

### 4803/2303 RELAY DRIVER BOARD

#### Description

The 4803DVR Board expands the 4803's or 2303's output drive capability by adding heavy duty solenoid drivers to each output signal. The 4803DVR is designed so that the user can configure all 40 of the 4803's lines with solenoid drivers or use the first eight or sixteen 4803 lines as inputs. Screw terminals on each line make it easy to connect signals and power to the 4803DVR.

#### Compact Assembly

The 4803 and 2303 Interface Boards with Digital I/O Connectors on the circuit side piggyback on top of the 4803DVR Board to make a compact assembly that is only 4.5 inches wide by 7 inches long by 1.25 inches high. The 4803DVR is powered by the user's power supply that drives the external relays. The 4803DVR contains a small switching regulator that supplies 5 volt power to the 4803 or 2303 Interface Board, eliminating the need for a separate 5 volt power supply.

#### Using Existing 4803 and 2303 Boards

A version of the 4803DVR Board is available with a female connector on the circuit side for mating with standard, connector up 4803 and 2303 boards. Using standard 4803 or 2303 boards adds 0.6 inches to the overall assembly height as shown in Figure 2 on page three. All other specifications are the same

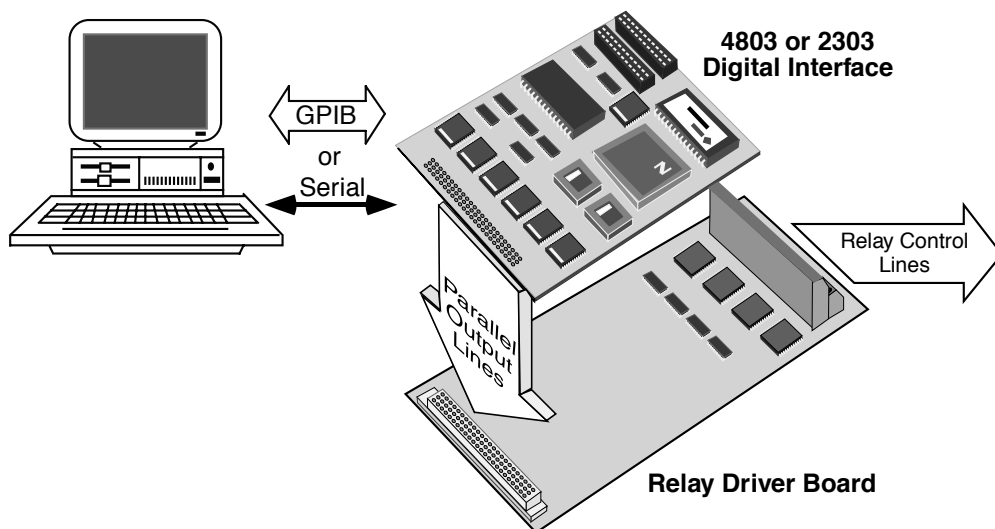


4803 Relay Driver Board

#### High Current Relay Drivers

The 4803DVR Board is equipped with 40 open-collector darlington type drivers that can sink up to 300 mA to operate relays, solenoids or other heavy loads. The drivers can handle voltages up to 48 volts. The 4803DVR's driver circuits have been designed to be glitch free so as to not pulse the external relays at power turn-on or turn-off. The output drivers are controlled by any of the 4803's output commands. They can be operated by bit commands that toggle one bit at a time, by byte wide commands that control 8 bits at a time or by string commands which can control multiple bytes at a time.

- Provides up to 40 outputs for driving external relays or other heavy loads..  
*Eliminates the need for external drivers and logic circuits.*
- Provides up to 16 inputs  
*Input TTL/CMOS data or sense contact closures*
- Powers 4803 or 2303 Interface Board from user's relay power supply.  
*Eliminates a separate 5 volt power supply.*
- All I/O lines have screw terminals.  
*Easy signal connection.*
- Mates with ICS's 2303 and 4803 Boards.  
*Drive relays and digital signals from the GPIB bus or a Serial source.*



Adding relay drivers to a 2303 or 4803 Board



7034 Commerce Circle  
Pleasanton, CA 94588  
Phone: 925.416.1000  
Fax: 925.416.0105  
Web: [www.icselect.com](http://www.icselect.com)

## Input Lines

The 4803DVR Board can be configured so that the first 8 or 16 digital I/O lines can be directly connected to the 4803 or 2303 board and used as inputs. When the rocker switches are set On, the Byte 1 and Byte 2 terminals are routed directly to the 4803 or 2303 board. Each input has a 33 kohm pullup to +5 Vdc to handle TTL, CMOS and contact closure inputs. Configuring the 4803DVR Board for inputs is done by changing two jumpers on the 4803DVR Board.

