FLASHERS & TOWER LIGHTING CONTROLS

Flashers for incandescent or LED lighting used with both alternating and non-alternating applications in the signaling, communications, and advertising industries. FAA approved versions for obstruction lighting control are available. Tower lighting illuminates communications towers, tall buildings, and bridges as required by FA regulation. Designs are also available for powered AM and FM towers.

Flashers

Tower and Obstruction Lighting Controls

FSU1000 SERIES

Description

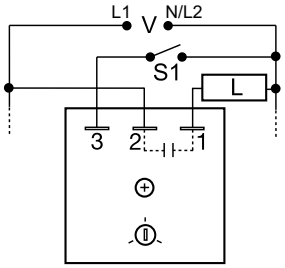
The FSU1000 incorporates an onboard adjustable flash rate of 10 to 100 FPM and a universal input voltage in one device. Its circuitry is encapsulated and is capable of controlling loads of up to 20A. The versatility of the FSU1000 makes it ideal for applications where various flash rates and operating voltages are required.

Operation

When input voltage is applied to terminal 2 and the load (lamp), the load energizes steadily. When input voltage is applied to terminal 3, the output flashes.

Optional Low Current Switch (S1): This low current switch could be a limit switch or contact. While open, the operator sees the load (lamp) ON and operating. When the limit switch closes, the load (lamp) flashes to attract attention.

Wiring Diagram



V = Voltage
S1 = Optional low current switch
L = Load

For dimensional drawing see: Appendix, page 512, Figure 19.

Features & Benefits

FEATURES	BENEFITS
Universal input voltage 24 to 240VAC	Allows flexibility for a wide range of applications with one part
Onboard adjustable flash rate	Provides flexibility for user to select flash rate between 10 - 100 FPM
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
High output rating up to 20A, 200A inrush	Allows direct operation of high current loads without a contactor

Accessories

P1015-13 (AWG 10/12), **P1015-64** (AWG 14/16), **P1015-14** (AWG 18/22) **Female Quick Connect** These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

Ordering Information

MODEL	INRUSH RATING	LOAD RATING
FSU1000	10A	1A
FSU1003	60A	6A
FSU1004	100A	10A
FSU1005	200A	20A

If you don't find the part you need, call us for a custom product 800-843-8848

FSU1000 SERIES

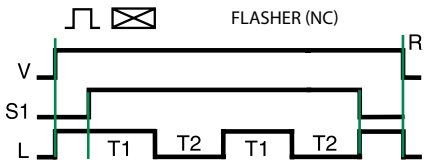
Specifications

Technical Data

Operation	ON/OFF recycling solid-state flasher (continuous duty)
Flash Rate	Adjustable 10 - 100 FPM
ON/OFF Ratio	≅ 50%
Input	
Range/Frequency	24 to 240VAC / 50/60Hz
Output	
Load Type	Inductive, resistive, or incandescent
Maximum Load Rating	1, 6, 10, or 20A steady state
Inrush	10 times steady state current
Mechanical	
Mounting*	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	
FSU1000	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 30.7 mm (1.21")
FSU1003, FSU1004	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 38.4 mm (1.51")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Protection	
Circuitry	Encapsulated
Environmental	
Operating/Storage Temperature	-20° to 60°C (240VAC +50°C) / -40° to 85°C
Weight	1A units: ≅ 2.4 oz (68 g) ≥ 6A units: ≅ 3.9 oz (111 g)

*Units rated > 6A must be bolted to a metal surface using the included heat sink compound. The maximum mounting surface temperature is 90°C.

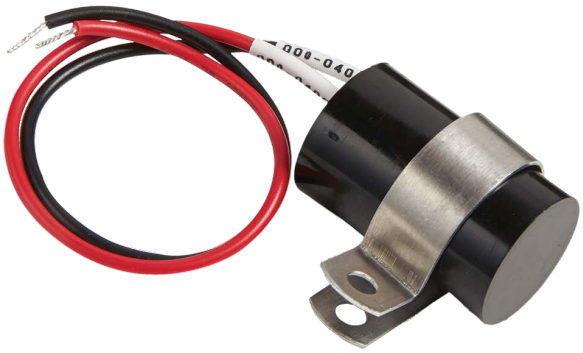
Flasher Function Diagram



V = Voltage
S1 = Initiate Switch
L = Load
R = Reset
T1 = ON Time
T2 = OFF Time
T1 ≅ T2

FS100 SERIES

Low Current Flasher



Description

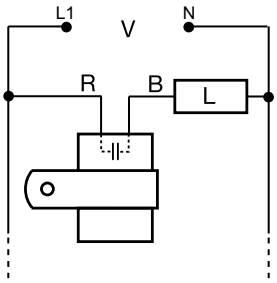
The FS100 Series (low current) may be used to control inductive, incandescent or resistive loads. This series offers a 1A (fullwave) or a 2A (halfwave) steady state, 10A inrush solid-state output and may be ordered with an input voltage of 24 or 120VAC. The FS100 Series offers a factory fixed flash rate of 75 FPM or may be ordered with a fixed, custom flash rate ranging from 45 to 150 FPM. Ideal for OEM applications where cost is a factor.

Operation

Upon application of input voltage, the T2 OFF time begins. At the end of the OFF time, the T1 ON time begins and the load energizes. At the end of T1, T2 begins and the load de-energizes. This cycle repeats until input voltage is removed.

Reset: Removing input voltage resets the output and the sequence to T2.

Wiring Diagram



V = Voltage
L = Load
R = Red Wire
B = Black Wire

For dimensional drawing see: Appendix, page 512, Figure 25.

Features & Benefits

FEATURES	BENEFITS
Compact Size: 38 x 23.9mm (1.5" x 0.94")	Ideal for OEM applications
Custom Flash Rates Available	Tailor to specific application: custom rates range from 45 to 150 FPM

Accessories

P1023-2 "P" Clamp
Mounting Bracket Alum. 15/16

Ordering Information

MODEL	INPUT VAC	OUTPUT RATING A	OUTPUT TYPE AC	LOAD TYPE	FLASH RATE
FS126	120	1	Fullwave	Incandescent & Resistive	75 FPM
FS126-45	120	1	Fullwave	Incandescent & Resistive	45 FPM
FS126-60	120	1	Fullwave	Incandescent & Resistive	60 FPM
FS126RC	120	1	Fullwave	Incandescent, Resistive, & Inductive	75 FPM
FS126RC-45	120	1	Fullwave	Incandescent, Resistive, & Inductive	45 FPM
FS127	120	2	Halfwave	Incandescent & Resistive	75 FPM
FS146	24	1	Fullwave	Incandescent & Resistive	75 FPM
FS146RC	24	1	Fullwave	Incandescent, Resistive, & Inductive	75 FPM

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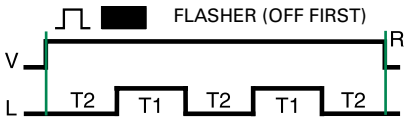
FS100 SERIES

Low Current Flasher

Specifications

Technical Data	
Operation	OFF/ON solid-state flasher (continuous duty)
Flash Rate	Factory fixed at 75 FPM ±20%
Custom Flash Rates Available	From 45-150 FPM ±20%
ON/OFF Ratio	≅ 50%
Input	
Voltage	24, 120VAC, ±15%
AC Line Frequency	50/60Hz
Output	
Output	Fullwave AC or Halfwave rectified AC
Load Type	Incandescent, resistive, or inductive (Choose RC suffix for inductive loads)
Maximum Load Rating	Fullwave: 1A steady state Halfwave: 2A steady state
Inrush	10A
Mechanical	
Mounting	Removable mounting bracket, use one #8 (M4 x 0.7) screw
Connection/Wires	18 AWG (0.82mm2) wires 6 in. (15.2cm)
Dimensions	**H** 38.1 mm (1.5"); **W** 23.9 mm (0.94")
Protection	
Circuitry	Encapsulated
Environmental	
Operating/Storage Temperature	-20° to 60°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 1.1 oz (31 g)

