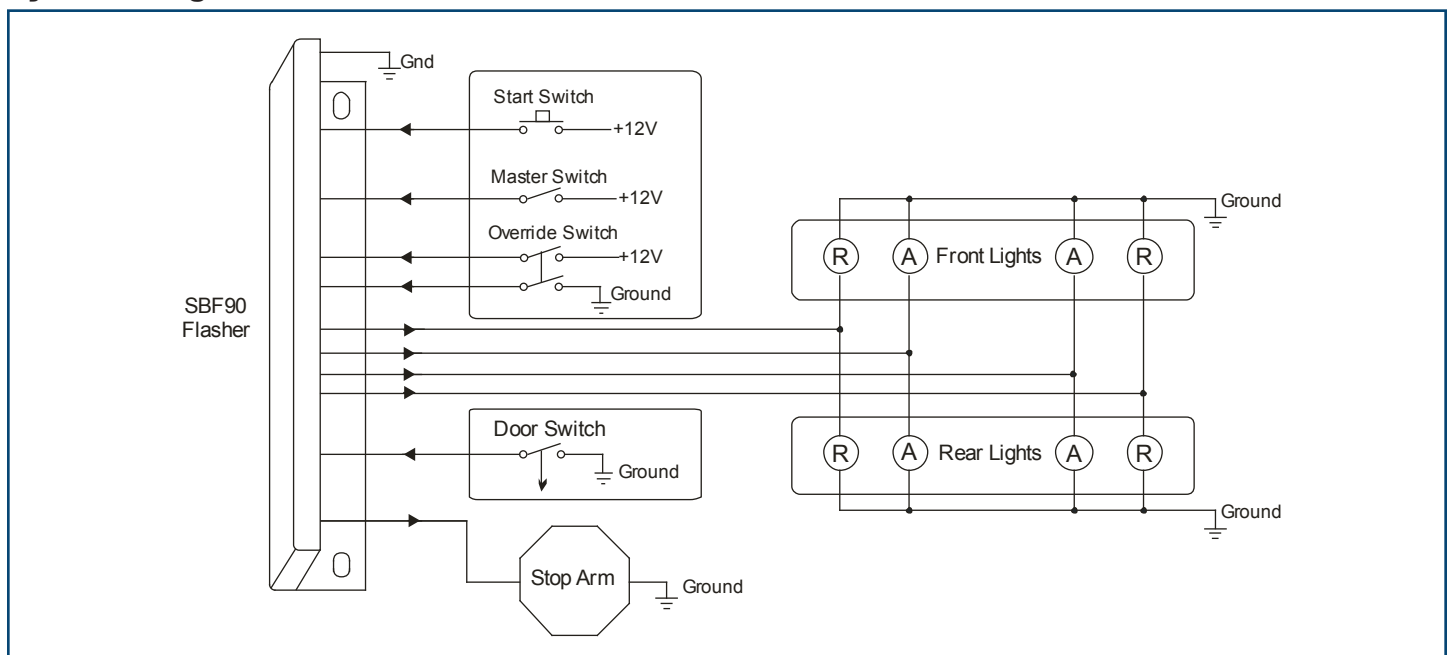
School bus electronic flasher also controls stop-arms and crossing gates

InPower's SBF90 is an advanced electronic warning light flasher designed for the school bus flasher replacement market. Mounting holes, wire terminations and functionality remain identical to the typical electronic flashers used on school buses. Reliable, affordable and compact, the SBF90 is an ideal replacement for older mechanical flashers or for installation in a new bus.

The SBF90 flasher's industry standard functionality allows both sequential and non-sequential operation, and will accommodate 4-lamp and 8-lamp warning light configurations. Each of the lamp outputs (two red and two amber) is rated at 16 amps. The output for the stop arm and crossing gate is rated at 3 amps. Wires are terminated via 0.250 inch Faston blade terminals and are labeled with both terminal numbers and functions.

