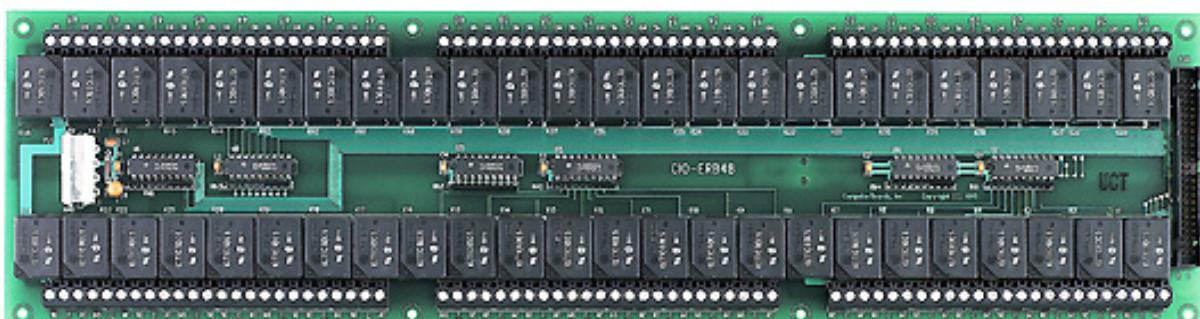


## **CIO-ERB48 and CIO-SERB48**

48 Electromechanical (Form C) Relay Mounting & Interface Rack



## 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.

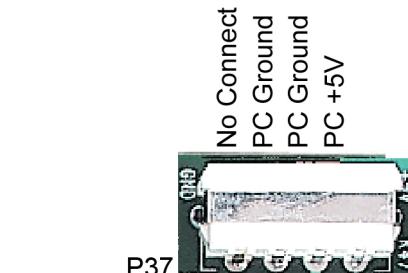


Figure 1. Molex connector (P37) pin assignments

## 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.

GND	50	● ●	49	N/C
RELAY 17	48	● ● ●	47	RELAY 18
RELAY 19	46	● ● ●	45	RELAY 20
RELAY 21	44	● ● ●	43	RELAY 22
RELAY 23	42	● ● ●	41	RELAY 24
RELAY 9	40	● ● ●	39	RELAY 10
RELAY 11	38	● ● ●	37	RELAY 12
RELAY 13	36	● ● ●	35	RELAY 14
RELAY 15	34	● ● ●	33	RELAY 16
RELAY 1	32	● ● ●	31	RELAY 2
RELAY 3	30	● ● ●	29	RELAY 4
RELAY 5	28	● ● ●	27	RELAY 6
RELAY 7	26	● ● ●	25	RELAY 8
RELAY 41	24	● ● ●	23	RELAY 42
RELAY 43	22	● ● ●	21	RELAY 44
RELAY 45	20	● ● ●	19	RELAY 46
RELAY 47	18	● ● ●	17	RELAY 48
RELAY 33	16	● ● ●	15	RELAY 34
RELAY 35	14	● ● ●	13	RELAY 36
RELAY 37	12	● ● ●	11	RELAY 38
RELAY 39	10	● ● ●	9	RELAY 40
RELAY 25	8	● ● ●	7	RELAY 26
RELAY 27	6	● ● ●	5	RELAY 28
RELAY 29	4	● ● ●	3	RELAY 30
RELAY 31	2	● ● ●	1	RELAY 32

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-SERB48 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.

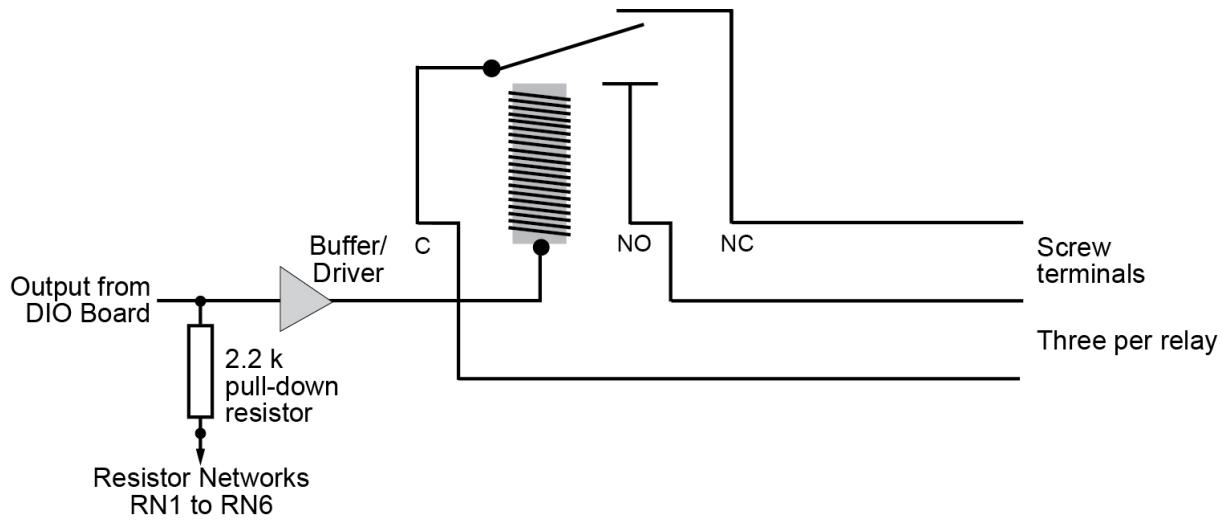


Figure 4. CIO-ERB48/CIO-SERB48 relay configuration