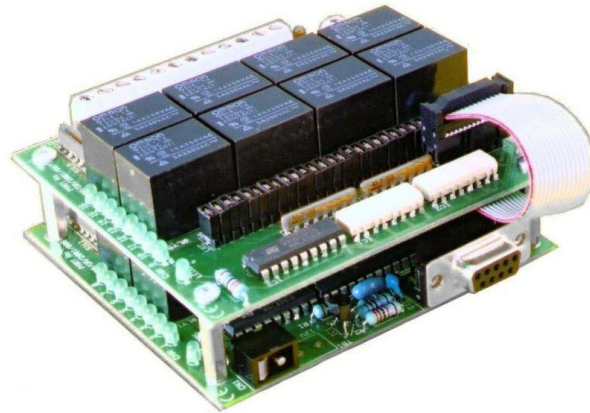


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Features

- PC104 format card stack with 16 onboard change-over relays and digital I/O option
- Card tracking will handle 4.5 amps (relays have a 10 amp contact rating)
- Digital output channels can supply upto 20mA (40mA max per 8 channels)
- Input channels can be configured for use as either relay contacts or digital input channels via onboard links
- LED channel and power status indicators
- Example programs are available for LabView, Visual Basic and C++
- 2.5mm jack socket or screw terminal power connection option
- Supplied with nylon feet (will take self tapping screws)
- Corner mounting holes allow cards to be stacked if required
- A protective perspex cover & base is also available
- Option of either a 9 way D type (female) or 10 way header connector serial port connector
- 0V, 5V (@150mA) and 12V also taken to a separate 3 way screw terminal block adjacent to the relay contact screw terminal block
- Standard (9 way D Type straight through) serial cable required for connection to PC serial port



Description

This card is an industry standard PC104 profile, sixteen channel relay card (stack). It is designed to be connected to any RS232 compatible serial port and commanded via a simple command protocol. Each output can be independently set under software control. The PCB tracking will handle 4.5 amps (relays have a 10 amp contact rating).

Each card has two screw terminal blocks which allow connection to all of the NO/Com/NC contacts of the 8 onboard relays. A third screw terminal block is provided giving user access to the 0V, 5V and 12V DC power connections.

Specifications

Serial Interface

Standard RS232 electrical interface with 9 way (female) D Type connector.

Power supply

12V DC

Power consumption

10 mA standby, 300 mA all relays active

Operating temp range

0-70°C

Relays

See page 3 for technical details of the relays used

Output channels

5V (max) @ 20mA (max) per output or 40mA (max) for per group of 8 channels

Dimensions (stack)

Approx 90mm (D) 95mm (W) 45mm (H) (exc feet)