The design includes safeguards for over current, over temperature, short circuit, and loss of ground. The highly efficient current switching circuit produces very little heat loss. Surface mount technology allows for a compact design, and each board is coated with a silicone coating to protect against dust and moisture. The metal case is made of rugged anodized aluminum.

System Diagram



Specifications

Electrical

Input Voltage:	8 to 16 volts
Output Current (Pins 3, 4, 6 & 7):	16 Amps
Output Current (Pin 5):	3 Amps

Mechanical

Weight:	0.15 lbs
Dimensions:	0.875" W x 1.00" H x 6.50" L
Case Material:	Anodized Aluminum
Operating Temperature:	-40° C to +85° C
Storage temperature:	-50° C to +85° C
Terminals:	0.250 Inch Faston (11 Total)

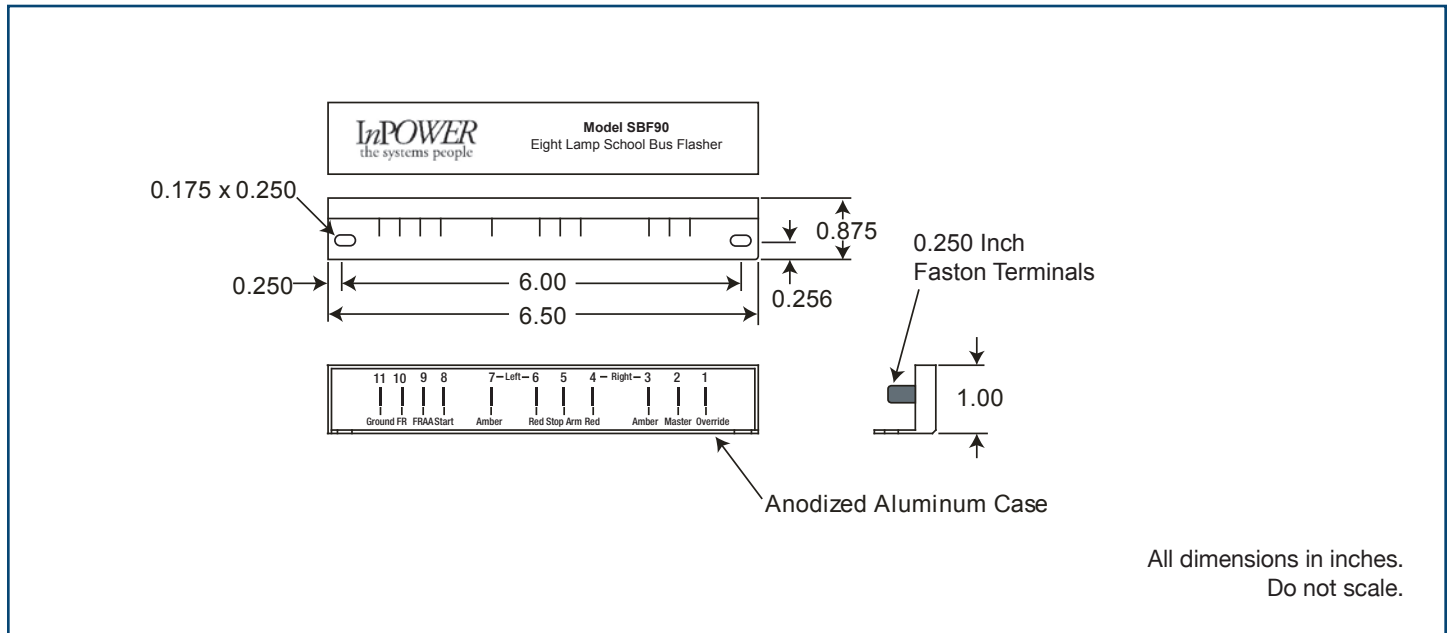
Wire Terminations



Pin Assignments

1	Override	To Override Switch (+12V)	9	FRAA	(Flash Red After Amber).	To Door Switch for Sequential, or no connection for Non-Sequential operation.
2	Master	To Master Switch (+12V)	10	FR	(Flash Red When Door is Opened)	To Override Switch for Sequential, or to Door Switch for Non-Sequential operation.
3	Right Amber	To Right Amber Lamp	11	Ground	Chassis Ground	To Chassis Ground (Battery Negative).
4	Right Red	To Right Red Lamp				
5	Stop Arm	To Stop Arm Solenoid				
6	Left Red	To Left Red Lamp				
7	Left Amber	To Left Amber Lamp				
8	Start	To Start Switch (+12V)				

Mechanical Drawing



SBF94

Eight-Lamp School Bus Flasher



School bus electronic eight-lamp flasher also controls stop-arms and crossing gates.