The configuration choices are:

Inputs	Relay Driver Outputs
0	40
8	32
16	24

## 4803 Relay Driver Assembly

The photo above and Figure 1 on the right shows how a 4803 with a circuit-side connector mounts on the 4803DVR Board. The 4803 board is positioned over J1 on the 4803DVR Board and pressed into place. A pair of 0.688 high female-to-male standoffs holds the front portion of the two boards together. The rear portion is held by the mating force of the two 64 pin DIN connectors. Signal and power wires are attached to the terminal blocks.



4803Dvr Board with a 4803 installed on top

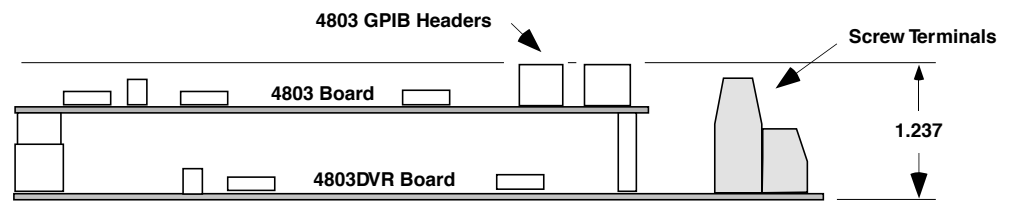
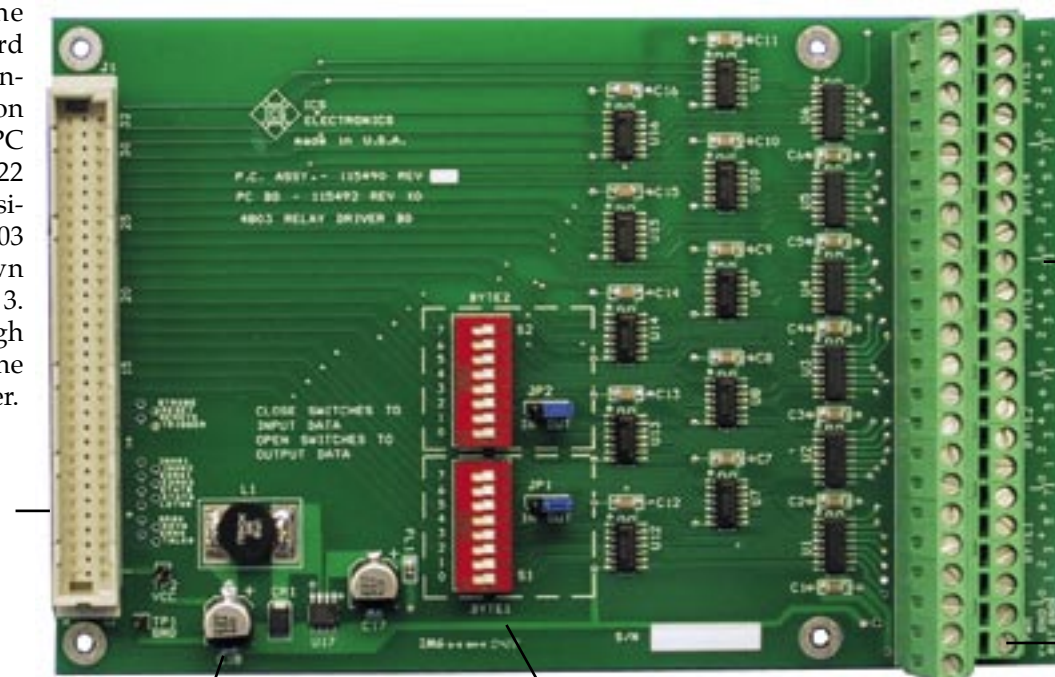


Figure 1 4803 Dvr Board with a connector down 4803 or 2303 board

Standard connector-up 4803 or 2303 boards can be used with a Relay Driver Board by ordering a 115522 DVR Board. The 115522 DVR Board has its digital connector mounted on the bottom of the PC board. The 115522 DVR Board is positioned over the 4803 and pressed down as shown on page 3. A pair of 0.688 high standoffs holds the two boards together.