Order codes

SERDIO16R

9 way D type input & screw terminal output connector

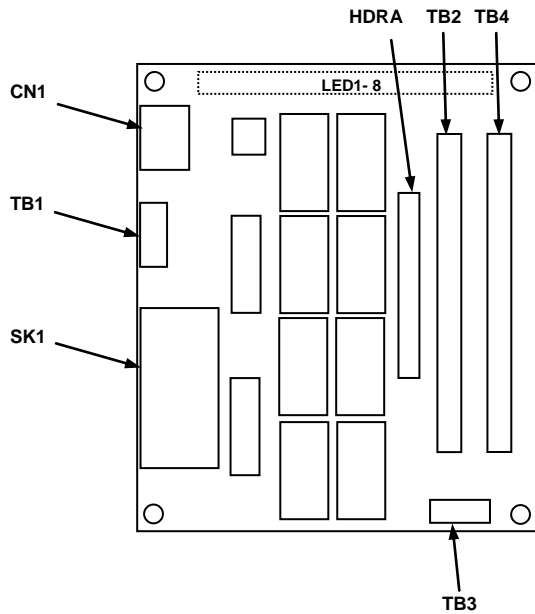
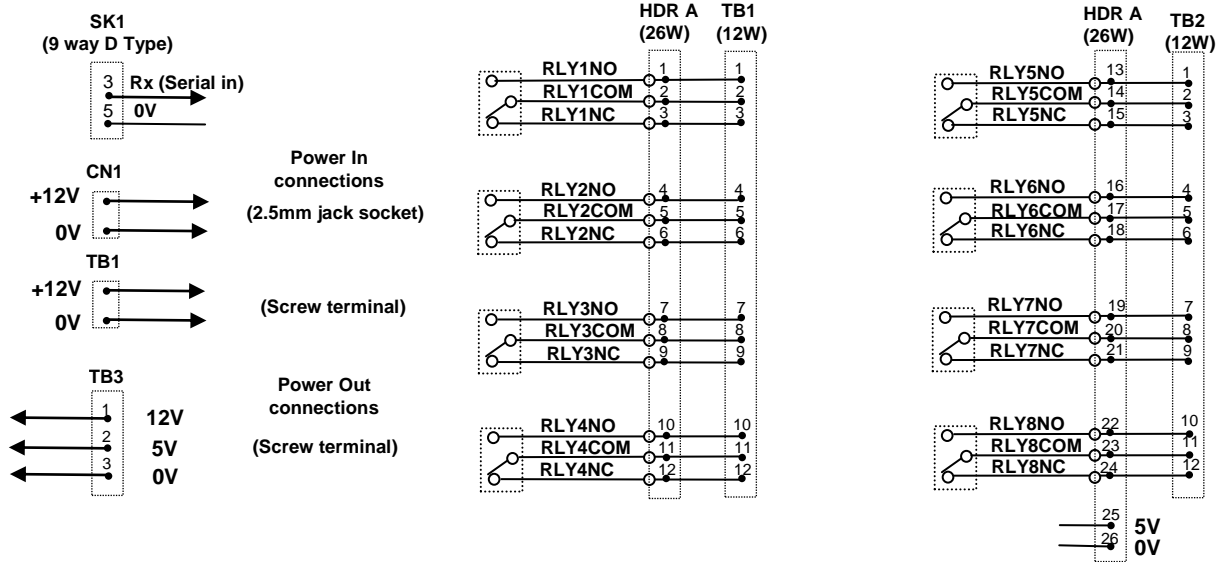
SERHDRDIO16R

10 way header input & screw terminal output connector

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Connection details

External connections to the card are shown below:



PCB layout

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<i>Specifications: Relays</i>		
Parameter	Specification (Power relays)	Specification (Signal relays)
Rated voltage/current	5VDC/80mA	5VDC/42mA
Must operate/release voltage	75%/10% of rated voltage	75%/10% of rated voltage
Contact ratings	10A/240VAC/8A 30VDC	1A/120VAC/1A 30VDC
Contact resistance	100mΩ max	100mΩ max
Operate/release time	10mS/5mS	5mS/5mS
Contact bounce period	0.6mS operate/ 7.2mS release	0.6mS operate/ 7.2mS release
Contact material	AgSnO ₂	AgAu
Operational life (min)	Mechanical 10 ⁷ / Electrical 10 ⁵	Mechanical 10 ⁷ / Electrical 10 ⁵
Contact arrangement	SPDT	SPDT

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Serial Port settings

Baud rate: 9600
Parity: 0
Data: 8 bits
Stop bits: 1

Handshaking

None – output status reflects incoming data bytes.

Command format

The following commands show the ASCII characters required to command each port of the PIC device (Hex equiv shown in brackets - can be commanded via Windows HyperTerminal – see below).

Port B (Channels 1-8) commands:

A (41H), X Read Port B (Char X=don't care. Device sends 1 byte of returned data).
B (42H), X Set direction of Port B, 1=Input, 0= output. (i.e. X=10111111 (AFH) = bit 6 output, the rest inputs).
C (43H), X Write data X to Port B (i.e. X=00000001 (01H), sets channel 1 to active).

Port C (Channels 9-16) commands:

D (44H), X Read Port C (Char X=don't care. Device sends 1 byte of returned data).
E (45H), X Set direction of Port C (see above example).
F (46H), X Write data X to Port C (see above example).

Valid data bytes are latched by the card until a further valid data byte is written to it.

Using Windows HyperTerminal

In order to test operation, the card can be connected to a serial port and controlled from HyperTerminal. Ensure port configuration is set as shown above, type (ASCII) characters shown above to achieve port direction and read or write command/data.

Example downloads

Example driver files and executables are available from the 'downloads' area of our website (www.easydaq.co.uk). Example programs are available for LabView, Visual Basic and C++.