Technical Description

The Model SBF94 is an advanced connector based warning light flasher in a very small package. Its 2.30 inch x 1.25 inch footprint and Amp Multilock connector makes it ideal for OEM applications, as well as a replacement for Amp Multilock based flashers currently on the market. The SBF94 flasher's industry standard functionality provides sequential and non-sequential operation, and will accommodate both 4-lamp and 8-lamp warning light configurations. Each of the lamp outputs (two red and two amber) are rated at 16 amps. The output for the stop arm is rated at 3 amps.

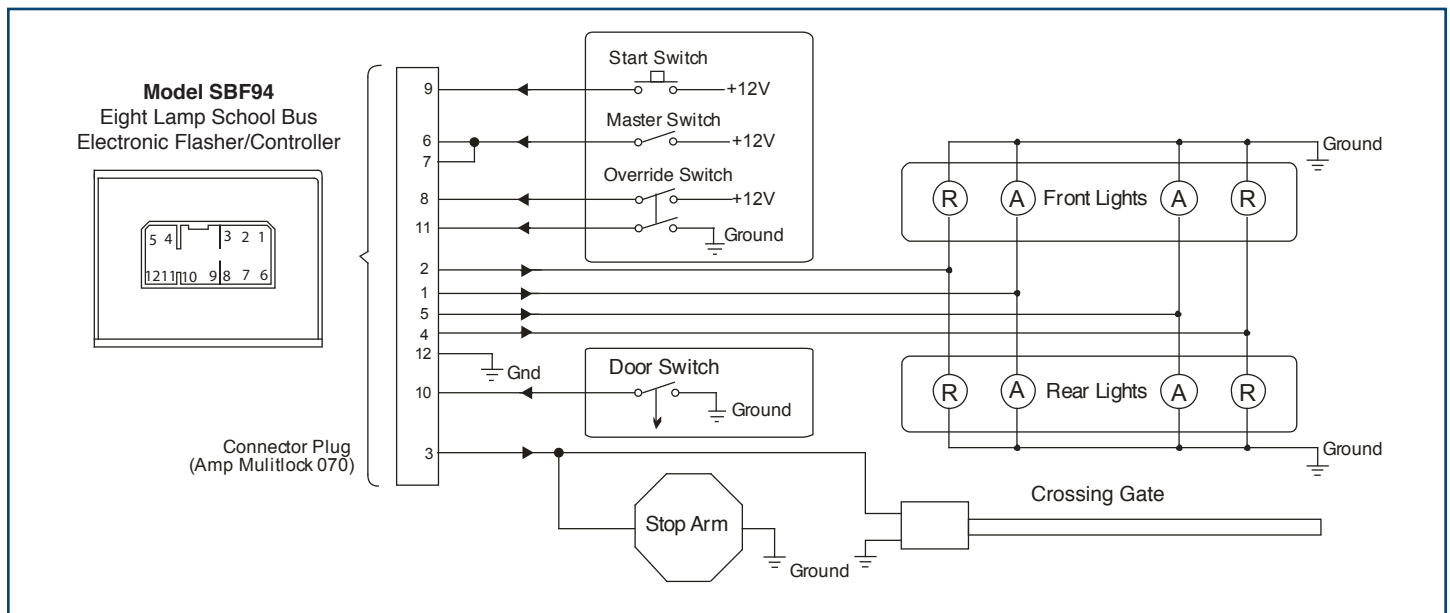
The design includes safeguards for over current, over temperature, short circuit, and loss of ground. A highly efficient current switching circuit is employed that produces very little heat loss. The circuits are made in-house on our very own SMT line. Its metal case is made of rugged anodized aluminum.