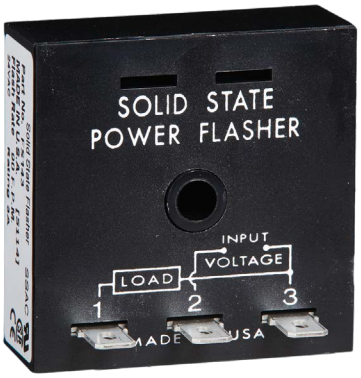
Flasher Function Diagram



V = Voltage
R = Reset
L = Load
T1 = ON Time
T2 = OFF Time
T1 ≅ T2

FS100 SERIES

Medium Power Flasher



Description

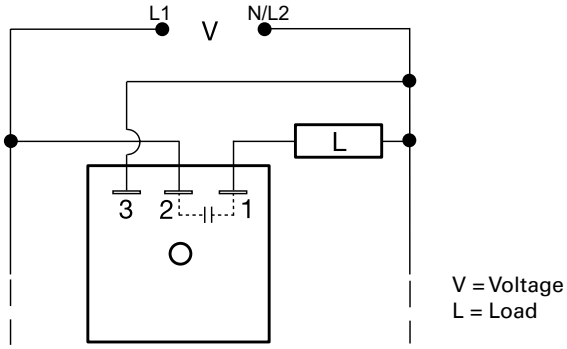
The FS100 Series (medium power) may be used to control inductive, incandescent, or resistive loads. Input voltages of 24, 120, or 230VAC are available. Fixed flash rates in stock range from 30, 50, 60, and 90 FPM, with custom flash rates ranging from 10 to 300 FPM. Encapsulation provides protection against shock, vibration, and humidity. This group of solid-state flashers has proven reliability with years of use throughout the world.

Operation

Upon application of input voltage, the T2 OFF time begins. At the end of the OFF time, the T1 ON time begins and the load energizes. At the end of T1, T2 begins and the load de-energizes. This cycle repeats until input voltage is removed.

Reset: Removing input voltage resets the output and the sequence to T2.

Wiring Diagram



For dimensional drawing see: Appendix, page 512, Figure 16.

Features & Benefits

FEATURES	BENEFITS
3A steady, 30A inrush current	Provides direct control of inductive, incandescent, or resistive loads
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity

Accessories

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P1015-64 (AWG 14/16)
Female Quick Connect
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

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.

Ordering Information

MODEL	INPUT	FLASH RATE
FS143	24VAC	90 FPM
FS152	120VAC	90 FPM
FS152-30	120VAC	30 FPM
FS152-60	120VAC	60 FPM
FS162	230VAC	90 FPM
FS162-30	230VAC	30 FPM

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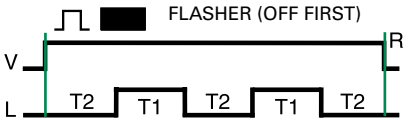
FS100 SERIES

Medium Power Flasher

Specifications

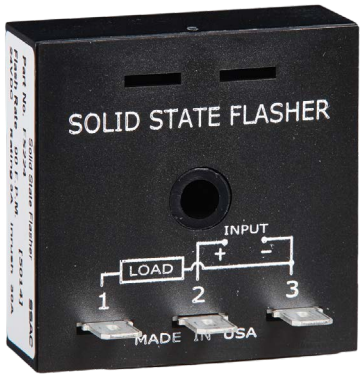
Technical Data	
Operation	OFF/ON solid-state flasher (continuous duty)
Flash Rate	Fixed at 90 FPM ±10%
Custom Flash Rates	10 - 300 FPM ±10%
ON/OFF Ratio	≅ 50%
Input	
Voltage/Frequency	24, 120, or 230VAC ±15% / 50/60 Hz
Output	
Load Type	Inductive, resistive, or incandescent
Output	Fullwave AC, solid state, SPST
Maximum Load Rating	3A steady state
Inrush	10 times steady state current
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 30.7 mm (1.21")
Termination	0.25 in. (6 .35 mm) male quick connect terminals
Protection	
Circuitry	Encapsulated
Environmental	
Operating/Storage Temperature	-20° to 60°C / -40° to 85°C
Weight	≅ 2.2 oz (62 g)

Flasher Function Diagram



V = Voltage
R = Reset
L = Load
T1 = ON Time
T2 = OFF Time
T1 ≅ T2

FS200 SERIES



Description

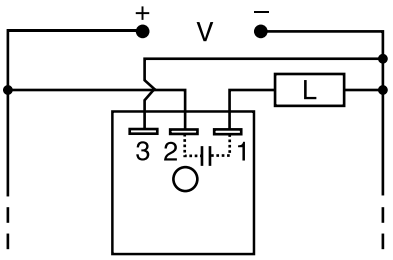
The FS200 Series may be used to control inductive, incandescent, or resistive loads. Factory fixed flash rate of 45 or 90 FPM or may be ordered with a fixed custom flash rate ranging from 10 to 180 FPM. Encapsulation provides protection against shock, vibration, and humidity. Uniform performance, high inrush current capability, and low RFI, make this series ideal for general industrial applications.

Operation

Upon application of input voltage, the T2 OFF time begins. At the end of the OFF time, the T1 ON time begins and the load energizes. At the end of T1, T2 begins and the load de-energizes. This cycle repeats until input voltage is removed.

Reset: Removing input voltage resets the output and the sequence to T2.

Wiring Diagram



V = Voltage
L = Load

For dimensional drawing see: Appendix, page 512, Figure 16.

Features & Benefits

FEATURES	BENEFITS
3A steady, 30A inrush, SPST output contact	Provides direct control of inductive, incandescent, or resistive loads
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
High inrush current capability and low RFI	Ideal for general industrial applications

Accessories

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P1015-64 (AWG 14/16)
Female Quick Connect
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

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.

Ordering Information

MODEL	INPUT	RATING	FLASH RATE
FS219-45	12VDC ± 20%	3A	45 FPM
FS224	24VDC ± 20%	3A	90 FPM

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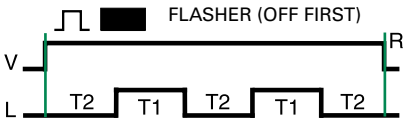
FS200 SERIES

Specifications

Technical Data	
Operation	OFF/ON solid-state flasher (continuous duty)
Flash Rate	Fixed at 90 FPM ±10%
Custom Flash Rate	10 - 180 FPM
ON/OFF Ratio	≅ 50%
Input	
Voltage	12, 24, 36, 48, or 110VDC
Output	
Load Type	Inductive, resistive, or incandescent
Maximum Load Rating	0.25 - 3A steady state
OFF State Leakage Current 12 & 24VDC	≤ 250 µA
Inrush	10 times steady state current
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 30.7 mm (1.21")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Protection	
Circuitry	Encapsulated
Environmental	
Operating/Storage Temperature	-20° to 60°C / -40° to 85°C
Weight	≅ 2.2 oz (62 g)

Flasher Function Diagram



V = Voltage
R = Reset
L = Load
T1 = ON Time
T2 = OFF Time
T1 ≅ T2

FS300 SERIES

Description

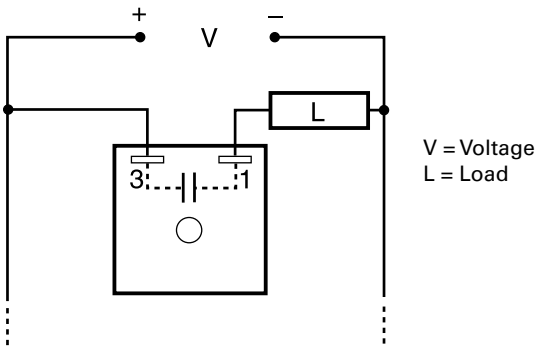
The FS300 Series of solid-state flashers were specifically designed to operate lamp loads. Their two-terminal series connection feature makes installation easy. The high immunity to line noise and transients makes the FS300 Series ideal for moving vehicle applications. All solid-state construction means reliability and long life. The FS300 Series offers a factory fixed flash rate of 75 FPM or may be ordered with a fixed, custom flash rate ranging from 60 to 150 FPM.

