Single Function Relays
SIR Series

Solid-State Relay – Isolated



Description

The solid-state SIR series relays are designed for industrial applications requiring rugged, reliable operation. These relays provide an optically-isolated, high-capacity, solid-state output with power switching capability up to 20 A steady state, 200 A inrush. The SIR2 zero voltage switching is intended for resistive and incandescent loads and can extend the life of an incandescent lamp up to 10 times. The SIR1 random switching is intended 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 3 and is normally open or closed without control voltage applied to terminals 4 and 5. When control voltage is applied to terminals 4 and 5, the solid-state output opens or closes, respectively.

Reset
Removing control voltage resets the output. The unit can also be reset if the output voltage is removed.

Features & Benefits

FEATURES	BENEFITS
Entirely solid-state and encapsulated	No moving parts to arc and wear out over time Protects against shock, vibration, and humidity
Up to 20 A, 200 A inrush output rating	Provides direct control of heavy inductive, incandescent, or resistive loads
Switching output is optically isolated from the control input	Provides the ability to interface between 2 different electrical circuits
SIR1 models – random switching	Ideal for inductive loads
SIR2 models – zero voltage switching	Ideal for resistive and incandescent loads
Metalized mounting surface	Facilitates heat transfer in high-current applications

Applications

- Inductive, resistive, and incandescent loads
- Industrial systems requiring rugged, reliable operation

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Specifications

Output

Type	Optical isolation, totally solid state
Form	SPST, NO or NC
Voltage	24, 120, or 230 V ac
Tolerance	±20%

Ratings

Steady State	Inrush*	Output Device
3 A	30 A	Triac
6 A	60 A	Triac
10 A	100 A	Triac
20 A	200 A	Triac

Minimum Load Current	≅ 50 mA
Voltage Drop	≅ 2.0 V at rated current
Leakage Current (Open State)	≅ 6 mA

Input

Type Optical isolation	LED/photo transistor
Control Voltage	9 to 290 V ac/dc in 3 ranges
Power Consumption	≤ 0.5W

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
Dimensions	**H** 50.8 mm (2.0"); **W** 50.8 mm (2.0"); **D** 38.4 mm (1.51")
Termination	0.25 in. (6.35 mm) male quick connect terminals

Environmental

Operating/Storage Temperature	-40 °C to 60 °C / -55 °C to 85 °C
Humidity	95% relative, non-condensing
Weight	≅ 3.9 oz (111 g)

*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.

Certification & Compliance

UL Recognized	File E57310 UL508
CSA	File LR057415

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.

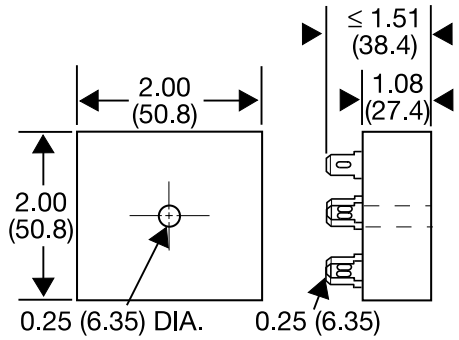
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Ordering Information

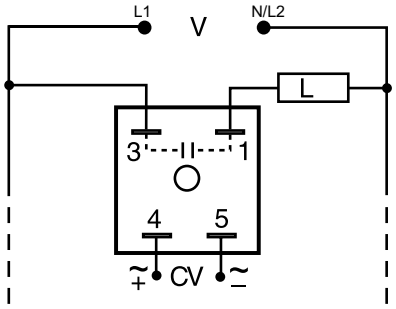
MODEL	SWITCHING	CONTROL VOLTAGE	RATING	OUTPUT FORM	OUTPUT VOLTAGE
SIR1B6B4	Random	90 to 150 V ac or dc	6 A	Normally closed	120 V ac
SIR2A20A4	Zero voltage	9 to 30 V ac or dc	20 A	Normally open	120 V ac
SIR2B20A4	Zero voltage	90 to 150 V ac or dc	20 A	Normally open	120 V ac
SIR2B20B4	Zero voltage	90 to 150 V ac or dc	20 A	Normally closed	120 V ac

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

Dimensions Inches (mm)



Wiring Diagram

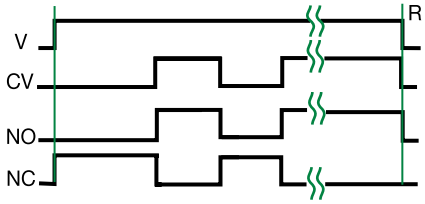


V = Voltage
CV = Control Voltage
L = Load

Load may be connected to terminal 3 or 1.

Note: Normally open output is shown. Normally closed output is also available.

Function Diagram



V = Voltage
CV = Control Voltage
NO = Normally Open Contact
NC = Normally Closed Contact
R = Reset
⫽ = Undefined Time

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