The SBF94 utilizes the Tyco/Amp Multilock Series 070 connector system. The 12-pin header (containing male pins) is integral to the flasher case. The 12-pin connector plug (not supplied with the flasher) uses female pins.

Key Features

- Ultra Compact Size - Occupies less space than conventional flashers.
- Connector Based Wiring Terminations - Saves manufacturing time and reduces errors.
- Industry Standard Functions - Compatible with existing bus designs.
- Highly Efficient Power Switching Design - Very low heat loss.
- Rugged Anodized Aluminum Case.

System Diagram



Specifications

Electrical

Input Voltage:	8 to 16 volts
Output Current (Pins 7, 9, 10 & 12):	16 Amps
Output Current (Pin 4):	3 Amps

Mechanical

Weight:	0.15 lbs
Case Material:	Anodized Aluminum
Operating Temperature:	-40° C to +85° C
Storage temperature:	-50° C to +85° C

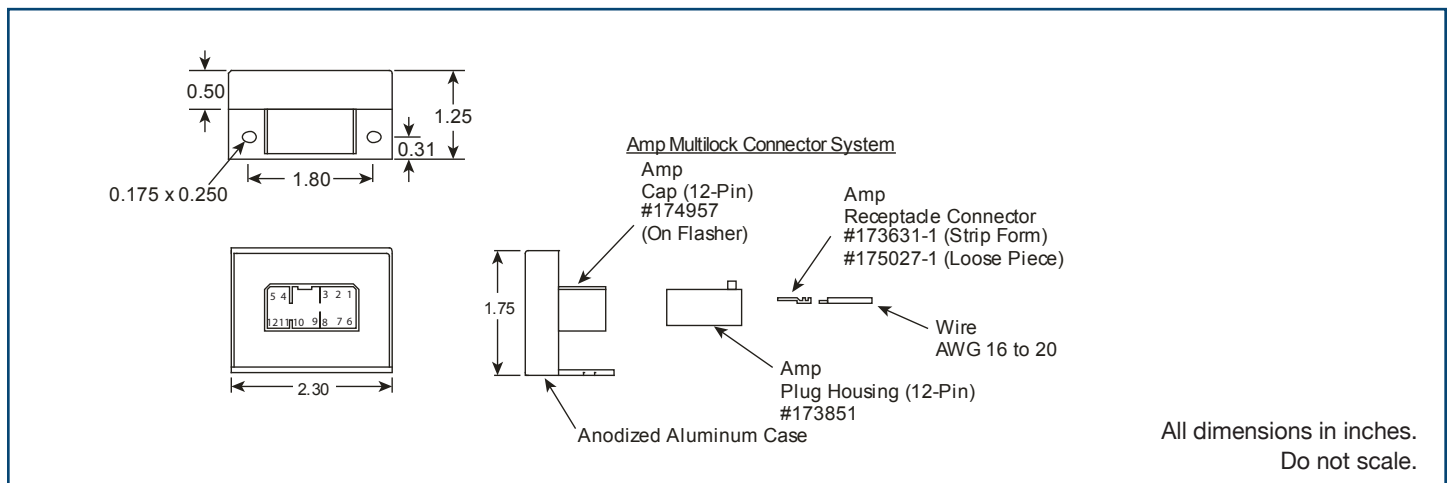
Connector System:

Cap (On Flasher):	Tyco/Amp Multilock Series 070 12-pin (Amp p/n 174957)
Plug Housing:	12-pin (Amp p/n 173851 or 176116)
Cap Contacts:	Male Pins (supplied with flasher)
Plug Housing Contacts:	Female Socket (Amp p/n 173631-1 or 175027-1)
Reference:	Tyco/Amp Catalog 65839

Pin Assignments

1	Left Amber	To Left Amber Lamp
2	Left Red	To Left Red Lamp
3	Stop Arm	To Stop Arm Solenoid
4	Right Red	To Right Red Lamp
5	Right Amber	To Right Amber Lamp
6, 7	Master	To Master Switch (+12V)
8	Override	To Override Switch (+12V)
9	Start	To Start Switch (+12V)
10	FRAA	(Flash Red After Amber). To Door Sw. for Sequential, or no connection for Non-Sequential.
11	FR	(Flash Red When Door is Opened). To Override Sw. for Sequential, or Door Sw. (Gnd) for Non-Sequential.
12	Ground	To Ground Chassis Ground (Baterly Negative).

Mechanical Drawing





VCM-08 Dual 15 Amp Alternating Lamp Flasher

InPower's VCM Series *Vehicle Control Modules* are a set of tools for the designers of vehicle electrical control systems. Designed to withstand the environments typically found on trucks, emergency vehicles, buses, coaches and speciality vehicles, these modules are available in a variety of standard and custom configurations and functions.

Technical Description

The InPower VCM-08 warning lamp flasher is a compact, high performance flasher with exceptional reliability and low cost.

The VCS-08 flasher is a completely solid state dual output alternating arning lamp flasher. Its outputs are rated at +12 volts @ 15 amps each, and are designed to operate high in-rush current halogen and incandescent lamps, as well as LED lights.

When a ground is applied to the input, the outputs will alternately flash at a rate of 75 cycles per minute at a 50% duty cycle. The solid state outputs will automatically shut off if an over current or short circuit fault occurs. If a fault shut down occurs on one output the other output will remain operational.

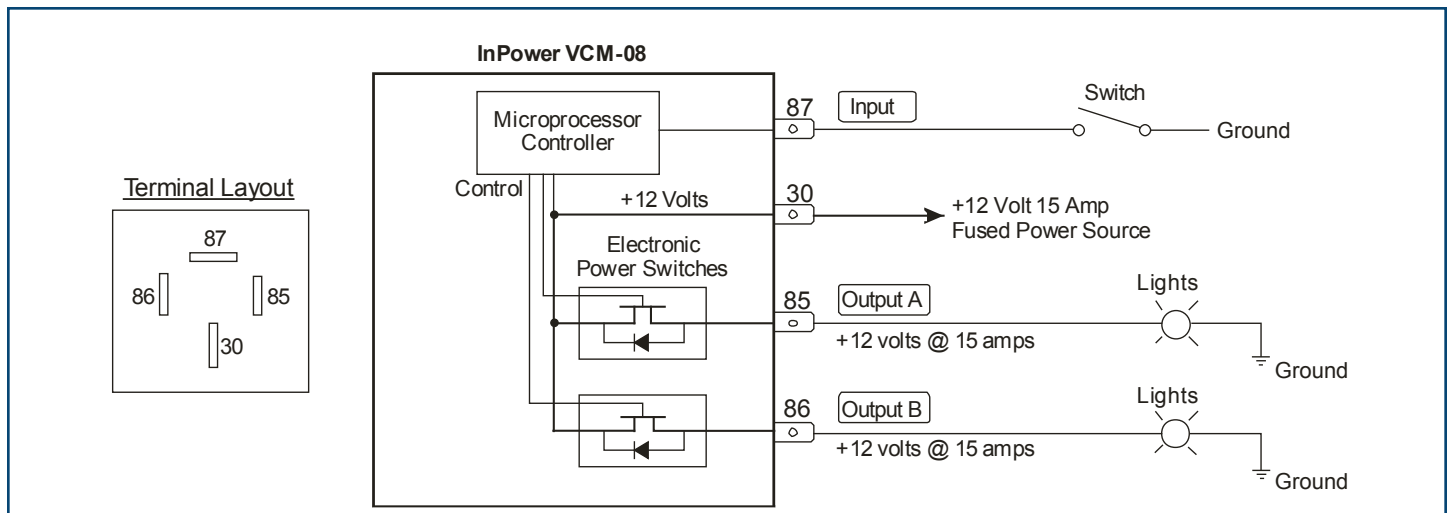
Key Features

- 100% Solid State Construction
- Operated Halogen and LED Lights
- Standard Automotive Relay Pin Format
- Dual 12 Volt 15 Amp Solid-State Outputs
- Compact Size With Panel-Mount Bracket
- High Technology Power Switching Clrcuit
- Durable Metal Case

Ordering Guide

Model	Description
VCM-08	Solid-state alternating lamp flasher with single input and two +12 volt @ 15 amp outputs.

