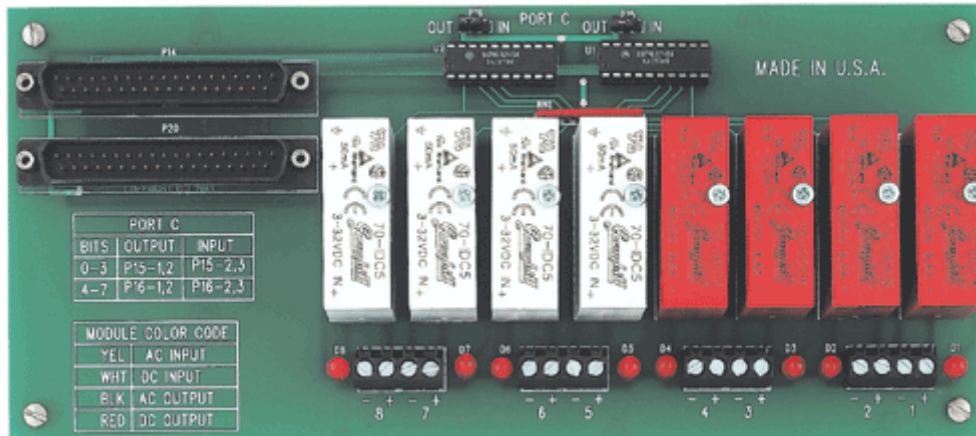


# SSR-RACK08

## Eight-Channel Solid-State Relay (OPTO22, Gordos) Mounting & Interface Rack

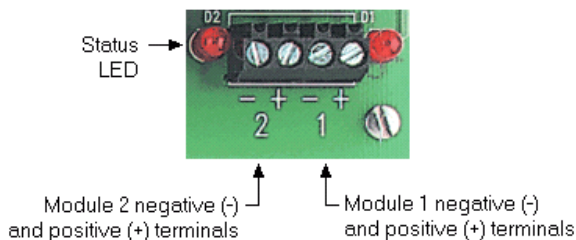


### Functional description

The SSR-RACK08 is a mounting and interface rack for use with industry-standard size solid state I/O modules. These modules provide 1500 V of isolation from harsh electrical environments for both digital inputs and outputs. Onboard TTL-level drivers provide the necessary drive current to control any compatible 5 V solid-state relay. The SSR senses (input) and switches (output) AC and DC voltages.

### Screw terminal wiring

Each SSR-RACK08 module has two independent screw terminals. Use 12-22 AWG wire to connect signals to the screw terminals. The status LED is ON when a module is active.



The screw terminal/module numbers correspond to 8255 ports:

- 1 to 4 correspond to PORT C Low Bit 0 to 3
- 5 to 8 correspond to PORT C High bits 4 to 7

### Module input/output control OUT/IN jumpers

Two jumpers are provided to set the module type for PORT C High and PORT C Low.

- The jumper labeled **P15** controls modules 1 through 4, which are controlled by PORT C Low bits (bit 0 through bit 3).
- The jumper labeled **P16** controls modules 5 through 8, which are controlled by PORT C High bits (bit 4 through bit 7).

You cannot mix input and output modules within a group.



### Solid-state I/O modules

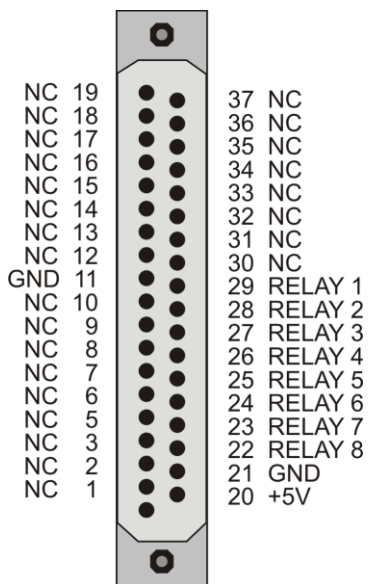
The SSR-RACK24 has eight mounting positions for solid state I/O modules manufactured by Gordos, OPTO22, Grayhill, Western Digital, and others. These modules provide 1500 V of isolation from harsh electrical environments for both digital inputs and outputs. Mounting screw threads are provided for you to easily install the SSR modules. An example of an SSR module and mounting screw is shown below.



Contact MCC for compatible modules from the SSR-OAC, SSR-ODC, SSR-IAC and SSR-IDC module series.

### 37-pin connectors

The SSR-RACK08 has two 37-pin D connectors labeled **P14** and **P20** on the board. Most pins are wired 1:1, although pins 1, 2, and 11-19 are not passed through. A typical interface connector pin out is shown below.



Use C37FF-x cables to connect with compatible MCC 24-bit digital I/O boards, such as the USB-DIO24/37. The 2<sup>nd</sup> connector is provided to access the remaining board connections.

### Onboard buffers

Because most manufacturers of SSR racks do not supply output buffers on the SSR rack, simple digital I/O boards such as the PCI-DIO24, PCI-DIO96, and other manufacturer's 82C55-based digital I/O boards do not have the power to switch the SSRs. For example, to use an OPTO22 PB16 rack, you need to use a high-drive DIO board such as the PCI-DIO24H or PCI-DIO96H.

In order to be usable with all common TTL output boards, the SSR-RACK08 is designed with onboard buffers. With these buffers, you can plug directly into the SSR-RACK08 from your PCI-DIO24, PCI-DIO96, or any other manufacturer's 82C55-based digital I/O board.

### SSR-RACK inverting logic

On an input SSR, the presence of a voltage raises the TTL output of the SSR from TTL low to TTL high. Because the SSR-RACK uses the conventional inverting logic, the completed circuit of SSR and SSR-RACK lowers the signal to the DIO board from TTL high (+5) to TTL low (GND). An output SSR completes a circuit when the DIO board TTL signal to the SSR is low. The circuit through the SSR is open when the signal from the DIO board is high.

### Converting the SSR-RACK from inverting logic

The SSR-RACK follows the convention set by OPTO22 and followed by virtually all SSR rack manufacturers — the sense and control logic for the relays is inverted. This means that a 0 output from the digital I/O board causes an output relay to activate (complete the circuit), while a 1 (TTL high) causes the relay to deactivate. The chips which invert the logic are socketed and can be easily replaced with chips that do not invert the logic. Discuss your order with a technical sales engineer if you need non-inverting logic.