Operation

Upon application of input voltage, the T2 OFF time begins. At the end of the OFF time, the T1 ON time begins and the load energizes. At the end of T1, T2 begins and the load de-energizes. This cycle repeats until input voltage is removed.

Reset: Removing input voltage resets the output and the sequence to T2.

Wiring Diagram



V = Voltage
L = Load

For dimensional drawing see: Appendix, page 512, Figure 16.

Features & Benefits

FEATURES	BENEFITS
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
High immunity to line noise and transients	Designed specifically for moving vehicle applications
High surge current capability (10 times steady state)	Direct operation of incandescent lamp loads
Two terminal series connection	Provides quick and easy installation for new or existing applications

Ordering Information

MODEL	INPUT	MAXIMUM CURRENT LOAD
FS312	12VDC ± 20%	2.5A
FS324	24VDC ± 20%	1.5A

If you don't find the part you need, call us for a custom product 800-843-8848

Accessories

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P1015-64 (AWG 14/16)
Female Quick Connect
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

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.

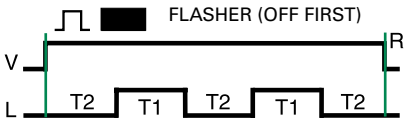
FS300 SERIES

Specifications

Technical Data

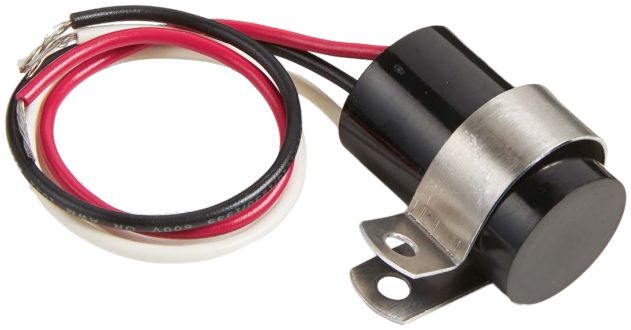
Operation	OFF/ON recycling solid-state flasher (continuous duty)
Flash Rate	Fixed at 75 FPM ±10%
Custom Flash Rates	60 - 150 FPM
ON/OFF Ratio	≅ 50%
Input	
Voltage	12, 24, 36, 48, 72, & 110VDC
Output	
Load Type	Incandescent or resistive
Maximum Load Rating	0.25 - 2.5A steady state
Inrush	10 times steady state current
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 30.7 mm (1.21")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Protection	
Circuitry	Encapsulated
Environmental	
Operating/Storage Temperature	-20° to 60°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.2 oz (62 g)

Flasher Function Diagram



V = Voltage
R = Reset
L = Load
T1 = ON Time
T2 = OFF Time
T1 ≅ T2

FS491



Description

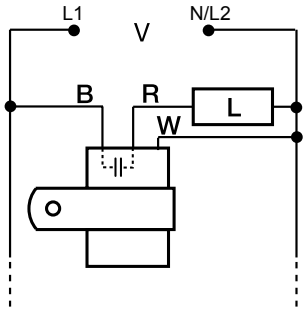
The FS491 is a low leakage AC flasher designed to control LED, or resistive loads. This product offers a solid-state output and accepts an input voltage of 120VAC to 240VAC. It offers a factory fixed flash rate of 75 FPM. The FS491 is the perfect solution for LED lamp flashing.

Operation

Upon application of input voltage, the output energizes and the ON time begins. At the end of the ON time, the output de-energizes and the OFF time begins. At the end of the OFF time, the output energizes and the cycle repeats as long as input voltage is applied.

Reset: Removing input voltage resets the output and the flash sequence.

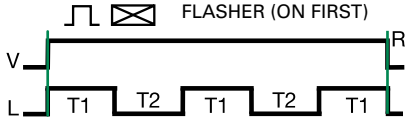
Wiring Diagram



V = Voltage
L = Load
R = Red Wire
B = Black Wire
W = White Wire

For dimensional drawing see: Appendix, page 512, Figure 25.

Function Diagram



ON time plus OFF time equals one complete flash.

V = Voltage
R = Reset
L = Load
T1 = ON Time
T2 = OFF Time
T1 ≅ T2

Features & Benefits

FEATURES	BENEFITS
Totally solid state	No moving parts to arc and wear out, up to 100 million operations under typical conditions
Fully encapsulated	Protects circuitry from shock, vibration and humidity
Extremely low leakage current	Ideal for use in LED lighting applications

Specifications

Technical Data

Operation	ON/OFF solid-state flasher (continuous duty)
Flash Rate	Fixed at 75 FPM ±20%
ON/OFF Ratio	≅ 50%

Input

Voltage	120 - 240VAC
Tolerance	± 15%
AC Line Frequency	50/60Hz

Output

Load Type	LED or resistive
Output	Bridge Rectifier & FET
Maximum Load Rating	
120VAC to 240VAC	0.5A steady state; 5A inrush
Max. Load Leakage Current	250µA
Voltage Drop	2V typical

Mechanical

Mounting	Surface mount with one #8 (M4 x 0.7) screw
Dimensions	**Dia.** 23.9 mm (0.94"); **L** 38.1 mm (1.5")

Protection

Surge	IEEE C62.41 - 1991 Level A
Circuitry	Encapsulated

Environmental

Operating/Storage Temperature	-20° to 60°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 1.1 oz (31 g)

FS500 SERIES

*(some models)

8-PIN

Description

The FS500 Series flash rate is adjustable from 10 to 100 FPM. A locknut is provided to hold selected flash rate. The long-life electronic circuit combined with a quality electromechanical relay provides flexibility and reliability in most applications.

Operation

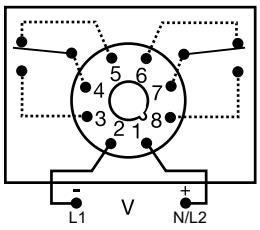
Upon application of input voltage, the output relay is energized and the ON time begins. At the end of the ON time, the output relay de-energizes and the OFF time begins. At the end of the OFF time, the output is energized and the cycle repeats as long as input voltage is applied.

Reset: Removing input voltage resets the output and the sequence.

Features & Benefits

FEATURES	BENEFITS
Solid-state circuitry with electromechanical relay	Long life circuitry at a reliable low cost
Industry standard octal plug connection	Eliminates need for special connectors
Adjustable flash rate	Provides flexibility for user to select flash rate between 10 - 100 FPM
10A, DPDT isolated output contacts	Allows control of loads for AC or DC voltages

Wiring Diagram



V = Voltage

For dimensional drawing see: Appendix, page 512, Figure 24.

