

### Product overview

The CIO-ERB48 provides 48 single pole, double throw (SPDT) Form C electromechanical relays on a 17" x 4.5" circuit board. A single connector scheme allows interfacing to any Measurement Computing Corporation (MCC) digital I/O board with 50-pin or 100-pin connectors.

The CIO-SERB48 provides similar functionality, but includes 10-amp, socketed/removable relays in place of the standard 5-amp relays on the CIO-ERB48.

### Interface to DIO boards

The CIO-ERB48 and CIO-SERB48 are compatible with the following MCC digital I/O boards such as the USB-DIO96H/50

- PCI-DIO48H, PCI-DIO96H
- PCI-DDA08/12, PCI-DDA04/12, PCI-DDA02/12
- CIO-DIO48, CIO-DIO96, CIO-DIO192
- CIO-DO48H, CIO-DO96H, CIO-DIO192H
- PC104-DIO48, PC104-DO48H

### Powered from the PC

The CIO-ERB48 and CIO-SERB48 do not require 110 VAC power. Both boards run from the 5 V computer power supply or from an external 5 V supply. Power is connected through a four-pin MOLEX connector, just like that found on all PC power supplies.

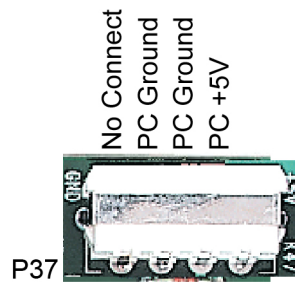


Figure 1. Molex connector (P37) pin assignments

## Screw terminal wiring

The CIO-ERB48/CIO-SERB48 has screw terminals for connecting field wiring to the relays. Each relay has three terminals: Common, Normally Open and Normally Closed. The screw terminals are high-quality jaw types that do not bind when removing wires. Wire gages 12-22 AWG are recommended.

The CIO-ERB48 has a maximum current of 4.3 A.

The CIO-SERB48 has a maximum current of 7.5 A.



Figure 2. Typical relay channel

## CIO-ERB48/CIO-SERB48 50-pin connector

The CIO-ERB48/CIO-SERB48 are designed for high-density applications. Because 48 electromechanical relays fit on one board, all 48 digital I/O lines of a DIO48 are needed to switch the relays. It is not practical to use a CIO-ERB48/CIO-SERB48 with a 24-bit digital I/O board, so there is no provision for 37-pin connectors.

The 50-pin connector is laid out in the style of all MCC 50-pin and 100-pin digital connectors, so you can use the CIO-ERB48 with a large variety of digital I/O boards.

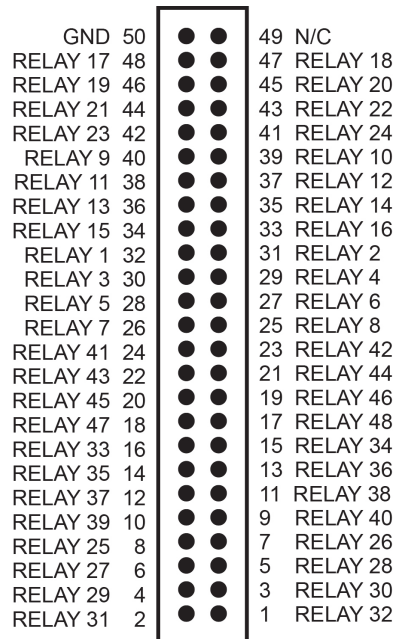


Figure 3. 50-pin connector pinout

## All Form C relays

The CIO-ERB48/CIO-SERB48 has SPDT Form C relays, with each relay having three terminals.

- The center terminal is the Common terminal. This terminal is switched between the other two.
- The Normally Closed terminal is in contact with the Common terminal whenever the CIO-ERB48/CIO-SERB488 is powered up, reset, or when a 0 is written to the controlling bit of the digital I/O board.
- The Normally Open terminal is in contact with the Common terminal whenever a 1 is written to the controlling bit of the digital I/O board.

## Buffers and pull-downs

The CIO-ERB48/CIO-SERB48 inputs from the digital I/O board are pulled to a steady state by circuitry on the board, so they do not randomly open or close on power-up. Also, buffer/ drivers on board accept signals from simple 8255 type digital I/O boards.

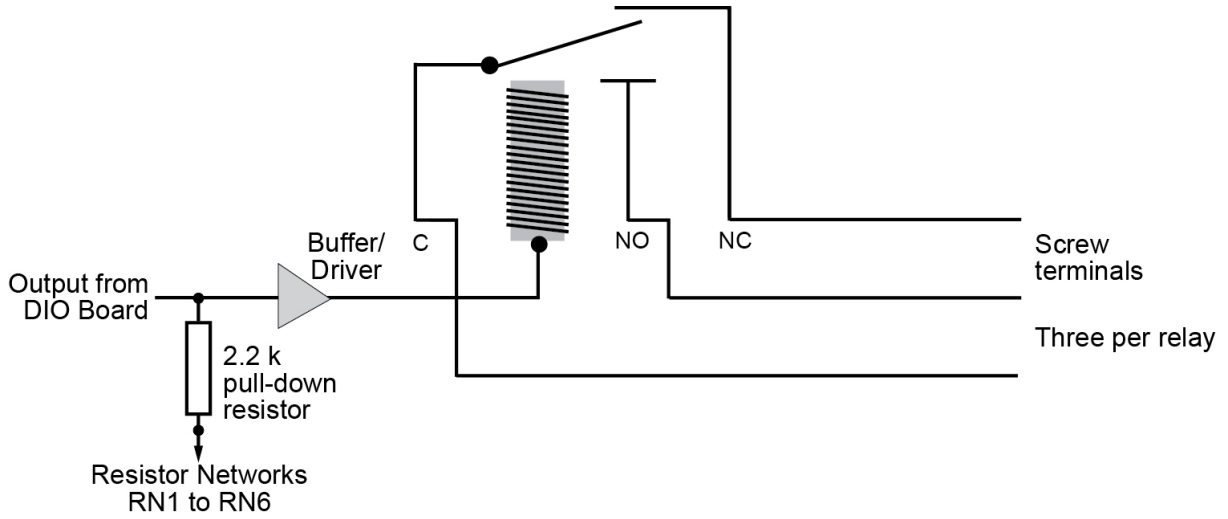


Figure 4. CIO-ERB48/CIO-SERB48 relay configuration