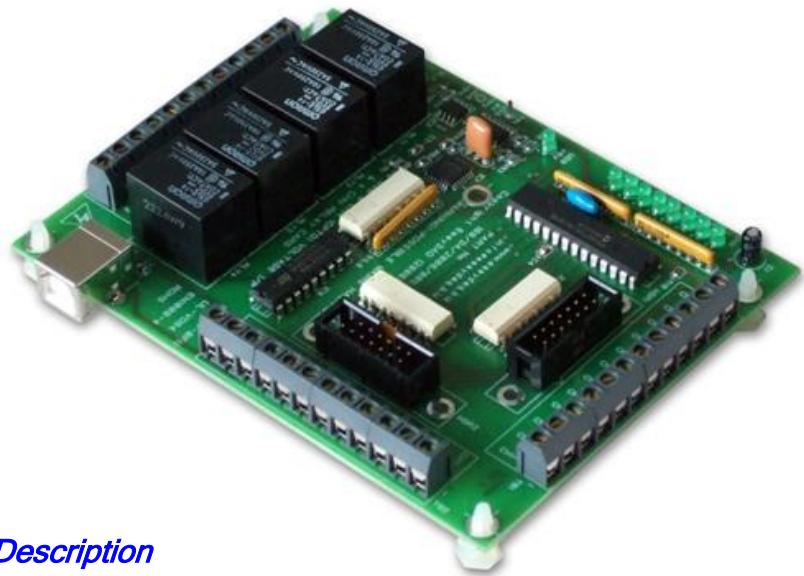


Product Datasheet 25
Features

- USB connected/powering, hot pluggable, 8 channel (opto isolated) voltage input, 4 channel DIO & 4 channel power/signal relay card
- Low cost, small profile, stackable
- OS compatibility: Win98SE/ME/2K/XP/Vista, Windows CE, Mac OSX and Linux
- Example code downloads available for: Labview, VB, VC, C#, JAVA, Agilent VEE & Delphi. Uses simple ASCII/Hex text command strings
- Two types of screw terminal connector available: Fixed screw terminal blocks or two part (male/female), quick disconnect type connectors
- Same profile as our existing range of USB products. Several cards (of different types) from our existing range of USB card products could be stacked
- Opto isolated DC voltage input range (Logic High): 5V to 100V (DC max), Logic Low 0V to 1.5V
- USB opto-isolation from Voltage Input & Relay channels to 2500V (ACVrms min). Uncommitted opto-isolated inputs allow complete electrical isolation if needed
- LED status indicators for USB connection/ power, Voltage Input channels and Relay activation status
- 0V/5V available at screw terminal connectors for onward powering (300mA max), relay switching, contact closure purposes etc
- Relays are SPDT, Form C, changeover type, with N/O, COM and N/C contacts taken to screw terminal blocks
- Two types of relay available: 10A/240V AC power relay and 1A, high sensitivity (gold contact) signal relay (PCB tracking will handle 10 amps @ 240V AC, or 8A @ 30V DC)
- Screw terminal connector access to NO/C/NC relay contacts (4 onboard relays)
- Screw terminal and (14W) header connector access to 8 Voltage input and 4 DIO channels
- Supplied with nylon feet
- Clear Perspex cover & base also available
- CE & RoHS compliant, BS9001:2000 manufacture


Description

Low cost, general purpose, USB connected & powered, 8 channel voltage input, 4 channel DIO and 4 channel relay card. Voltage input and relay channels are opto-isolated.

Available with the option of two types of relay, a 240VAC/10Amp power relay, or a 30VDC/1A high sensitivity (gold contact) signal relay. (PCB tracking is designed to handle 10 Amps).

Also available with two types of screw terminal connector, a fixed screw terminal block (see image above) or a two part male/female type (see image on page 3). The voltage input channels are also connected to two 14 way header connectors. Example programs are available in LabView, Visual C, Visual Basic, Agilent VEE and Delphi which demonstrate basic functionality of the card.

Specifications
USB Interface

USB 1 & 2 compatible (virtual COM port)

Digital I/O signals

I/O Low, 0V to 1.5VDC (Typ).

I/O High, 5V to 100V DC

(Max) per channel. Outputs, sink/source 25mA

Operating temp range

0-70°C

Power

5V DC @ 200mA (max), powered from the USB port (500mA USB power max).

Relays

See specs on page 2

Dimensions

Dimensions 100mm (D) 130mm (W) 25mm (H) (exc feet), Weight 135g.

Order codes
USB8VI4DIOPR

USB 8 chan VI, 4 DIO & 4 power relays (10A), fixed conns

USB8VI4DIOPR2

USB 8 chan VI, 4 DIO & 4 power relays (10A), M/F conns

USB8VI4DIOSR

USB 8 chan VI, 4 DIO & 4 signal relays (1A), fixed conns

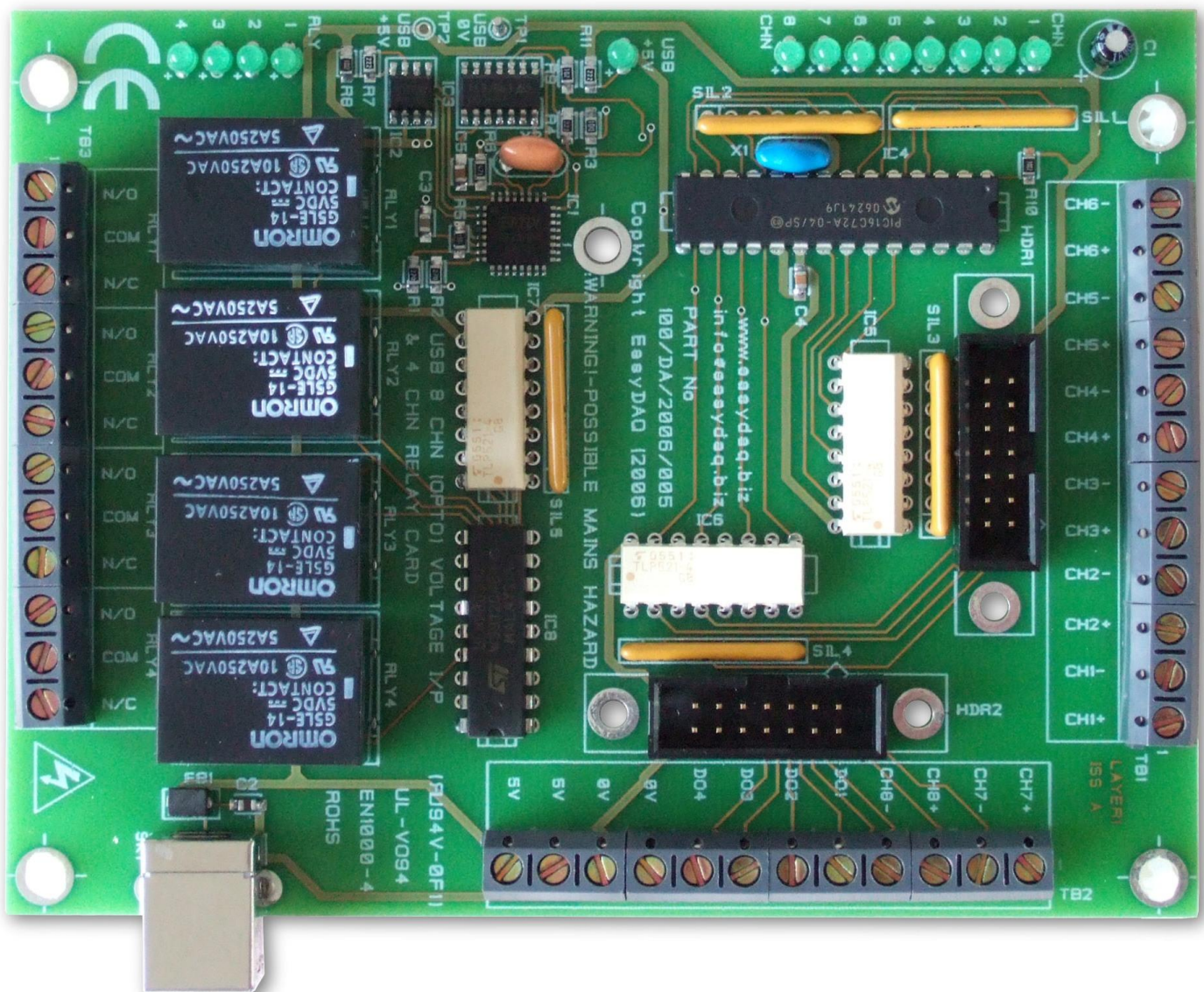
USB8VI4DIOSR2

USB 8 chan VI, 4 DIO & 4 signal relays (1A), M/F conns

Product Datasheet 25

Specifications: Relays

Parameter	Specification (Power relays)	Specification (Signal relays)
Rated voltage/current	5VDC/40mA	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, Form C	SPDT, Form C



Serial Port settings

Baud rate: 9600
 Parity: 0
 Data: 8 bits
 Stop bits: 1
 Handshaking: None

Auto detection & com port assignment

When you connect this card to a USB port of your computer for the first time, it will be auto-detected and ask you to install drivers (downloadable from the 'downloads' section of our website). After installation, the card will appear as a 'virtual' COM port and be automatically assigned a COM port number by your OS. Following installation, the COM port number can be manually re-assigned via the control panel if required. Following reboots or disconnects of the USB card, the same COM port number will be assigned.

Command format

The card is commanded via simple ASCII character (+ status byte) commands that address each port of the PIC device (Hex equiv shown in brackets). Can also be commanded via HyperTerminal – see below.

Port B (Channels 1-8) commands:

ASCII 'B' (42H), X Set direction of Port B, 1=Input, 0= output. (i.e. where X=10111111 (AFH) = sets bit 7 as an output, the rest as inputs).
 ASCII 'A' (41H), X Read Port B (Char X=don't care. Device sends 1 byte of returned data).
 ASCII 'C' (43H), X Write data X to Port B (i.e. X=0000001 (01H), sets channel 1 to active). Valid data bytes are latched by the card until a further valid data byte is written to it.

Port C (Channels 9-16) commands:

ASCII 'E' (45H), X Set direction of Port C, 1=Input, 0= output. (i.e. where X=10111111 (AFH) sets bit 7 as an output, the rest as inputs).
 ASCII 'D' (44H), X Read Port C (Char X=don't care. Device sends 1 byte of returned data).
 ASCII 'F' (46H), X Write data X to Port C (i.e. X=0000001 (01H), sets channel 1 to active). 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 Windows 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 (<http://www.easydaq.co.uk>). Example programs are currently available for LabView, Visual Basic, Visual C, Agilent VEE & Delphi.

Uses existing USB & serial port software examples

This card uses the same software drivers & command interface that is used in our existing range of USB/Serial port relay & DIO card products. Therefore, if you have already used these products on previous projects, you may be able to re-use some or all of your code (or use a USB card in place of a serial port card).