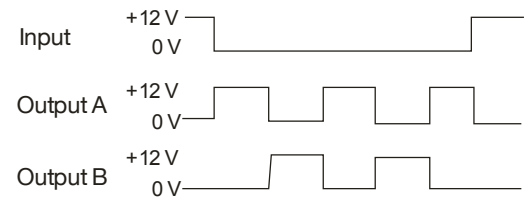
System Diagram



Specifications

Power Input (30):	+8 to 16 Vdc @ 15 amps
Control Input (87):	External contact closure to ground
Output A (85):	+12 volts @ 15 amps
Output B (86):	+12 volts @ 15 amps
Flash Rate:	75 per minute
Mechanical	
Weight:	0.10 lbs.
Operating Temperature:	-40° C to +85° C

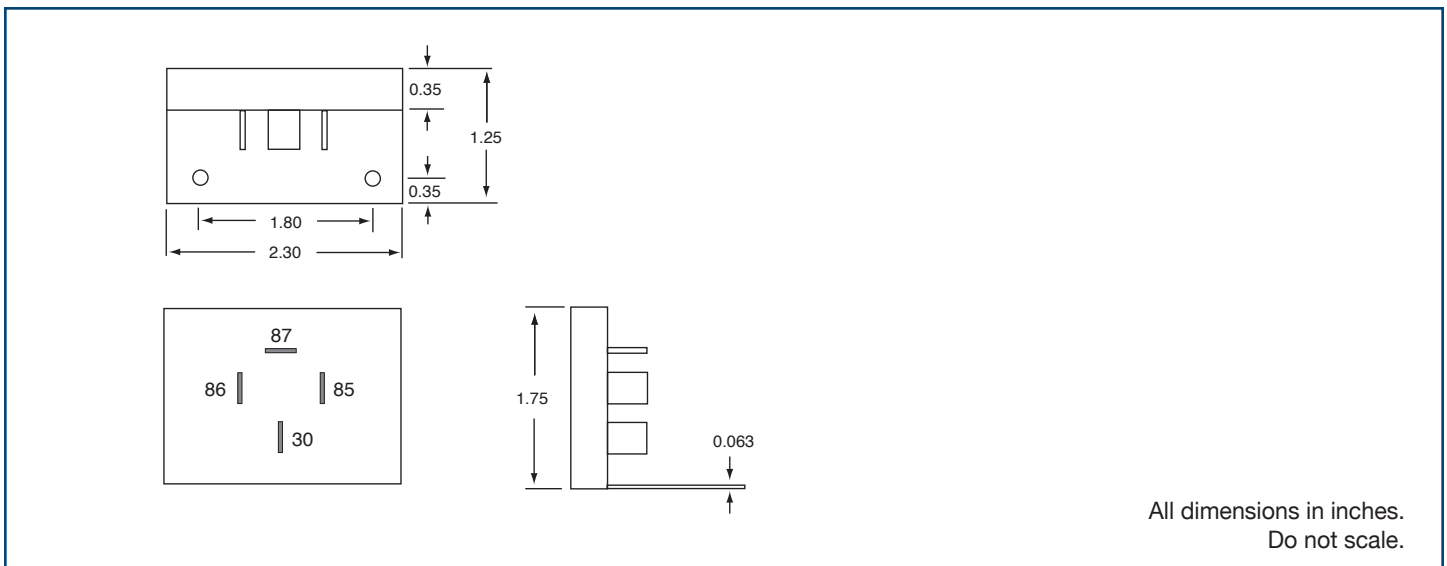
Timing Diagram



Installation

1. We recommend that the module be installed by a person trained and skilled in vehicle electrical systems. The installation should comply with SAE (Society of Automotive Engineers) and the vehicle manufacturer's electrical wiring procedures (e.g., Ford, General Motors, etc.).
2. The module should be installed on the inside of the vehicle in a dry and protected environment.
3. For optimum power output performance the product should be mounted to a metal surface.
4. Do not connect loads to the output that will exceed the output current rating of the module.
5. The 12 volt power input (30) must be from a properly fused +12 volt power source.
6. Wiring must be of the proper gage and type to handle the intended load currents.
