

Impulse Latching Relay NLF1/NLF2 Series Solid State Relay



- Totally Solid State Latching Relay--Encapsulated
- Non-Isolation to Reduce Cost
- 1 ... 20 A with 200 A Inrush
- 24, 120, or 230 V AC Input Voltages
- NLF1--Random Switching for Inductive Loads
- NLF2--Zero Voltage Switching for Lamp and Resistive Loads

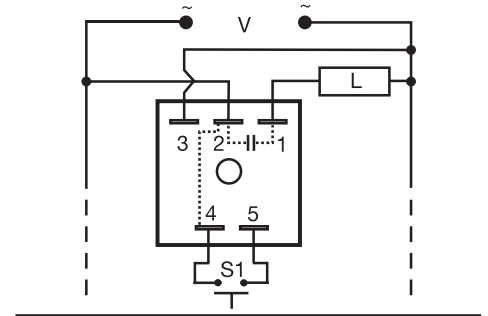
Description

The NLF1 and NLF2 provide a *Flip-Flop* latching function. Each time the control switch is closed, the solid state output changes state and latches. The NLF Series has no isolation between the control switch and the solid state output, which lowers cost and reduces the number of connections required. For use where the control switch is the same voltage source as the load. Zero voltage switching NLF2 extends the life of an incandescent lamp up to 10 times. Random switching NLF1 is ideal for inductive loads. When fully insulated female terminals are used on the connection wires, the system meets the requirements for touch-proof connections.

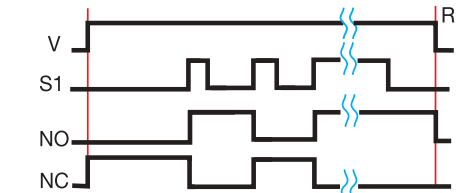
Operation

The solid state output is located between terminals 1 and 2, and can be ordered as either normally open or normally closed, when voltage is applied. When S1 is closed, the solid state output between terminals 1 and 2 closes (or opens). If S1 is opened and reclosed, the solid state output will open (or close).

Reset: Open and reclose S1. Reset is also accomplished by removing and reapplying input voltage.



Impulse Latching Relay



V = Voltage L = Load S1 = Control Switch
 R = Reset CV = Control Voltage
 NO = Normally Open Output
 NC = Normally Closed Output
 —||— = Undefined time

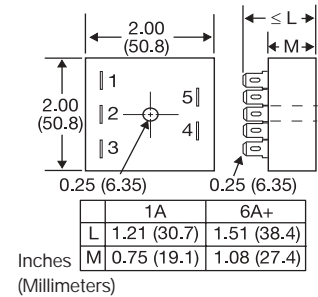
Ordering Table

X Series	X Input	X Output Rating	X Output Form
NLF1 (Random Switching)	2 - 24 V AC 4 - 120 V AC 6 - 230 V AC	1 A 6 A 10 A 20 A	A - Normally Open B - Normally Closed
NLF2 (Zero Voltage Switching)			

Example P/N: **NLF1410A**

Technical Data

Output																
Type	Non-isolated solid state															
Form	SPST, normally open or normally closed															
Ratings	<table border="1"> <thead> <tr> <th>Steady State</th> <th>Inrush*</th> <th>Output Device</th> </tr> </thead> <tbody> <tr> <td>1 A</td> <td>10 A</td> <td>SCR & Bridge Rectifier</td> </tr> <tr> <td>6 A</td> <td>60 A</td> <td>Triac</td> </tr> <tr> <td>10 A</td> <td>100 A</td> <td>Triac</td> </tr> <tr> <td>20 A</td> <td>200 A</td> <td>Triac</td> </tr> </tbody> </table>	Steady State	Inrush*	Output Device	1 A	10 A	SCR & Bridge Rectifier	6 A	60 A	Triac	10 A	100 A	Triac	20 A	200 A	Triac
Steady State	Inrush*	Output Device														
1 A	10 A	SCR & Bridge Rectifier														
6 A	60 A	Triac														
10 A	100 A	Triac														
20 A	200 A	Triac														
Minimum Load Current	50 mA															
Voltage Drop (at Rated Current)	≅ 2.0 V - 6, 10, & 20 A units; ≅ 2.5 V - 1 A units															
Leakage Current (Open State)	≤ 5 mA															
Input																
Type	Non-isolated, common with output															
Voltage	24, 120, or 230 V AC +/-20%															
Power Consumption	≤ 0.5 W															
Operations Per Second	≤ 5															
Protection																
Circuitry	Encapsulated															
Dielectric Breakdown	≥ 2000 V RMS terminals to mounting surface															
Insulation Resistance	≥ 100 MΩ															
Mechanical																
Mounting *	Surface mount with one #10 (M5 x 0.8) screw															
Package	6, 10, 20 A units: 2 x 2 x 1.51 in. (50.8 x 50.8 x 38.4 mm) 1 A units: 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															
Environmental																
Operating Temperature	-20°C ... +60°C															
Storage Temperature	-40°C ... +85°C															
Humidity	95% relative, non-condensing															
Weight	1 A units: ≅ 2.4 oz (68 g) 6, 10, 20 A units: ≅ 3.9 oz (111 g)															



Accessories

Female Quick Connect Terminals
 These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.



P/N:	Wire Size
P1015-13	AWG 10/12 (5.3/3.2 mm ²)
P1015-64	AWG 14/16 (2.5/1.3 mm ²)
P1015-14	AWG 18/22 (0.93/0.33 mm ²)

Quick Connect to Screw Adaptor
 Converts 0.25 in. (6.35 mm) female quick connect terminal to screw terminal.



P/N: P1015-18

*Units rated ≥ 6 A must be bolted to a metal surface using the included heat sink compound. The maximum mounting surface temperature is 90°C. Inrush: Non-repetitive for 16 ms.