## 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



# **Single Function Relays** SIR Series

## **Specifications**

Output

**Type** Optical isolation, totally solid state

 Form
 SPST, NO or NC

 Voltage
 24, 120, or 230 V ac

Tolerance ±20%

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

**Minimum Load Current**  $\cong 50 \text{ mA}$ 

**Voltage Drop** ≈ 2.0 V at rated current

**Leakage Current (Open State)**  $\approx 6 \text{ mA}$ 

Input

**Type Optical isolation**Control Voltage
LED/photo transistor
9 to 290 V ac/dc in 3 ranges

**Power Consumption**  $\leq 0.5W$ 

**Protection** 

**Circuitry** Encapsulated

**Dielectric Breakdown** ≥ 2000 V RMS terminals to mounting surface

**Insulation Resistance**  $\geq 100 \text{ M}\Omega$ 

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** 

 $\begin{array}{ll} \textbf{Operating/Storage Temperature} & -40 \ ^{\circ}\text{C to } 60 \ ^{\circ}\text{C} \ / \ -55 \ ^{\circ}\text{C to } 85 \ ^{\circ}\text{C} \\ \textbf{Humidity} & 95\% \ \text{relative, non-condensing} \\ \end{array}$ 

Weight  $\approx 3.9 \text{ oz } (111 \text{ g})$ 

# **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.



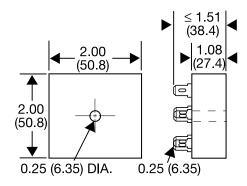
<sup>\*</sup>Must be bolted to a metal surface using the included heat sink compound. The maximum mounting surface temperature is 90 °C. Inrush: Non-repetitive for 16 ms.

# **Ordering Information**

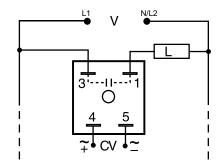
MODEL	SWITCHING	CONTROL VOLTAGE	RATING	OUTPUT FORM	OUTPUT VOLTAGE
SIR1B6B4	Random	90 to 150 V ac or dc	6 A	Normally closed	120 V ac
SIR2A20A4	Zero voltage	9 to 30 V ac or dc	20 A	Normally open	120 V ac
SIR2B20A4	Zero voltage	90 to 150 V ac or dc	20 A	Normally open	120 V ac
SIR2B20B4	Zero voltage	90 to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

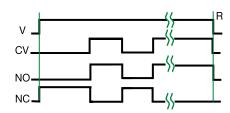
CV = Control Voltage

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

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