7. We recommend the use of insulated 1/4 inch female blade terminals that connect to the terminals on the module. Be sure to properly crimp these terminals. **Do not solder wires directly to the module terminals.**
8. If you are experiencing problems with the installation or need troubleshooting assistance, contact InPower Customer Service at 740-548-0965.

Mechanical Drawing



Programmable Ambulance Flasher

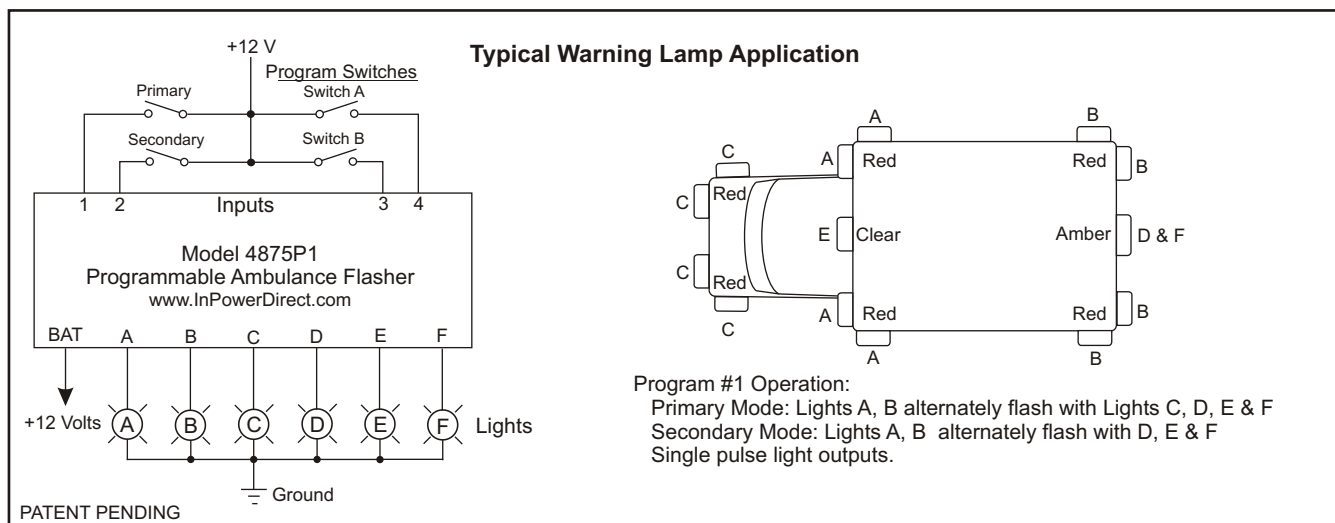
Model 4875P1



Key Features

- Stores Four Selectable Flash Programs
- Multiple Pulse Flash Patterns
- Operates LED Warning Lights
- Conforms to specification KKK-A-1822D/E/F
- Automatic Over Current Fault Shutdown
- Ultra Compact Size
- Durable Metal Case

System Diagram



InPower's Model 4875P1 programmable flasher offers unparalleled flexibility for LED ambulance warning light applications. This "smart" flasher stores four selectable flash programs, offering a wide range of lamp flash patterns. For example, a flash program is included that meets the Federal KKK-A-1822E/F specification. Other flash programs offer similar six light alternating flash operation but with double and triple pulse light outputs.

