

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.

For more information see:

- Appendix A, page 164 for Flasher (NC) function.
- Appendix B, page 165, Figure 4 for dimensional drawing.
- Appendix C, page 168, Figure 1 for connection diagram.

**Order Table:**

Rating	Inrush Rating	Part Number
1A	10A	FSU1000
6A	60A	FSU1003
10A	100A	FSU1004
20A	200A	FSU1005

**Features:**

- All solid state - no moving parts or contacts
- Onboard adjustable flash rate
- Loads up to 20A
- High inrush up to 200A
- Universal voltage 24 to 240VAC

Approvals:

**Auxiliary Products:**

- **Female quick connect:**  
P/N: P1015-13 (AWG 10/12)  
P/N: P1015-64 (AWG 14/16)  
P/N: P1015-14 (AWG 18/22)
- **Quick connect to screw adaptor:**  
P/N: P1015-18

**Available Models:**

- FSU1000
- FSU1003
- FSU1004

**Specifications**

**Technical Data**

Operation	ON/OFF recycling solid-state flasher (continuous duty)
Flash Rate	Adjustable 10 - 100 FPM
ON/OFF Ratio	≅ 50%
<b>Input</b>	
Range/Frequency	24 to 240VAC/50/60Hz
<b>Output</b>	
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	2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm)
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.



The FS100 Series (low amp) 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.

For more information see:

- Appendix A, page 164 for Flasher (OFF First) function.
- Appendix B, page 165, Figure 12 for dimensional drawing.
- Appendix C, page 168, Figure 2 for connection diagram.

**Order Table:**

Input	Output Rating	Output Type	Load Type*	Part Number
120VAC	1A	AC, Fullwave	A	FS126
120VAC	1A	AC, Fullwave	B	FS126RC
120VAC	2A	AC, Halfwave	A	FS127
24VAC	1A	AC, Fullwave	A	FS146
24VAC	1A	AC, Fullwave	B	FS146RC
24VAC	2A	AC, Halfwave	A	FS147

\*Load Type:

- A-Incandescent & Resistive
- B-Incandescent, Resistive & Inductive

Add the suffix "-##" to any part number to indicate the custom flash rate.

**Features:**

- Fixed flash rate 75 FPM
- Custom flash rate 45 - 150 FPM
- 1 or 2A output
- 24 or 120VAC
- Small size: 1.5 x 0.94 in. (38 x 23.9 mm)

Approvals:

**Available Models:**

FS126	FS126RC-90
FS126-45	FS127
FS126-60	FS146
FS126RC	FS146RC

**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%
<b>Input</b>	
Voltage	24, 120VAC, ±15%
AC Line Frequency	50/60Hz
<b>Output</b>	
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 (0.82mm <sup>2</sup> ) wires 6 in. (15.2cm)
Dimensions	1.5 x 0.94 in. (38.1 x 23.9 mm)

**Protection**

Circuitry ..... Encapsulated

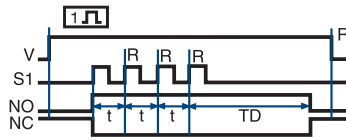
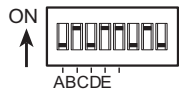
**Environmental**

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

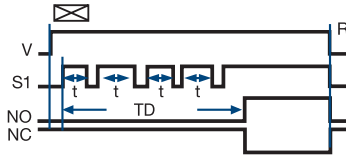
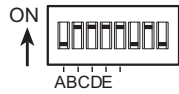
# Appendix A - Timer/Flasher Functions

## Single Functions

### Retriggerable Single Shot

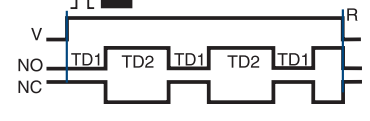
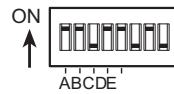


### Accumulative Delay-on-Make

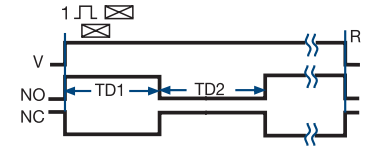
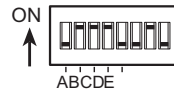


## Dual Functions

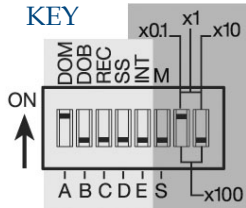
### \* Recycle (OFF Time First) Both Times Adjustable



### \* Interval Delay-on-Make



## KEY

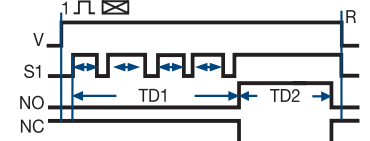
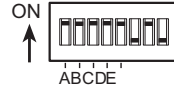


V=Voltage, R=Reset, S1=Initiate Switch,  
NO=Normally Open Contact, NC=Normally Closed Contact,  
TD,TD1,TD2=Complete Time Delay, t=Partial Time Delay,  
DOM=Delay-on-Make, DOB=Delay-on-Break, REC=Recycle,  
SS=Single Shot, INT=Interval, M=Minutes, S=Seconds,  
= } Undefined time

5 Switches for Function Selection  
3 Switches for Time Delay Range

NOTE: The time delay range is the same for both functions when dual functions are selected.

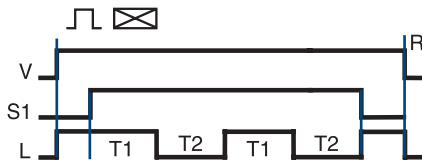
### Accumulative Delay-on-Make Interval



\* 9 Functions included in the 8 pin DPDT models

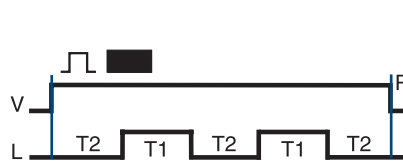
## Flasher Function Diagrams

### Flasher (NC)



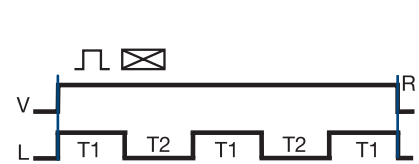
V = Voltage S1 = Initiate Switch L = Load  
R = Reset T1 = ON Time T2 = OFF Time  
T1 ≅ T2

### Flasher (OFF First)



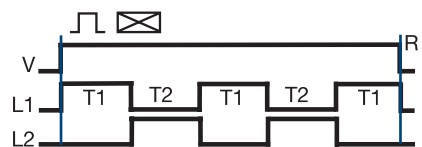
V = Voltage R = Reset L = Load  
T1 = ON Time T2 = OFF Time  
T1 ≅ T2

### Flasher (ON First)



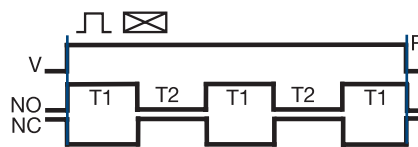
V = Voltage R = Reset L = Load  
T1 = ON Time T2 = OFF Time T1 ≅ T2  
ON time plus OFF time equals one complete flash.

### Flasher (Alternating)



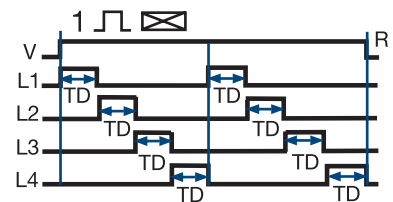
V = Voltage L1 = Load 1 L2 = Load 2  
R = Reset T1 = ON Time T2 = OFF Time  
T1 ≅ T2

### Flasher (ON First-DPDT)



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

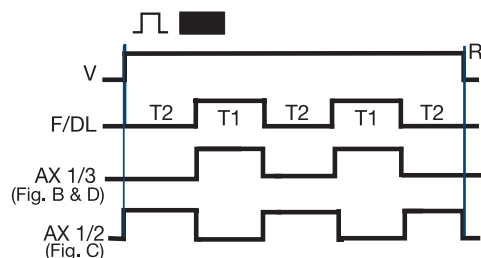
### Flasher (Chasing)



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

V = Voltage R = Reset L (1...4) = Lamps  
TD = Time Delay (all are equal)

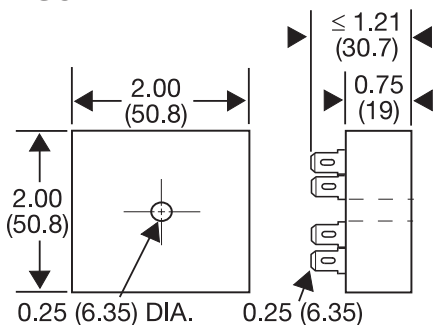
### Flashers & Aux. Modules



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

# Appendix B - Dimensional Drawings

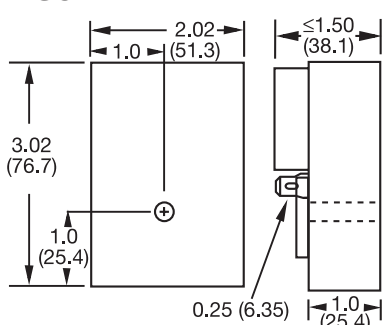
**FIGURE 1**



0.25 (6.35) DIA. 0.25 (6.35)

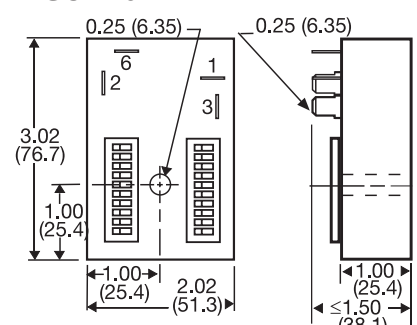
CT; ESD5; ESDR; FS100; FS200; FS300; KR3; KR9;  
KRDB; KRDI; KRDM; KRDR; KRDS; KRPD; KRPS;  
KSD1; KSD2; KSD3; KSD4; KSDB; KSDR; KSDS;  
KSDU; KSPD; KSPS; KSPU; KVM; T2D; TA; TAC1;  
TAC4; TDU; TDUB; TDUI; TDUS; TL; TMV8000;  
TS1; TS2; TS4; TS6; TSB; TSD1; TSD2; TSD3; TSD4;  
TSD6; TSD7; TSDB; TSDR; TSDS; TSS; TSU2000

**FIGURE 2**



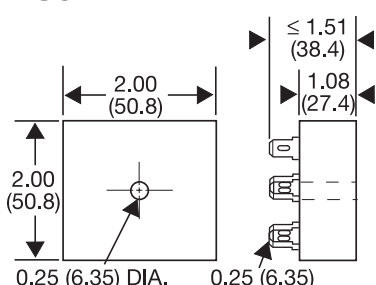
HLV; HRD3; HRD9; HRDB; HRDI;  
HRDM; HRDR; HRDS; HRID; HRIS;  
HRIU; HRPD; HRPS; HRPD; HRV; RS

**FIGURE 3**



HSPZ

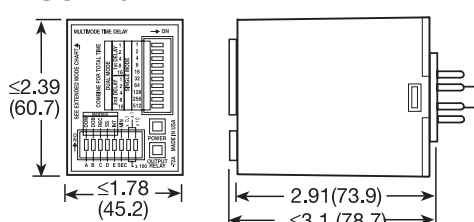
**FIGURE 4**



FA; FS; FSU1000\*; NHPD; NHPS; NHPU;  
NLF1\*; NLF2\*; PHS\*; PTHF\*; SIR1; SIR2;  
SLR1\*; SLR2\*; TH1; TH2; THC; THD1;  
THD2; THD3; THD4; THD7; THDB; THDM;  
THDS; THS

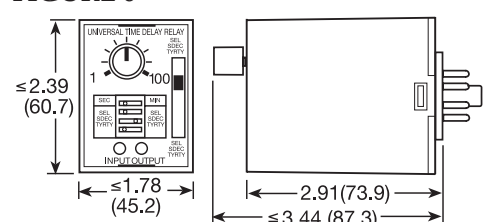
\*If unit is rated @ 1A, see Figure 1

**FIGURE 5**



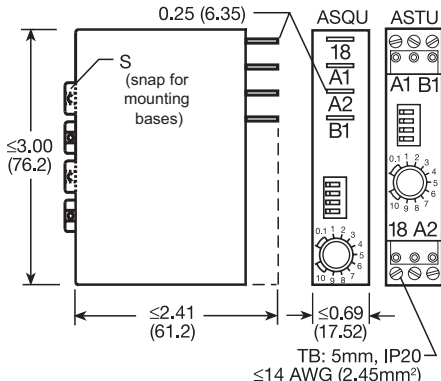
TRDU

**FIGURE 6**



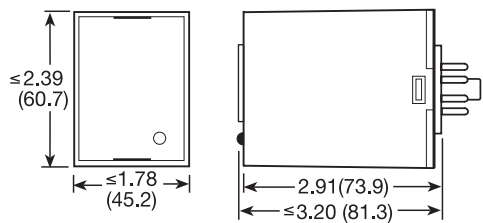
TRU

**FIGURE 7**



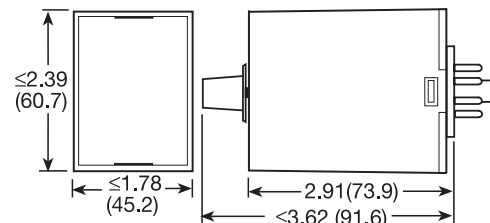
ASQU; ASTU; DSQU; DSTU

**FIGURE 8**



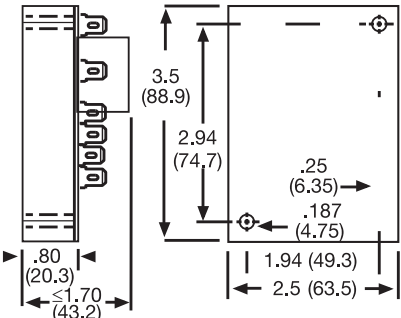
PLM; PLR; TDB; TDBH; TDBL; TDI; TDIH;  
TDIL; TDM; TDMB; TDMH; TDML; TDR;  
TDS; TDSH; TDSL

**FIGURE 9**



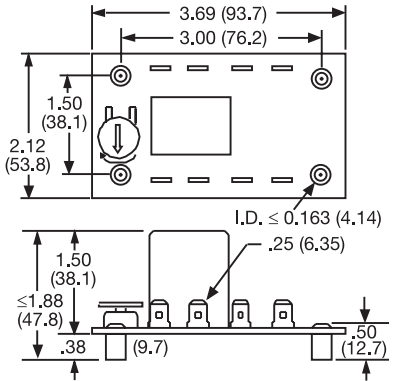
FS500; PRLB; PRM; PRLS; TRB; TRM; TRS

**FIGURE 10**



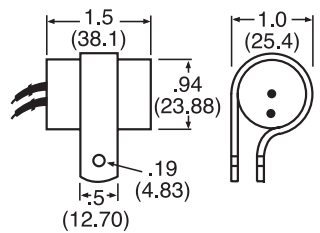
ERD3; ERDI; ERDM

**FIGURE 11**



ORB; ORM; ORS

**FIGURE 12**

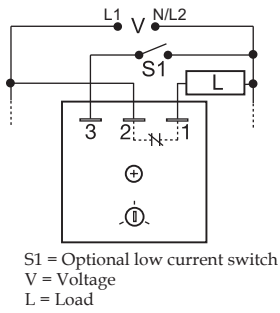


FS100; FS400

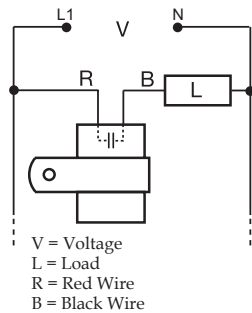
inches (millimeters)

# Appendix C - Connection Diagrams

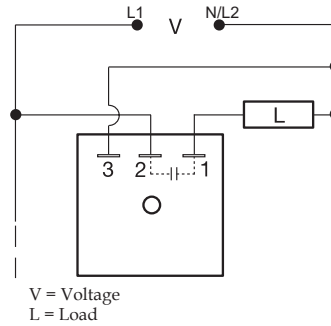
**FIGURE 1 - FSU1000 Series**



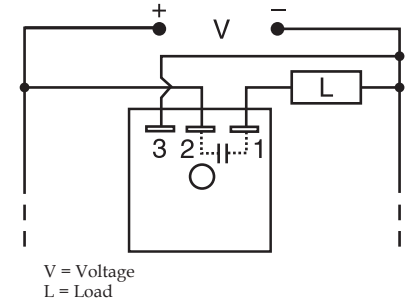
**FIGURE 2 - FS100 Series**



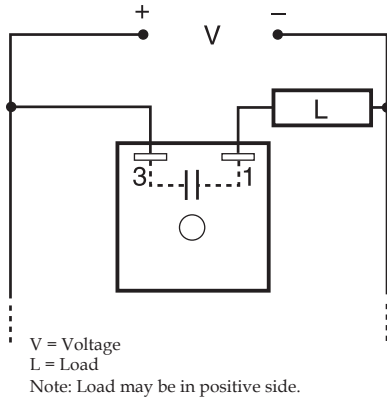
**FIGURE 3 - FS100 Series**



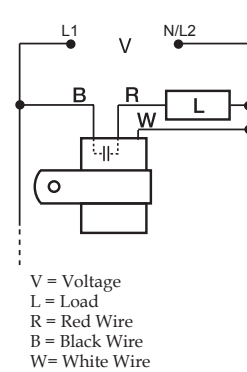
**FIGURE 4 - FS200 Series**



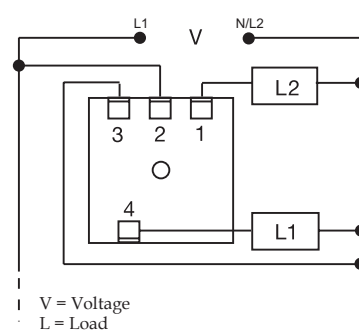
**FIGURE 5 - FS300 Series**



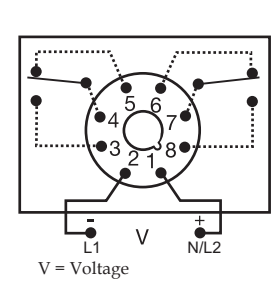
**FIGURE 6 - FS400 Series**



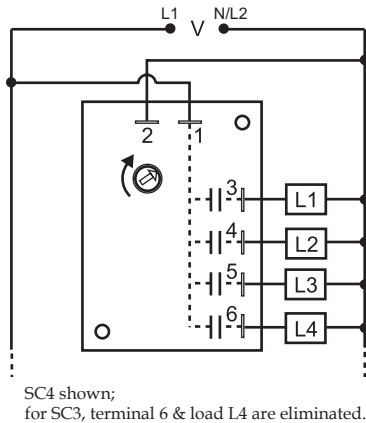
**FIGURE 7 - AF Series**



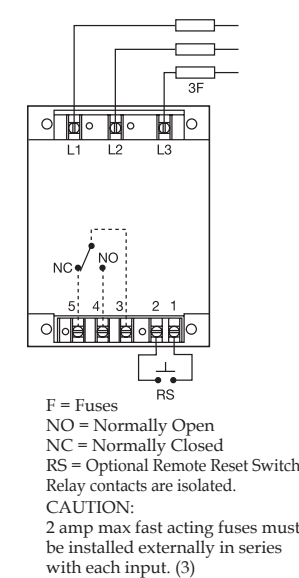
**FIGURE 8 - FS500 Series**



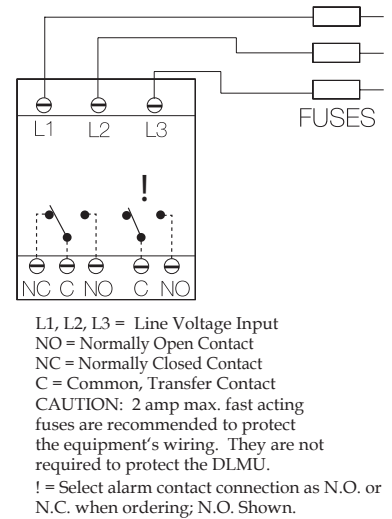
**FIGURE 9 - SC3/SC4 Series**



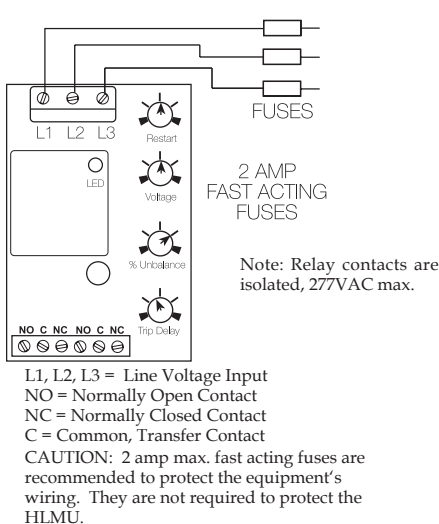
**FIGURE 10 - WVM Series**



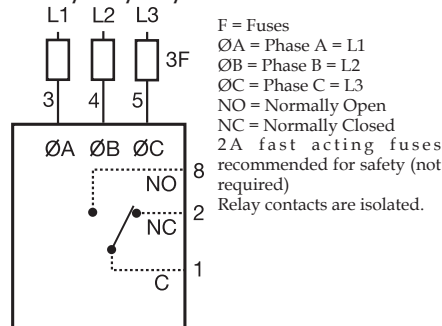
**FIGURE 11 - DLMU Series**



**FIGURE 12 - HLMU Series**



**FIGURE 13 - PLMU/PLM/PLR/PLS Series**



**FIGURE 14 - TVM/TVW Series**

