

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

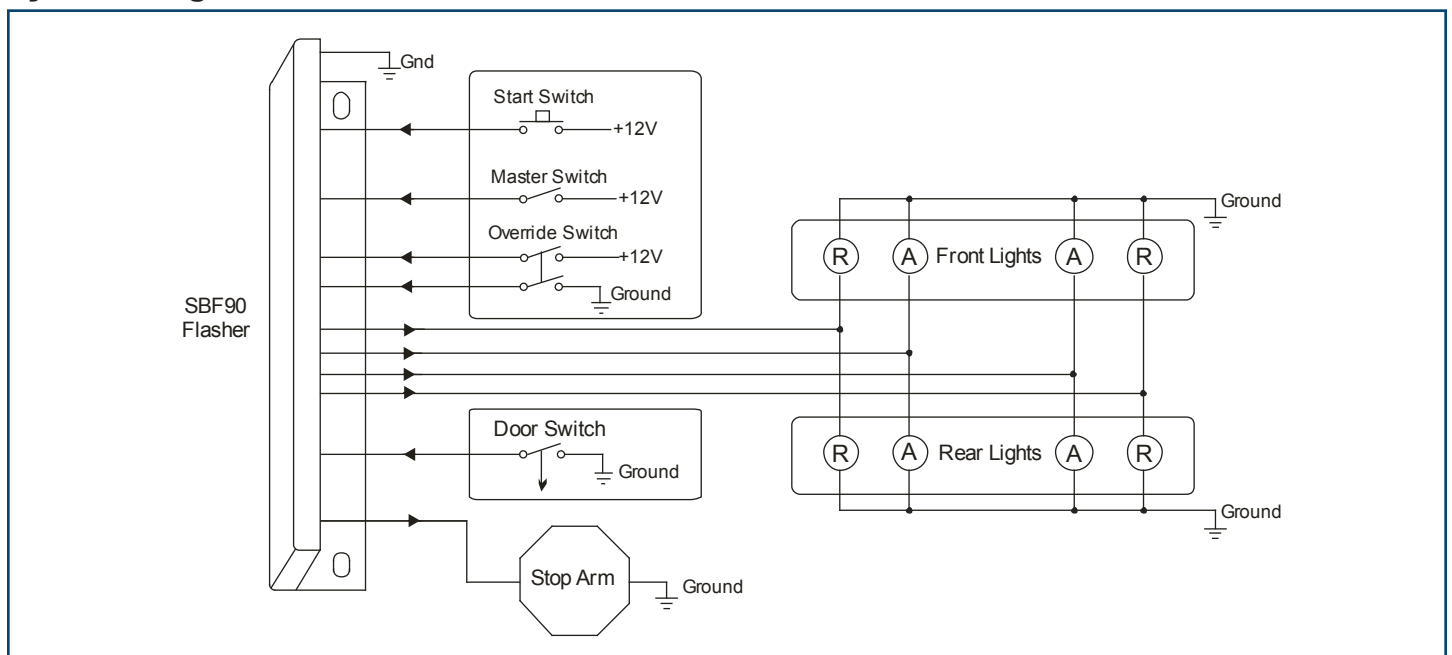
School bus electronic flasher also controls stop-arms and crossing gates

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)

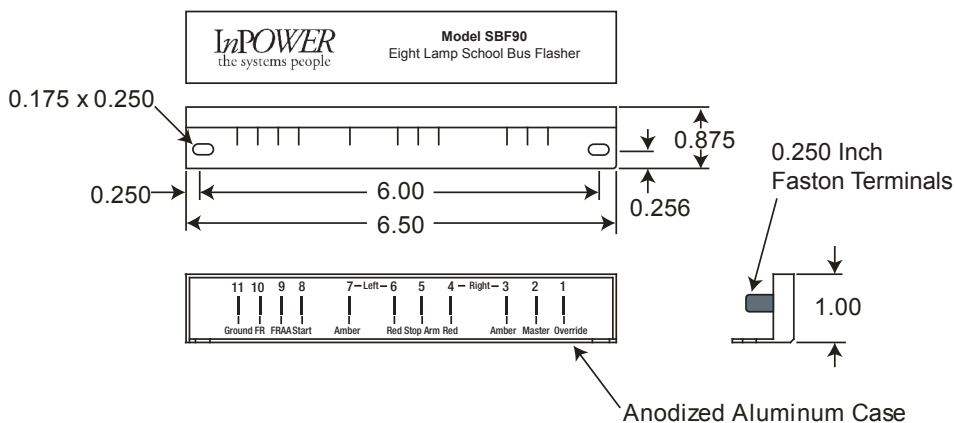
Wire Terminations



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)				

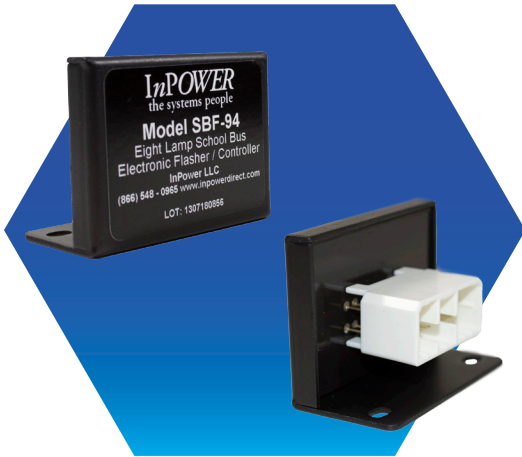
Mechanical Drawing



All dimensions in inches.
Do not scale.

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.

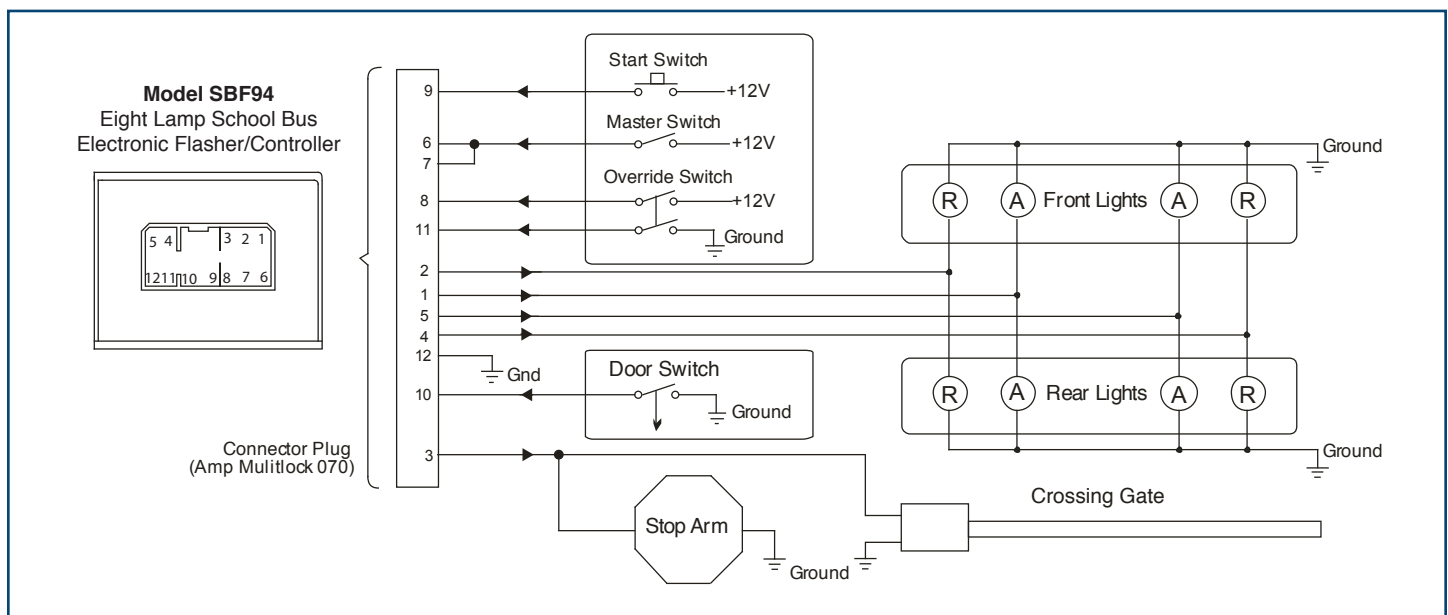
The design includes safeguards for over current, over temperature, short circuit, and loss of ground. A highly efficient current switching circuit is employed that produces very little heat loss. The circuits are made in-house on our very own SMT line. Its metal case is made of rugged anodized aluminum.

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

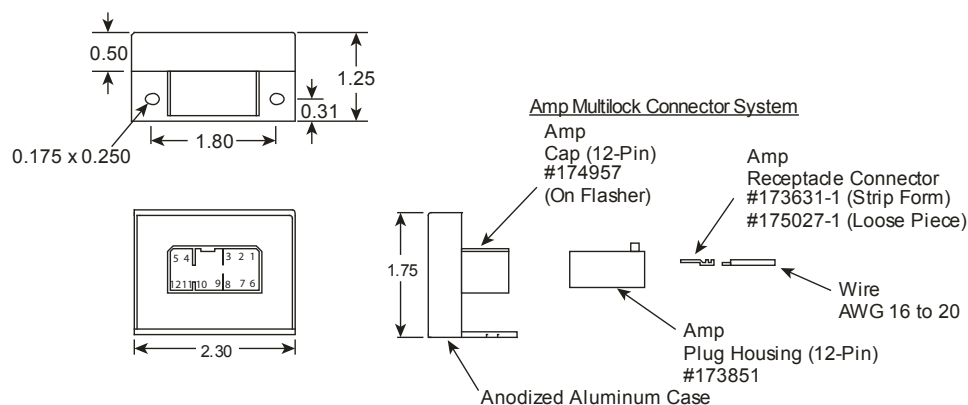
Connector System:

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 (Battery Negative).

Mechanical Drawing



All dimensions in inches.
Do not scale.



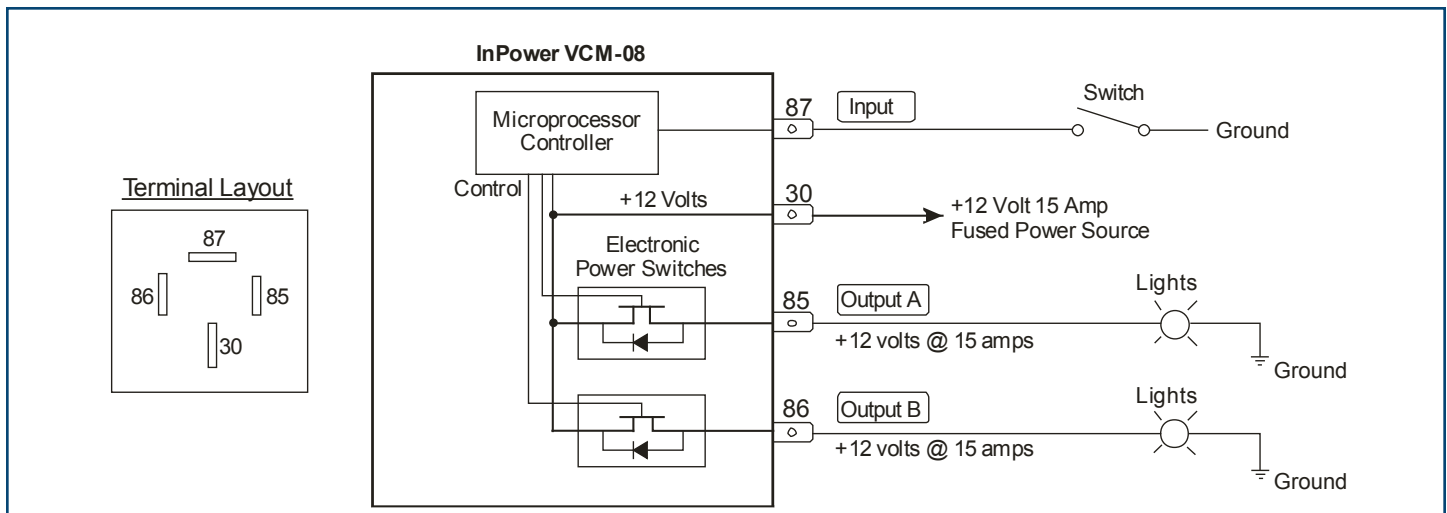
Key Features

- 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 Circuit
- 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

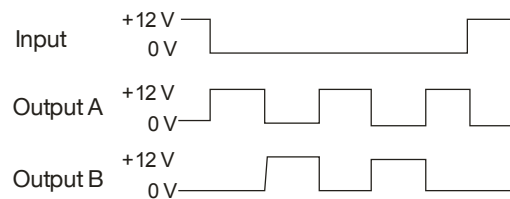


Specifications

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

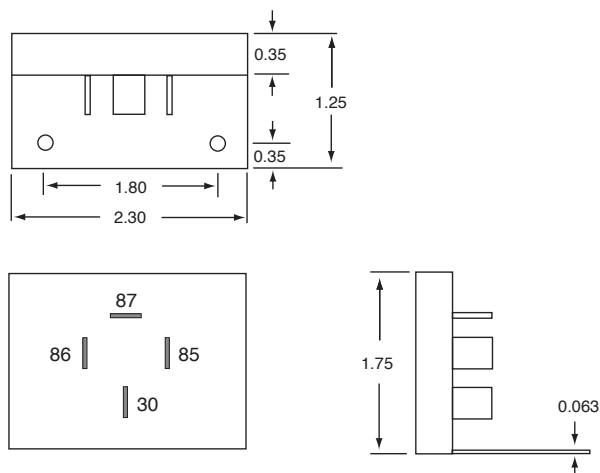
Timing Diagram



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.

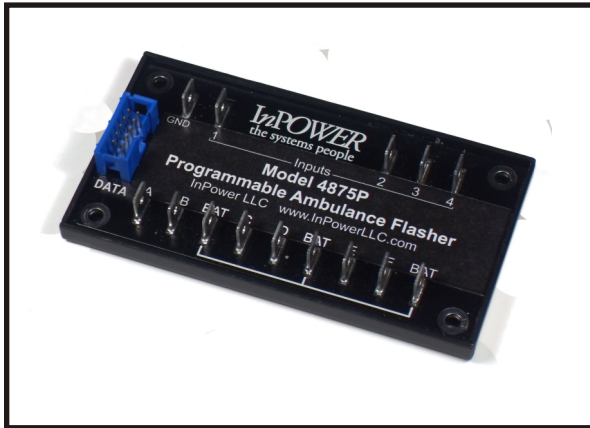
Mechanical Drawing



All dimensions in inches.
Do not scale.

Programmable Ambulance Flasher

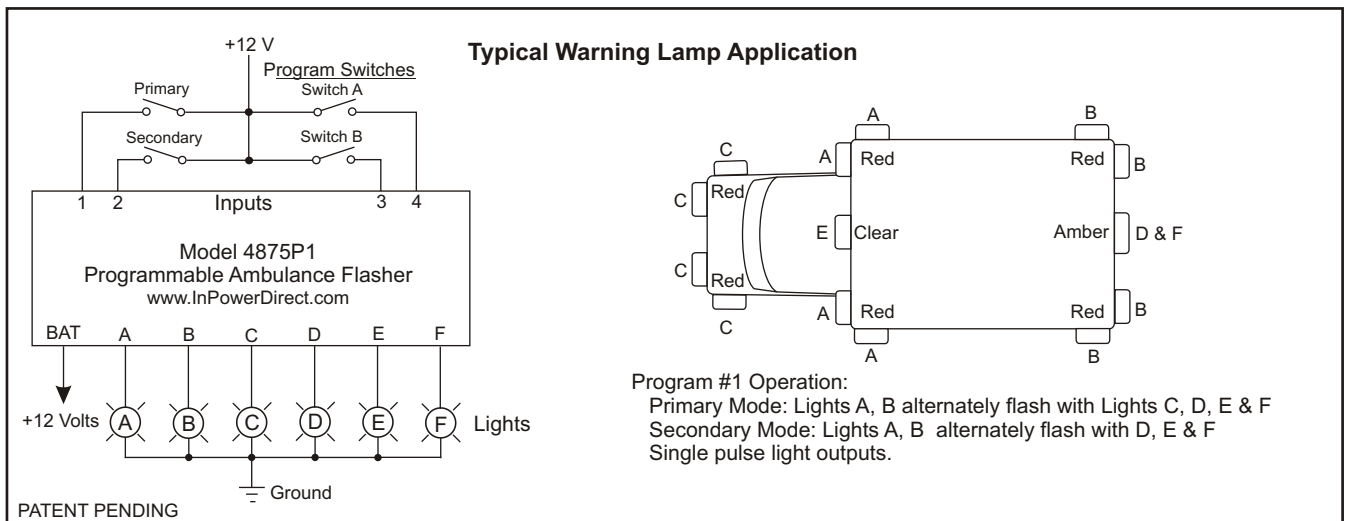
Model 4875P1



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



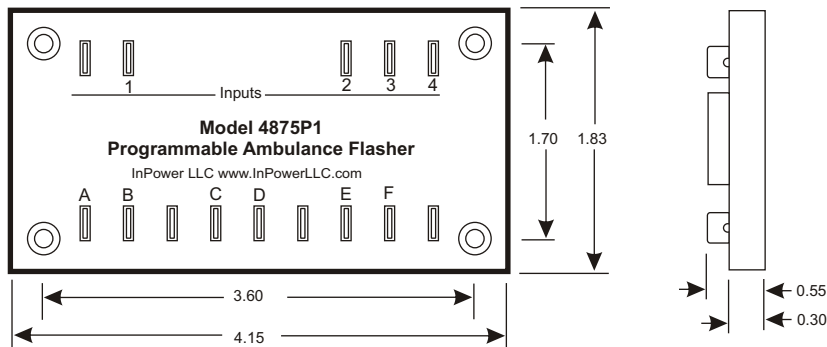
Programmable Ambulance Warning Light Flasher

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



All dimensions in inches. Not to scale.

InPOWER LLC

Offered by: