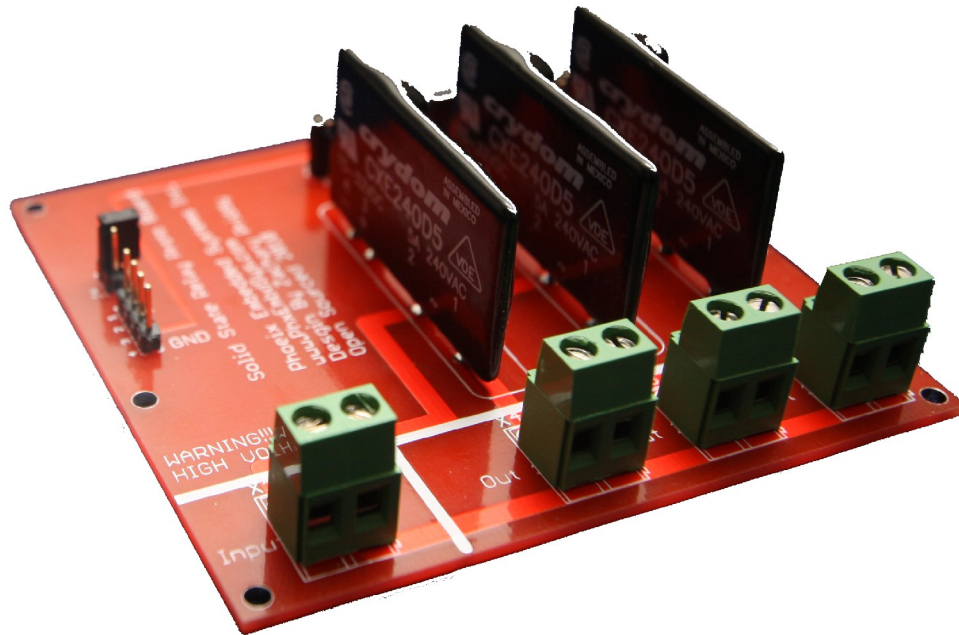


## Solid-State Relay Prototype Board Version 1.0 Revision A



## DESCRIPTION

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The solid state relay prototype board gives you a convenient way to prototype applications that will be using solid state relays to switch high voltages up to 5A using a protected control line.

## APPLICATIONS

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- Small-scale home automation and Industrial Control
- Holiday displays
- Rapid high voltage prototyping

## FEATURES & BENEFITS

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- Controls up to three solid-state relays
- Up to 15 Amps total load
- Low voltage control lines
- Common jumper selection to control up to all three relays with a single control

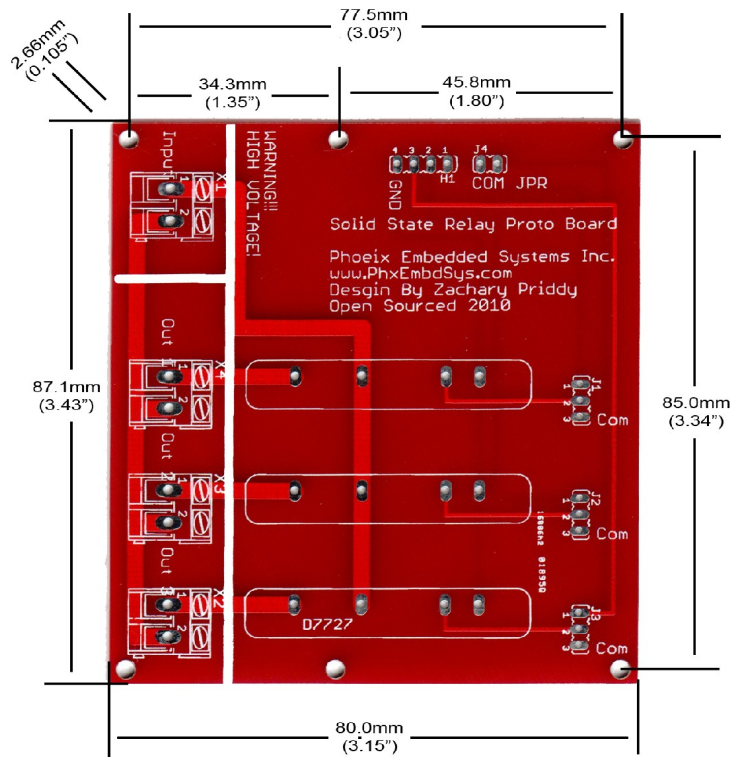
## WARNING!



THE SOLID-STATE RELAY PROTOTYPE BOARD (SRPB) CONTROLS EXTREMELY HIGH VOLTAGES! IT IS THE USERS RESPONSIBILITY TO MAKE SURE THAT THE WIRES USED TO MAKE ELECTRICAL CONNECTIONS ARE RATED TO HANDLE THE LOADS BEING USED, AS WELL AS MAKING SURE THAT THEY ARE MOUNTED PROPERLY AND ARE ELECTRICALLY INSULATED. WHENEVER WORKING ON THE SRPB MAKE SURE THAT THE VOLTAGE SOURCE IS DISCONNECTED. DO NOT HANDLE THE SRPB WHILE THE VOLTAGE SOURCE IS CONNECTED.

# 1.0 MECHANICAL

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## 1.1 Installing Relays

Relays must be installed and soldered to the board before mounting and operating. The relays used can only be inserted one way, with the control pins being closer together than the load pins. Use caution when inserting the relays, force should not be necessary. A list of compatible relays can be found below. If using relays other than those listed below, it is the user's responsibility to ensure electrical and mechanical compatibility with the SRPB-1.



It is recommended that you use active cooling to ensure that the relays do not over heat while operating heavy loads.

## **1.2 Recommended Relays**

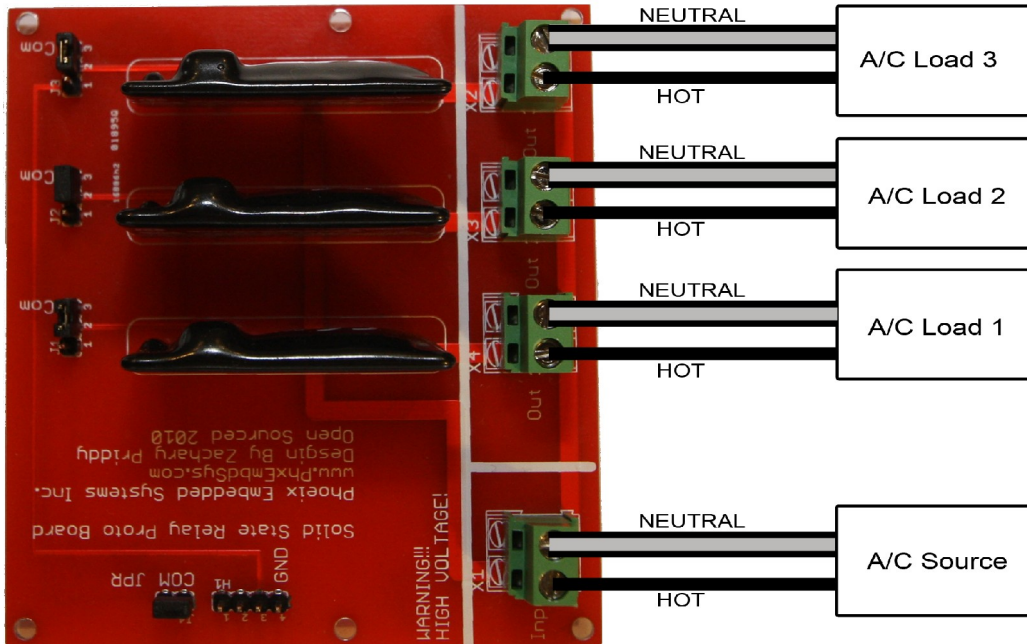
<b>Manufacturer</b>	<b>Model</b>	<b>Control</b>	<b>Load</b>
Crydom	CX240D5	3-15 VDC @ 15 mA	12-280 VAC @ 5 A
Crydom	CX380D5	4-15 VDC @ 15mA	48-530 VAC @ 5 A
Panasonic	AQ3A2-C1-T5VCD	5VDC	75-250 VAC @ 3 A
Tyco Electronics	SSRC-240D5	3-15VDC @ 15mA	12-280 VAC @ 5 A
Tyco Electronics	SSRC-480D5	4-15VDC @ 15mA	48-660 VAC @ 5 A

Many other relays are compatible with the SRPB-1 and the list above is far from exhaustive. When selecting a relay use caution in selecting the load voltage, 5 amps per relay is the maximum recommended load.

## **1.3 Mounting**

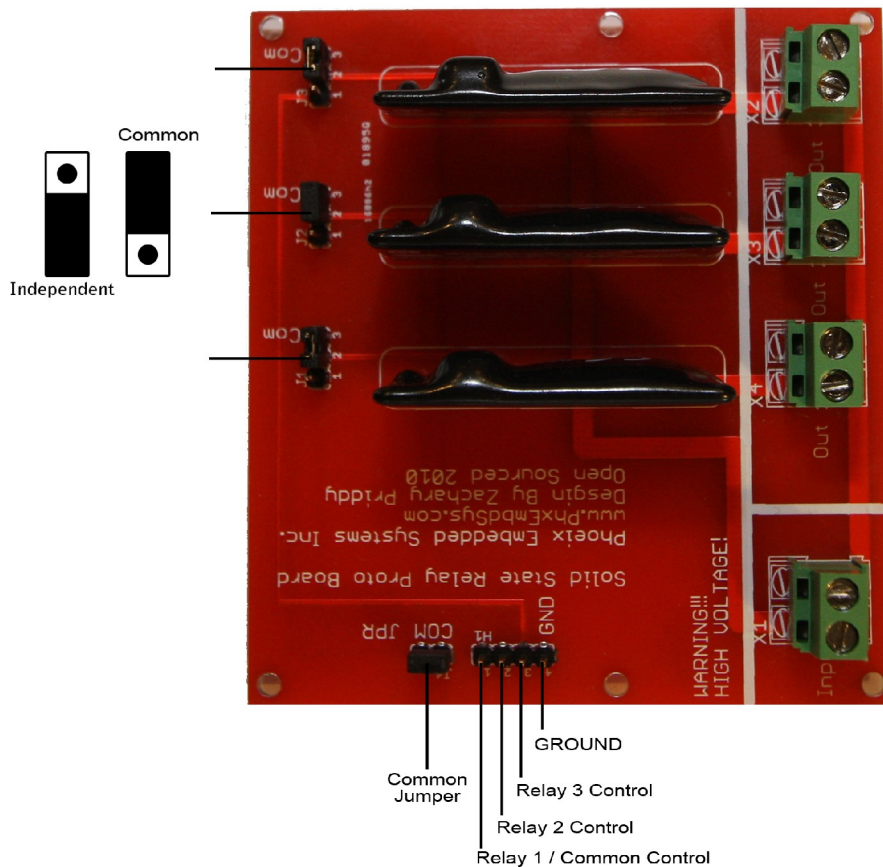
The SRPB-1 can use high voltages and therefore should be mounted using standoffs, or mounted to a non-conductive surface. Not using proper insulation can result in component failure, or personal injury even death. The user is responsible for taking proper insulating procedures.

## 1.4 Input & Output AC Connections



Most power cables designed for use in the home are not capable of carrying the full load that the board is capable of supplying. Caution must be used in selecting the cables that will supply the power to the board.

## 1.5 Control Connections



## 2.0 Fully Assembled Board

The board comes fully assembled with the following parts:

- (3) Crydom CX240D5

The Crydom is capable of controlling a 12 – 280 VAC load at 0.06 – 5 Amps. To control the load you must apply a 3 – 15 VDC at 15 mA signal to the control lines.

There is a common jumper (COM JPR) so that two or three of the relays can be controlled using the same signal. You must place a jumper over the COM JPR pins as well as on pins two or three of the pin headers located above the relays.