Ordering Information

MODEL	INPUT VOLTAGE
FS512	12VDC
FS524	24VAC/DC
FS590	120VAC/DC

If you don't find the part you need, call us for a custom product 800-843-8848

Accessories

BZ1 Front Panel Mount Kit
Provides an easy method of through-the-panel mounting of 8- or 11-pin plug-in timers, flashers, and other controls.

NDS-8 Octal 8-pin Socket
8-pin 35mm DIN rail or surface mount. Surface mounted with two #6 screws or snaps onto a 35 mm DIN rail. Uses PSC8 hold-down clips.

PSC8 Hold-down Clips
Securely mounts plug-in controls in any position. Provides protection against vibration. Use with NDS-8 Octal Socket. Sold in pairs.

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

FS500 SERIES

Specifications

Technical Data

Operation	ON/OFF recycling flasher with adjustable flash rate
Flash Rate	Adjustable from 10 - 100 operations per minute (guaranteed range)
ON/OFF Ratio	≅ 50%

Input

Input Voltage	12VDC, 24VAC/DC, 120VAC/DC, 230VAC
Tolerance	
12VDC & 24VDC/AC	-15% - 20%
120VAC/VDC & 230VAC	-20% - 10%
AC Line Frequency	50/60Hz

Output

Load Type	Electromechanical relay
Form	DPDT
Rating	10A resistive @ 120/240VAC & 28VDC; 1/3 hp @ 120/ 240VAC

Mechanical

Mounting	Plug-in socket
Dimensions	**H** 91.6 mm (3.62"); **W** 60.7 mm (2.39"); **D** 45.2 mm (1.78")
Termination	Octal 8-pin plug-in

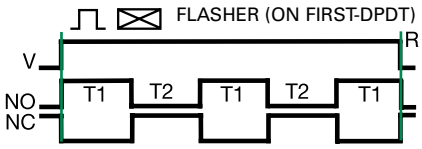
Protection

Isolation Voltage	≥ 1500V RMS input to output
Polarity	DC units are reverse polarity protected

Environmental

Operating/Storage Temperature	-20° to 60°C / -30° to 85°C
Weight	≅ 5.8 oz (164 g)

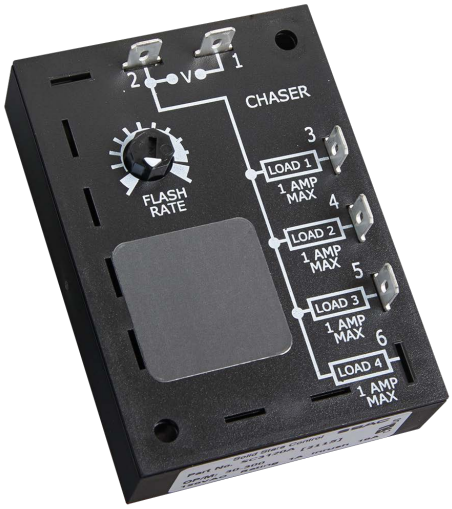
Flasher Function Diagram



V = Voltage
R = Reset
T1 = ON Time
T2 = OFF Time
NO = Normally Open
NC = Normally Closed

SC3 / SC4 SERIES

Chaser



Description

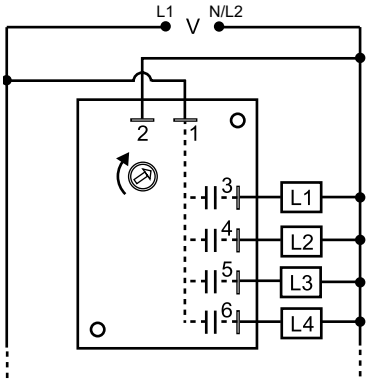
The SC3/SC4 Series are solid-state 3 or 4 channel chasers designed for sequential three circuit flashing of incandescent lamp loads. Unlike electromechanical chasers, there are no contacts to arc, wear, and eventually fail.

Operation

Sequential 3 or 4 circuit flashing of incandescent loads with equal time delays for each load. Upon application of input voltage, Load 1 is energized. At the end of the time delay, Load 1 de-energizes and Load 2 energizes. At the end of the time delay, Load 2 de-energizes and Load 3 energizes. This cycle continues until input voltage is removed. The set time delay (rate) is the timing for the *whole cycle*, for all 3 loads (output contacts).

Reset: Removing input voltage resets the unit and cycle.

Wiring Diagram



V = Voltage
L1 = Load 1
L2 = Load 2
L3 = Load 3
L4 = Load 4

SC4 shown. For SC3, terminal 6 and load L4 are eliminated.

For dimensional drawing see: Appendix, page 513, Figure 28.

Features & Benefits

FEATURES	BENEFITS
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
1A steady solid state output	Provides 100 million operations in typical conditions.

Accessories

P1015-13 (AWG 10/12), **P1015-64** (AWG 14/16), **P1015-14** (AWG 18/22) **Female Quick Connect**
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

Ordering Information

MODEL	INPUT VOLTAGE	RATING	CHANNEL	FLASH RATE
SC3120A	120VAC	1A	3 Sequential	Adjustable 30 - 30FPM
SC4120A	120VAC	1A	4 Sequential	Adjustable 30 - 30FPM

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SC3 / SC4 SERIES

Specifications

Technical Data

Operation	Sequential 3 circuit flashing of incandescent lamp loads. Fixed rate. *For sequential 4 circuit and adjustable rates, please contact the factory.*
Rate	Fixed: 30 operations per minute (±10%)

Input

Voltage	120VAC ±15%
AC Line Frequency	50/60 Hz

Output

Type	Solid state
Rating	1A steady state per output

Mechanical

Mounting	Surface mount with two #6 (M3.5 x 0.6) screws
Termination	0.25 in. (6.35 mm) male quick connect terminals
Dimensions	**H** 88.9 mm (3.5"); **W** 63.5 mm (2.5"); **D** 31 mm (1.22")

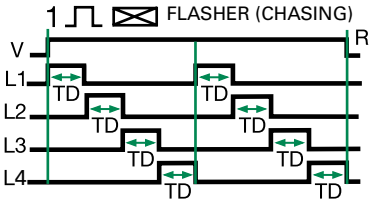
Protection

Circuitry	Encapsulated
Dielectric Breakdown	≥ 2000V RMS terminals to mounting surface
Insulation Resistance	≥ 100 MΩ

Environmental

Operating/Storage Temperature	-20° to 60°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 5.4 oz (153 g)

Flasher Function Diagram



V = Voltage
R = Reset
L1, L2, L3, L4 = Lamps
TD = Time Delay
(all are equal)

SC4 shown.
For SC3, L4 is eliminated and L1 TD begins as soon as L3 TD is completed.

FA / FS SERIES

FA155

FS165-30T

*(FS155 & FA155 models only)

Description

The FA/FS Series have proven their reliability through years of use on communication towers, smoke stacks, cooling towers, tall buildings, bridges and utility towers. The highest quality components are encapsulated in a rugged plastic housing with a molded-in heat transfer plate. The flash rate, ratio, and fail-safe design meet FAA regulations. Zero voltage switching can increase lamp life up to ten times. The FS155-30RF includes superior RF filtering circuitry for use in high RF installations, including AM hot towers.

Operation

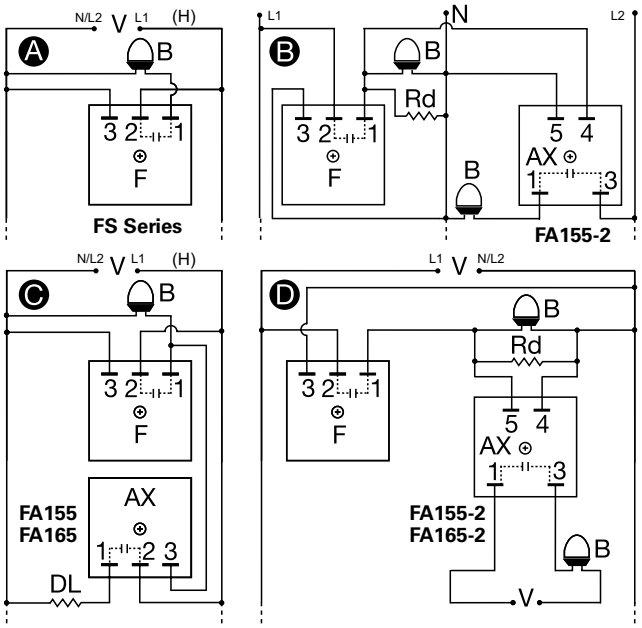
FS Series - Flasher (OFF First)

FA Series - Auxiliary Modules

Upon application of input voltage, the T2 OFF time begins. At the end of the OFF time, the T1 ON time begins and the load energizes. At the end of T1, T2 begins and the load de-energizes. This cycle repeats until voltage is removed.

Reset: Removing input voltage resets the output and the sequence to T2.

Wiring Diagram



V = Voltage N = Neutral B = Beacon
DL = Dummy Load for Constant Line Loading
Rd = 3.3 KΩ @ 5W for 120VAC; 8.5 KΩ @ 5W for 230VAC
F = Flasher (FS155-30T, FS155-30RF, FS165-30T)
AX = Auxiliary Unit (FA155, FA155-2, FA165, FA156-2)

For dimensional drawing see: Appendix, page 512, Figure 19.

Features & Benefits

FEATURES	BENEFITS
Zero voltage switching	Delivers up to 10 times longer lamp life
Encapsulated	Protects against shock, vibration, and humidity
Metalized mounting surface	Facilitates heat transfer in high current applications
Superior RF filtering circuitry (RF models only)	Ideal for AM hot towers and other high RF installations
High inrush capability up to 200A	Will withstand the repetitive inrush current of incandescent beacons

Accessories

P1015-13 (AWG 10/12), **P1015-64** (AWG 14/16), **P1015-14** (AWG 18/22) **Female Quick Connect** These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

Ordering Information

MODEL	INPUT VOLTAGE	WATTAGE	INRUSH RATING	DESCRIPTION
FA155	120VAC	2500W	200A	Auxiliary unit to provide constant line loading
FA155-2	120VAC	2500W	200A	Auxiliary unit for synchronized operating of additional beacons. Synchronized flashing of additional beacons on a 3 wire system
FA165	230VAC	5000W	200A	Auxiliary unit to provide constant line loading
FA165-2	230VAC	5000W	200A	Auxiliary unit for synchronized operating of additional beacons. Synchronized flashing of additional beacons on a 2 wire system
FS155-30RF	120VAC	2500W	200A	For high RF interference locations including AM hot towers
FS155-30T	120VAC	2500W	200A	Standard beacon flasher
FS165-30T	230VAC	5000W	200A	Standard beacon flasher

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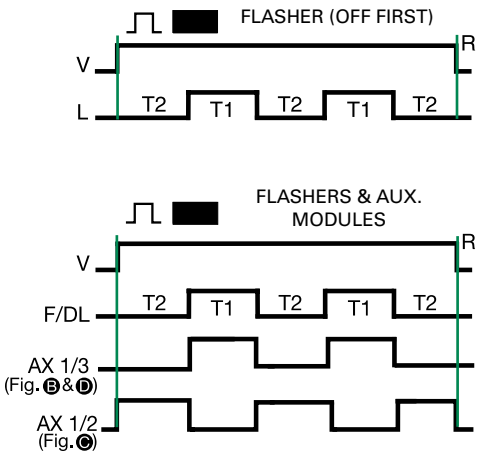
FA / FS SERIES

Flasher Function Diagrams



V = Voltage
R = Reset
L = Load
T1 = ON Time
T2 = OFF Time
T1 ≅ T2
F = Flasher
DL = Dummy Load
AX = Auxillary Module

Specifications

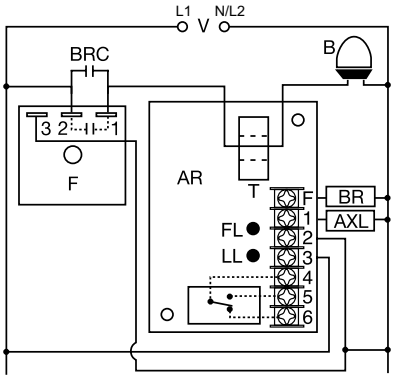
Operation	Single & multiple beacon flashing with auxiliary modules
Flash Rate (FS Series Only)	30 ±10 FPM
ON/OFF Ratio (FS Series Only)	50 - 67% ON time; 33 - 50% OFF time
Voltage	120 or 230VAC ±20%
AC Line Frequency	50/60Hz
Output Rating (Zero Voltage Switching)	2500W @ 120VAC; 5000W @ 230VAC
Inrush Current	200A peak for 1 cycle of AC line
Mounting*	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 38.4 mm (1.51")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Circuitry	Encapsulated
Operating/Storage Temperature	-55° to 65°C / -55° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 3.9 oz (111 g)

* Note: Must be mounted to metal surface using the included heat sink compound. The maximum mounting surface temperature is 90°C.

FB SERIES

Flasher & Incandescent Beacon Alarm Relay

Wiring Diagram



V = Voltage
B = Beacon
F = Flasher
T = Toroid
BRC = Flasher Bypass Relay Contacts
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.

For dimensional drawing see: Appendix, page 514, Figure 47.

Ordering Information

MODEL	LINE VOTAGE	LAMP TYPE
FB120A	120VAC	Incandescent Beacon
FB230A	230VAC	Incandescent Beacon

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Description

The FB Series is used to monitor the operation of one two-lamp incandescent beacon and one beacon flasher (or auxiliary module). The flasher and lamps are monitored by sensing the flow of current in the circuit. If the lamp(s) or the flasher fail to operate properly, a solid-state output and an isolated SPDT relay energize. When connected to a site monitoring system, this unit provides the remote beacon monitoring protection required by the FAA/FCC. On a multiple beacon structure, one unit is required for each two-lamp incandescent beacon (one unit per beacon for LED beacons).

Operation

If one lamp in an incandescent beacon fails, the relay and solid-state lamp failure outputs energize after 10s. If the flasher fails in the ON or OFF condition, the relay and the solid-state flasher failure output energizes after 6s. If both failures occur, all three outputs energize after their trip delays.

Note: If both incandescent lamps fail, all three outputs will energize. The relay and solid-state flasher failure output energizes after 6s, and the solid-state lamp failure output energizes after 10s.

Features & Benefits

FEATURES	BENEFITS
Toroidal current sensing	Reliable low cost monitoring of the flasher and lamps through built-in CT and provides isolatio n from the monitored circuit
Failsafe beacon monitoring	Alarm monitors for failed incandescent lamps in addition to flasher function
One isolated, 5A, SPDT alarm output plus two, 1A, solid-state line voltage alarm outputs	When connected to a site monitoring system, it provides the remote beacon monitoring protection required by the FAA / FCC.
Fixed trip delays for flasher (6s) and lamp (10s) failures	Prevents nuisance alarms

Specifications

Input Voltage

FB120A	120VAC ±15%
FB230A	230VAC ±15%
AC Line Frequency	50/60Hz
Lamp Socket Voltage	±10%; 50/60Hz

Alarm Outputs

Type	3 total - 1 relay, 2 solid state; One isolated SPDT relay rated 5A resistive Two solid-state line voltage outputs rated 0.5A steady, 5A inrush

Lamp Failure Detection

FB120A	For two 620W or 700W lamps
FB230A	For two 500W or 700W lamps

Trip Delays

Flasher Failure	Fixed at 6s; -0/+40%
Lamp Failure	Fixed at 10s; -0/+40%

LEDs

Lamp Failure (Red)	Glows when one or both lamps fail
Flasher Failure (Red)	Glows when the flasher fails

Protection

Circuitry	Encapsulated
Mounting	Surface mount with two #6 (M3.5 x 0.6) screws
Dimensions	**H** 88.9 mm (3.5"); **W** 63.5 mm (2.5"); **D** 44.5 mm (1.75")
Termination	7 position barrier block for 20 AWG (0.5 mm^2) to 14 AWG (2.5 mm^2) wire

Environmental

Operating/Storage Temperature	-55° to 60°C / -55° to 85°C
Weight	≅ 7 oz (198 g)

SCR490D

Obstruction Lamp Alarm Relay

Description

The SCR490D is used to provide remote monitoring of steady burning incandescent marker and obstruction lighting. Four onboard switches allow operator programming for lighting systems with two through nine lamps on a single AC circuit. The SCR490D uses a toroidal sensor and electronic circuitry to sense the failure of one or more lamps.

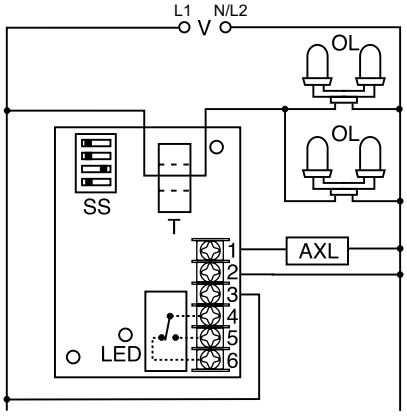
Operation

When a lamp fails, the SCR490D senses a decrease in current flow. Then, after a fixed time delay, it transfers to its alarm mode. In alarm mode, the LED indicator, the output relay (SPDT isolated contacts), and a non-isolated solid-state output are energized. Replacement of the failed lamps resets the alarm outputs and the LED indicator. To prevent false alarm signals, power must be applied to the SCR490D at the same time that lamps are energized.

Features & Benefits

FEATURES	BENEFITS
Toroidal current sensing	Reliable low cost monitoring of incandescent marker and obstruction lighting through built-in CT which also provides isolation from the lighting circuit
Monitors 2 - 9 lamps	Senses failed obstruction lamps on a single AC circuit
Isolated, 10A, SPDT alarm output plus one 1A, solid-state line voltage alarm output	Provide alarm indication and can also be used for remote monitoring of the lighting system
Fixed trip delay (6s)	Prevents nuisance alarms

Wiring Diagram



V = Voltage
OL = Obstruction Lamps
T = Toroid
SS = Selector Switch
AXL = Auxiliary Load/Alarm

Relay contacts are isolated.

For dimensional drawing see: Appendix, page 514, Figure 47.

Specifications

Operation

Number of Lamps	2 - 9 (selectable)
Lamp Wattage	116W, incandescent lamps
Rated Lamp Voltage	120 or 130VAC (selectable)
Monitored Voltage	120VAC ±3%
Trip Delay	≅ 6s fixed
Voltage	120VAC
AC Line Frequency Tolerance	50/60Hz
120VAC Line Voltage Output (Solid State Rated)	- 20% - 10% ≤ 125W to operate a spare lamp or alarm
Isolated Alarm Output	10A @ 120VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
Mounting	Surface mount with two #6 (M3.5 x 0.6) screws
Dimensions	**H** 88.9 mm (3.5"); **W** 63.5 mm (2.5"); **D** 44.5 mm (1.75")
Termination	Screws with captive clamps for up to 14 AWG (2.45 mm^2) wire
Circuitry	Encapsulated
Operating/Storage Temperature	-55° to 65°C / -55° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 6.8 oz (193 g)

SCR SERIES

Universal Lamp Alarm Relay

(SCR430T only)

Description

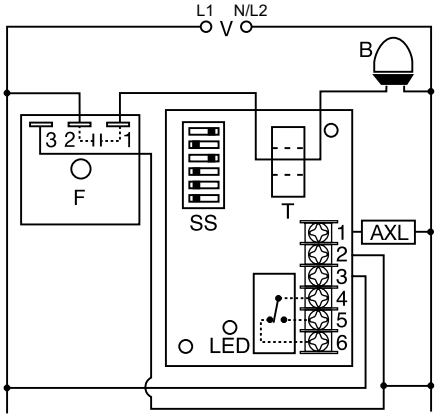
The SCR series is a universal lamp alarm relay designed to sense the failure of flashing or steady incandescent beacon lamps or steady side lights. The toroidal current sensor provides isolation and allows monitoring of more than one line at a time. The SCR Series energizes when one or more lamps fail. It will monitor the operation of one to four side lights and up to four beacon lamps.

Operation

When a lamp fails, the SCR Series senses a decrease in current flow. After a fixed time delay, the LED glows and the two alarm outputs energize. The outputs and the LED are reset when the failed lamps are replaced and the current returns to the nominal setting, or when the input voltage is removed. The SCR will sense an open flasher, it will not sense a continuously ON flasher (see FB Series).

Wiring Diagram

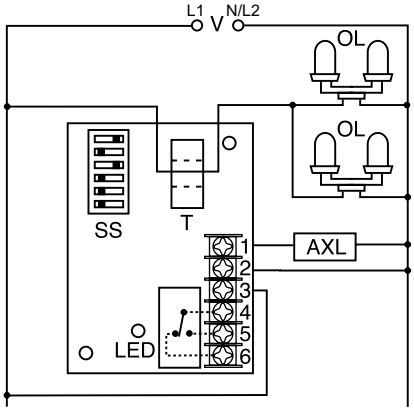
BEACON LAMP CONNECTION DIAGRAM



V = Voltage
B = Beacon Lamps
SS = Selector Switch
T = Toroid
F = Flasher
AXL = Auxiliary Load/Alarm

Relay contacts are isolated.

OBSTRUCTION LAMP CONNECTION DIAGRAM



V = Voltage
SS = Selector Switch
T = Toroid
AXL = Auxiliary Load/Alarm
OL = Obstruction Lamps

Relay contacts are isolated.

For dimensional drawing see: Appendix, page 514, Figure 47.

Features & Benefits

FEATURES	BENEFITS
Toroidal current sensing	Provides isolation from the lighting circuit and allows monitoring of multiple lines simultaneously
Monitors 1-4 side lights or up to 4 beacon lamps	Senses failed incandescent flashing beacon or steady obstruction lamps
Isolated, 10A, SPDT alarm output plus one 1A, solid-state line voltage alarm output	Provides alarm indication and can also be used for remote monitoring of the lighting system
Fixed trip delay (6s)	Prevents nuisance alarms
Switch selectable number, voltage, and wattage of lamps	User selectable to meet wide application needs with one relay

Ordering Information

MODEL	INPUT	LAMP TYPE
SCR430T	120VAC	Incandescent
SCR630T	230VAC	Incandescent

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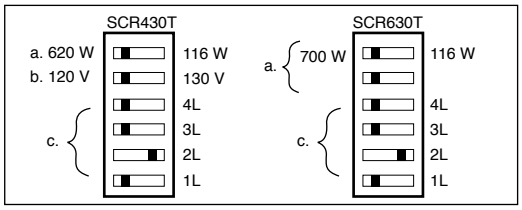
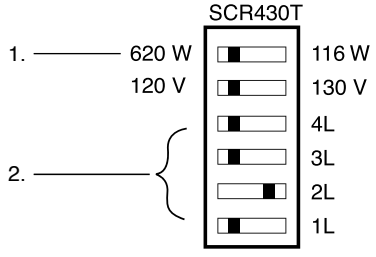
SCR SERIES

Selection Range



a. Lamp Wattage - Select the lamp wattage of the lamps in use.
b. Lamp Voltage - Select the lamp voltage shown on the lamp (SCR430T)
c. Lamps ON - Select the number of lamps on during normal operation. Only one lamp switch at a time may be transferred to the right.

Programming Example



Example Shown: SCR430T-620 watts at 120 VAC lamps, two lamps are ON during normal operation.

STEP
1. Select lamp wattage: 116 or 620 watts
2. Select the number of lamps ON (1 thru 4) during normal operation. Only one lamp switch may be ON (RIGHT) at any time.

Specifications

Operation

Lamp Monitoring				
Capacity (in lamps)	**100W**	**116W**	**620W**	**700W**
SCR430T 120VAC Lamps	4	4	4	n/a
SCR630T 230VAC Lamps	n/a	4	n/a	4

Time Delay

Trip Delay	Factory fixed ≅ 6s

Input

Input Voltage/Tolerance	SCR430T - 120VAC ±10% SCR630T - 230VAC ±10%
AC Line Frequency	50/60Hz

Output

To operate a spare lamp or alarm	
Line Voltage Output (Solid-state Rated)	≤ 125W @ 120VAC ≤ 250W @ 240VAC
Isolated Alarm Output (SPDT)	10A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC

Mechanical

Mounting	Two #6 (M3.5 x 0.6) screws
Dimensions	**H** 88.9 mm (3.5"); **W** 63.5 mm (2.5"); **D** 44.5 mm (1.75")
Termination	Screws with captive clamps for up to 14 AWG (2.45 mm^2) wire

Protection

Circuitry	Encapsulated

Environmental

Operating Temperature	-55° to 65°C
Weight	≅ 6.8 oz (193 g)

FB9L

Universal Lamp Alarm Relay

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.

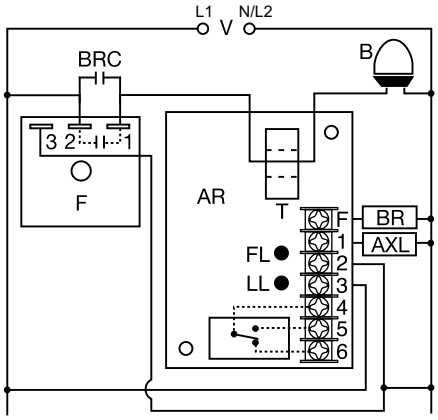
Operation

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.

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.

For dimensional drawing see: Appendix, page 513, Figure 31.

Features & Benefits

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

Calibration Range (total all Lamps)	150mA - 8.0A
Absolute Max Current (total all Lamps)	15A max. (may not calibrate above 8A)
Single Lamp Current	150mA - 8.0A (total all lamps ≤ 8.0A)
Trip Delay	
Flasher Failure	Fixed at 6s; -0/+40%
Lamp Failure	Fixed at 10s; -0/+40%

Input

Input Voltage/Tolerance	120 to 230VAC / ±15%
AC Line Frequency	50/60Hz
Output	To operate a spare lamp or alarm
Line Voltage Output (SPNO)	5A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
Isolated Alarm Output (SPDT)	10A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
Solid-State Line Voltage Output (F)	0.5A steady; 5A inrush

Mechanical

Mounting	One #10 (M5 x 0.8) screw
Dimensions	**H** 76.7 mm (3"); **W** 50.8 mm (2"); **D** 41.7 mm (1.64")
Termination	IP20 screw terminals for up to 14 AWG (2.45 mm^2) wire or two 16 AWG (1.3 mm^2) wires

LEDs

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

Protection

Circuitry	Encapsulated

Environmental

Operating/Storage Temperature	-40° to 60°C / -40° to 85°C
Weight	≅ 3.9 oz (111 g)
FAA-AC No.	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

SCR9L

Universal Lamp Alarm Relay

Description

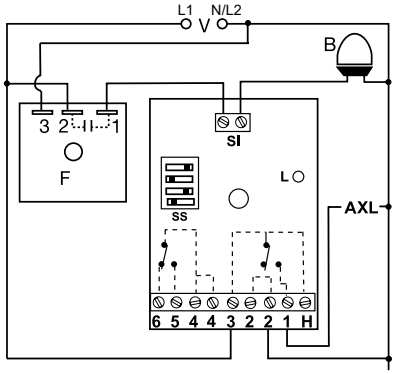
The SCR9L is a universal lamp alarm relay designed to sense the failure of flashing or steady LED beacon lamps or obstruction lamps. The SCR9L energizes when one or more lamps fail. It will monitor the operation of one to eight beacon or obstruction lamps. All monitored lamps must be the same wattage and voltage. When connected to a site monitoring system, it provides the remote lamp monitoring protection required by the FAA-AC No: 150/5345-43E.

Operation

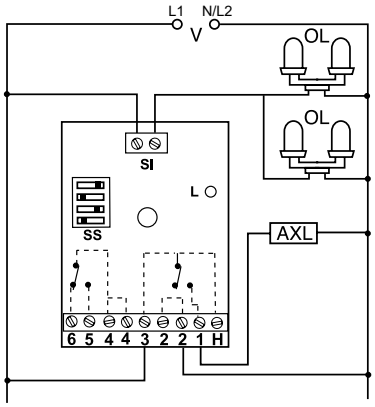
When a lamp fails, the SCR9L senses a decrease in current flow. After a 10s trip delay, the onboard LED glows and the two alarm outputs energize. The outputs and the LED are reset when the failed lamps are replaced and the unit is recalibrated. The SCR9L will sense an open flasher, it will not sense a continuously ON flasher (see FB Series). Removing input voltage de-energizes the output and the LED's. It does not change the calibration.

Wiring Diagram

BEACON LAMP CONNECTION DIAGRAM



OBSTRUCTION LAMP CONNECTION DIAGRAM



V = Voltage
B = Beacon Lamps
SS = Selector Switch
L = LED Indicator
F = Flasher
AXL = Auxiliary Load/Alarm
OL = Obstruction Lamps
SI = Sensor Input
H = "3" Spare AC Hot Connection (2A max.)

For dimensional drawing see: Appendix, page 513, Figure 31.

Features & Benefits

FEATURES	BENEFITS
Self calibrating	Designed for use with all types of LED beacon and obstruction lamps
Failsafe beacon monitoring	Relay will also provide an alarm signal on a failed flasher (open)
Number of lamps monitored is switch selectable up to 8	User selection allows quick set up and easy adaption to multiple applications
Universal voltage 120 to 230VAC	Designed for use in most applications
Isolated, 10A, SPDT alarm output contacts	Provides remote beacon monitoring when connected to a site monitoring system, as is required by the FAA
LED indication	Provides visual relay status of operation, alarm, trip delay, and calibration
Fully encapsulated	Protects against shock, vibration, and humidity

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.

SCR9L

CE

Calibration

Alarm relays must be calibrated at initial installation and when LED lamps are replaced. Due to LED lamp aging, recalibration is recommended every 12 months.

1. Remove input voltage
2. Move calibration switch to off position
3. Re-apply input voltage
4. LED will flash red to indicate the unit is ready for calibration
5. Visually inspect structure's lighting to make sure all lamps and flashers (if used) are operating properly
6. Remove input voltage
7. Adjust lamp selector switches for the correct number of lamps to be monitored (see adjustment diagram below)
8. Re-apply input voltage
9. LED should flash red
10. Move calibrate switch to ON position
11. The LED will alternate flashing red and green
12. LED will glow steady green within 30 secs. Calibration is complete

Calibration Failed

If the LED double blinks red, calibration failed. Remove input voltage and repeat steps 6-8.

Notes:

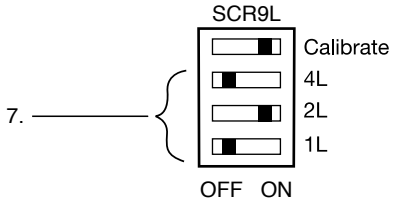
a. Monitoring a mixture of LED beacons and LED obstruction lamps is not possible with the SCR9L.

b. This alarm relay is not designed to monitor incandescent lamps.

c. Applying input voltage when the calibrate switch is in the OFF position, erases the previous calibration settings. The LED will flash Red. The output relays are OFF and the unit will not sense lamp failures.

d. Only one temperature compensated LED beacon can be monitored with this product. A combination of temperature compensated and standard LED beacons cannot be monitored.

Adjustment Example



Example Shown: SCR9L two lamps are ON during normal operation.

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

Specifications

Sensors

Calibration Range (total all Lamps)	150mA - 8.0A
Absolute Max Current (total all Lamps)	15A max. (may not calibrate above 8A)
Single Lamp Current	150mA - 8.0A (total all lamps < 8.0A)

Time Delay

Trip Delay	Factory fixed ≅10s

Input

Input Voltage/Tolerance	120 to 230VAC ±15%
AC Line Frequency	50/60Hz

Output

	To operate a spare lamp or alarm
Line Voltage Output (SPNO)	5A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
Isolated Alarm Output (SPDT)	10A @ 240VAC or 30VDC resistive; 1/4 hp @ 125VAC; 1/2 hp @ 250VAC
Auxilliary Input Voltage (H)	≤ 2A @ 230VAC

Mechanical

Mounting	One #10 (M5 x 0.8) screw
Dimensions	**H** 76.7 mm (3"); **W** 51.3 mm (2.02"); **D** 41.7 mm (1.64")
Termination	IP20 screw terminals for up to 14 AWG (2.45 mm^2) wire or two 16 AWG (1.3 mm^2) wires

Protection

Circuitry	Encapsulated

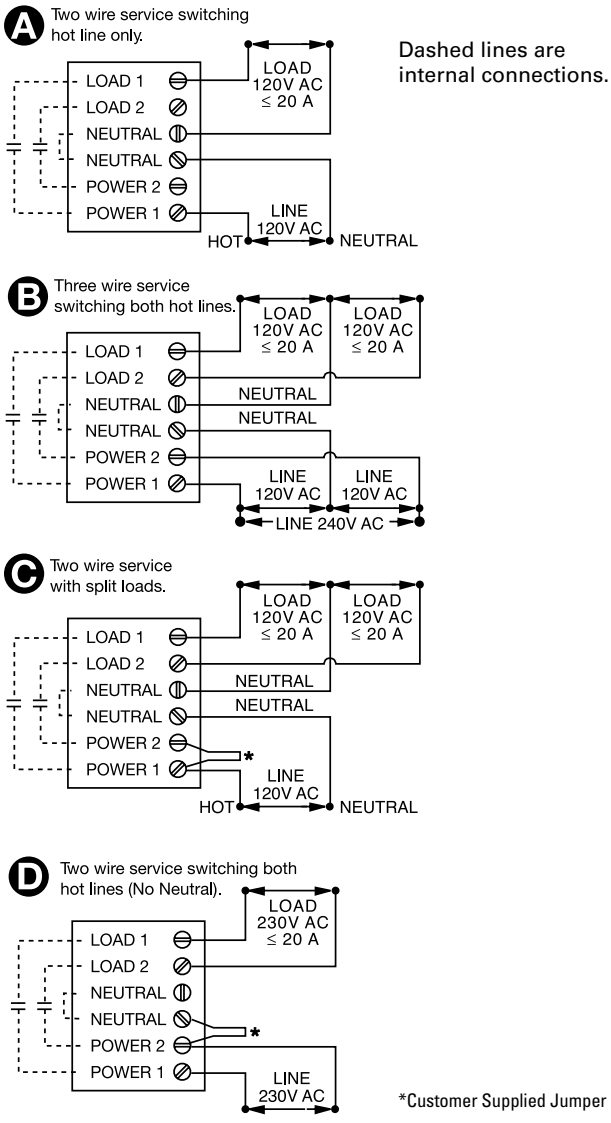
Environmental

Operating / Storage Temperature	-40° to 60°C / - 40° to 85°C
Weight	≅ 3.9 oz (111 g)

PCR SERIES

Photo Control

Wiring Diagram



For dimensional drawing see: Appendix, page 514, Figure 45.

Description

The PCR Series of photo controls is a combination of precision electronic circuitry, electromechanical output, and unique molded plastic housing. Designed and built to meet the demands of the most rigorous requirement of tower and obstruction lighting control, each unit is factory calibrated to meet FAA and FCC specifications. Electronic circuit, output contactor, and terminal block are all contained within front plastic housing. Edge support molded into the bottom edge of housing allows easy wiring of new and existing installations. Available with or without cast aluminum junction box.

Operation

When the amount of light sensed falls below the actuation level for energization, the output relay energizes. Conversely, when the amount rises above the actuation level for de-energization, the output relay de-energizes.

Features & Benefits

FEATURES	BENEFITS
ABS plastic housing with gasket seal	Withstands outdoor environmental hazards and protects circuitry from moisture damage
Two 20A relay contacts	Allows direct control of a lighting circuit without a separate contactor
Fixed time delay	Eliminates contact chatter
Reliable photo sensor	Provides automatic lighting circuit operation from dusk to dawn

Ordering Information

MODEL	INPUT	DESCRIPTION	REPLACES	
			Hughey & Phillips	Crouse Hinds
PCR10	120VAC	Photo Control without aluminum box	n/a	n/a
PCR11	120VAC	Photo Control without aluminum box	PC800 120V	PEC52010
PCR12	230VAC	Photo Control with aluminum box	n/a	n/a
PCR13	230VAC	Photo Control with aluminum box	PC800 240V	PEC52010-1

If you don't find the part you need, call us for a custom product 800-843-8848

PCR SERIES

Specifications

Indication	LED indicates power is applied
Light Actuation Levels (Factory Calibrated)	Energized: ≤ 35 fc De-energized: ≥ 60 fc
Voltage	120VAC or 230VAC
AC Line Frequency Tolerance	50/60Hz
120 & 230VAC	-20% - 10%
Output Rating	Two SPST NO 20A contacts 1 hp @ 120VAC 2.5 hp @ 240VAC
Termination	Screw terminals for up to #8 (M4 x 0.7) AWG wire
Dimensions	**H** 159.51 mm (6.28"); **W** 127 mm (5.0"); **D** 131.75 mm (5.19")
Mounting	ABS plastic housing with gasket seal. Multiple knockout holes for optional mounting to Crouse Hinds or Hughey & Phillips cast aluminum electrical boxes.
Operating/Storage Temperature	-40° to 60°C / -55° to 85°C