Flash programs are selected via four signal inputs, activated by +12 volts. Input 1 & Input 2 are activated by Primary Mode and Secondary Mode switches. Input 3 & Input 4 are connected to +12 volts to select the desired flash program. These inputs could be from program select switches or hard wired.

The six light outputs are rated at 15 amps and provide over current automatic fault shutdown. Wiring terminations utilize standard ¼ faston (blade) terminals.

The 4875P programmable flasher is very small, occupying a 4.1 x 1.8 inch footprint. It also has a very low profile of 0.55 inch (without wires attached).

Contact InPower for other available flash programs.

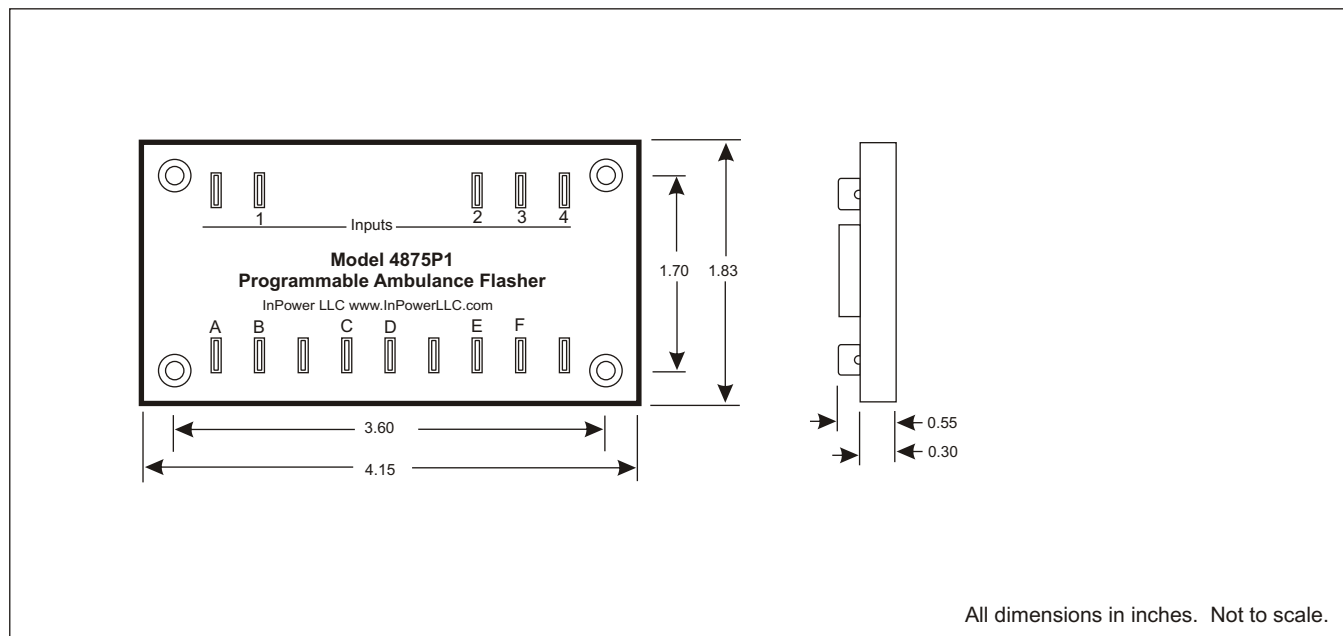
Programmable Ambulance Warning Light Flasher

Model 4875P1

Specifications

Operating Voltage Range:	+6.0 to +19.0 volts
Output Current Rating:	15 amps per channel, 45 amps total
Flash Rate:	75 per minute
Control Inputs:	
Connector Type:	0.250 inch faston blade terminals
Control Inputs :	+12 Volts activate
Protection:	Over current shutdown
Weight:	0.18 lbs
Dimensions:	4.15 x 1.83 x 0.57 inches
Power Terminals:	0.250 inch faston blade terminals

Mechanical Drawing



InPOWER LLC

Offered by: