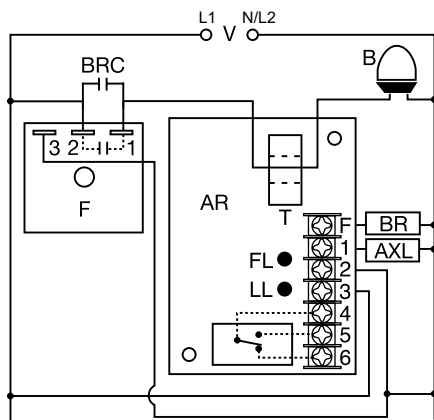


# FB9L

## Universal Lamp Alarm Relay



### Wiring Diagram



- V = Voltage
- B = Beacon
- F = Flasher
- BRC = Flasher Bypass Relay Contacts
- T = Toroid
- AR = FB Alarm Relay
- BR = Bypass Relay Coil
- FL = Flasher Failure LED
- LL = Lamp Failure LED
- AXL = Lamp Alarm Relay Coil

NOTE: Flasher module may be located on either the line or load side of the toroidal sensor.

### Description

The FB9L is a universal lamp alarm relay designed to sense the failure of flashing LED beacon lamps. It will monitor the operation of one to eight beacons connected to a single flasher and/or auxiliary modules and the operation of the flasher. The FB9L output relay energizes when one or more lamps fail. All monitored lamps must be the same wattage and voltage. The 0.5A solid-state output energizes when a flasher failure is sensed.

### Operation

When a LED beacon lamp fails, the FB9L senses a decrease in current flow. After a 10s lamp failure trip delay, the isolated SPDT (4-5-6) and non-isolated SPNO (3-1) relay contacts energize. These contacts are used to indicate a beacon failure has occurred. The "L" onboard LED indicator flashes green during the trip delay and glows red after the output relay energizes. Connected to a site monitoring system, it provides remote beacon monitoring required by FAA-AC No: 150/5345-43E.

The FB9L also monitors the operation of the flasher. If the flasher remains in the ON or OFF condition for more than 6s the solid-state output energizes and the "F" flasher failure, onboard LED glows red. This output is normally used to energize an external flasher bypass relay. The contacts of the bypass relay are used to route voltage around the failed flasher and to indicate an alarm condition.

**Note:** In a single flasher, single beacon system, if the beacon lamp fails, zero current flow is detected. This will cause the flasher failure output to energize after 6s and then the beacon failure outputs after 10s. This is normal operation and can be expected anytime zero current is flowing through the monitored conductor.

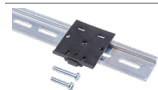
### Features & Benefits

FEATURES	BENEFITS
<b>Self calibrating</b>	Saves time at installation. No fine adjustment required.
<b>Failsafe beacon monitoring</b>	Alarm monitors for failed LED lamps in addition to flasher function
<b>Number of beacons monitored is switch selectable for up to 8</b>	User selection allows quick set up and easy adaption to multiple applications
<b>Universal voltage 120 to 230VAC</b>	Meets wide application requirements
<b>Isolated, 10A, SPDT alarm output contacts</b>	Provides remote beacon monitoring when connected to a site monitoring system, which is required by the FAA

### Accessories



**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



**P1023-20 DIN Rail Adapter**  
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

# FB9L

## Specifications

### Sensors

<b>Calibration Range (total all Lamps)</b>	150mA - 8.0A
<b>Absolute Max Current (total all Lamps)</b>	15A max. (may not calibrate above 8A)
<b>Single Lamp Current</b>	150mA - 8.0A (total all lamps ≤ 8.0A)
<b>Trip Delay</b>	
<b>Flasher Failure</b>	Fixed at 6s; -0/+40%
<b>Lamp Failure</b>	Fixed at 10s; -0/+40%
<b>Input</b>	
<b>Input Voltage/Tolerance</b>	120 to 230VAC / ±15%
<b>AC Line Frequency</b>	50/60Hz
<b>Output</b>	To operate a spare lamp or alarm
<b>Line Voltage Output (SPNO)</b>	5A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
<b>Isolated Alarm Output (SPDT)</b>	10A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
<b>Solid-State Line Voltage Output (F)</b>	0.5A steady; 5A inrush
<b>Mechanical</b>	
<b>Mounting</b>	One #10 (M5 x 0.8) screw
<b>Dimensions</b>	<b>H</b> 76.7 mm (3"); <b>W</b> 50.8 mm (2"); <b>D</b> 41.7 mm (1.64")
<b>Termination</b>	IP20 screw terminals for up to 14 AWG (2.45 mm <sup>2</sup> ) wire or two 16 AWG (1.3 mm <sup>2</sup> ) wires

### LEDs

<b>Power/Timing/Lamp Failure (Bi-color)</b>	Glows red when one or more lamps fail
<b>Flasher Failure (Red)</b>	Glows red when the flasher fails

### Protection

<b>Circuitry</b>	Encapsulated
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### Environmental

<b>Operating/Storage Temperature</b>	-40° to 60°C / -40° to 85°C
<b>Weight</b>	≈ 3.9 oz (111 g)
<b>FAA-AC No.</b>	150/5345-43E

## Indicator Table

L	Green	Input ON & Calibrated
L	Green Flashing	Trip Delay
L	Red	Lamp Failure
L	Red/Green Flashing	Calibrating
L	Red Flashing	Not Calibrated
F	Red	Flasher Failure