Mating connector for a 4803 or for a 2303



5 volt power supply

Switches connect terminals to 4803 input lines

4803/2303 signals identified by byte and by bit

Relay power input

4803DVR: Specifications

4803 Interface

4803DVR supplies a male DIN connector for mounting a 4803 or 2303 with its Digital I/O connector on the circuit side. Power supplied by a switching power supply on the 4803DVR board.

Supplied Power	
Voltage	+5 ± 0.2 Vdc
Current	500 mA max

4803DVR Connections

The following 4803 lines are used by the 4803DVR Board:

- 40 Digital I/O lines
- Stable Signal
- External Reset Input

Other 4803 Signals

The following 4803 signals are brought to pads on the 4803DVR Board and are available to the user:

- Remote LED Signals
- PWR, RDY, TALK, LSTN, SRQ and ERR
- EDR and Inhibit pairs #1 and #2
- Status A and Status B inputs
- Trigger, Remote and Reset outputs

Driver Characteristics

High power outputs for driving relays or other loads. Output lines controlled by 4803/2303 Source commands with polarity set to high true.

Number	24, 32 or 40 Lines
Driver Form	Open collector with anti-backlash diode.
Current	up to 300 mA
Vout low	1.3 volts at 300 mA
V max	32 Vdc

Input Signal Characteristics

TTL inputs with pullups for CMOS signals and contact closures. The number of input signals subtracts from the number of available outputs. Inputs read by 4803 or 2303 Sense commands or monitored by the Questionable Register.

Number	16, 8 or none
High	> 2.4 Vdc or open
Low	< 0.5 Vdc at 200 µA
Pullup resistor	33 kohms to +5 Vdc

External Reset Input

TTL input signal that resets the 4803 or 2303 board when pulled to ground. Pullup provided by the 4803 or 2303 board.

Physical

Size, L x W x H	177.8 x 114.3 x 14.3 mm (7.0x 4.5 x 0.562 inches)
Assembled dimensions with 4803/2303	177.8 x 114.3 x 32.3 mm (7.0x 4.5 x 1.265 inches)
Connectors and Headers	
4803	96-pin, 3 row male DIN conn using rows A & C. Screw terminals for #22 AWG wire
Relays	
Temperature	
Operation	-10° C to +70° C
Storage	-20° C to +85° C
Humidity	0-90% RH without condensation
Power	+7 to + 32 Vdc @ 4 VA (typical)

Included Accessories

Instruction Manual  
2 Standoffs and locknuts

Available Accessories

GPIO Connector/ Addr Sw Assy with flat ribbon cable, 90 cm max., P/N 113640-90 or 113642-90. See GPIO Conn/Sw data sheet.

GPIO Flat Ribbon Cable Assy with GPIO Connector and metric studs, 90 cm max. P/N 114439-90.

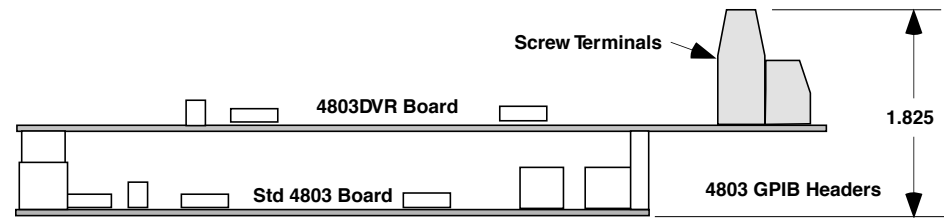


Figure 2 Using a standard 4803 or 2303 Board with a 115522 4803DVR Board

ORDERING INFORMATION

	Part Number
4803 Relay Driver Board for 4803/2303s with circuit-side connectors. Includes Instruction Sheet.	115490
4803 Relay Driver Board for standard 4803/2303s. Includes Instruction Sheet.	115522
Mating 4803 GPIB to Parallel board with connector on circuit-side. Includes Manual and Support CD	114648
Mating 4803 GPIB to Parallel board with connector on circuit-side. (Board only)	114649
GPIO Connector/ Address Switch Assemblies	see separate data sheet
Mating 2303 Serial to Parallel board with connector on circuit side. Includes Manual and Support CD	114732
Mating 2303 Serial to Parallel board with connector on circuit side. (Board only)	114733