

Product Datasheet 28

Features

- USB powered & controlled, 24 channel relay card
- Example code downloads available for: Python, Labview, VB, VC, C#, JAVA, Agilent VEE & Delphi. Uses simple ASCII/Hex text command strings
- OS compatibility: Windows 98SE, 2K, XP, Vista CE, 7, 10, Mac OSX and Linux
- Choice of either 240VAC/10 Amp power relays or 30VDC/1A, high sensitivity (gold contact, low contact resistance) signal relays
- USB24PRMx version PCB Tracking is designed to handle 240VAC @ 10 amps
- Relays are SPDT, Form C, changeover type, with N/O, COM and N/C contacts taken to two part screw terminal blocks allowing quick connect/disconnect of card
- USB power will support activation of up to 8 off 5 or 6V relays (Jumper link LK1 closed)
- DC external power can be connected via a 2 way screw terminal connector to operate > 8 relays (Jumper link LK1 open) or 12V and 24V relay versions
- Operate/release time 5mS Max
- LED channel & supply status indicators are located along one end of the card giving visual indication of activation status
- Stackable design with horizontal entry, 2 part (male/female) screw terminal blocks
- Supplied with nylon feet (will take self-tapping screws)
- Protective polycarbonate cover & base available & DIN rail mount option
- CE & RoHS compliant, BS9001:2000 manufacture
- Normally held in stock - free shipping (Worldwide)



Description

General purpose USB 24 channel relay card, available with a choice of either power (240VAC/10amp) or high sensitivity signal (gold contact, low contact resistance) relays.

Relay control/activation is via USB 'virtual com port' commands. All relay contacts are connected to two-part screw terminal blocks along each side of the card.

Specification

Control Interface

USB 1 or 2, Type B connector, hot pluggable.

Power supply

USB powered (up to 8 relays) 5V DC (@ 40mA /80mA per relay) required for >8 relays

Operating temp range

-20 to +80°C

The use of horizontal mounted screw terminal connectors and USB connector allow easy and rapid connect/disconnect from users target system.

External power connection is made via a 2 way screw terminal block in one corner of the card.

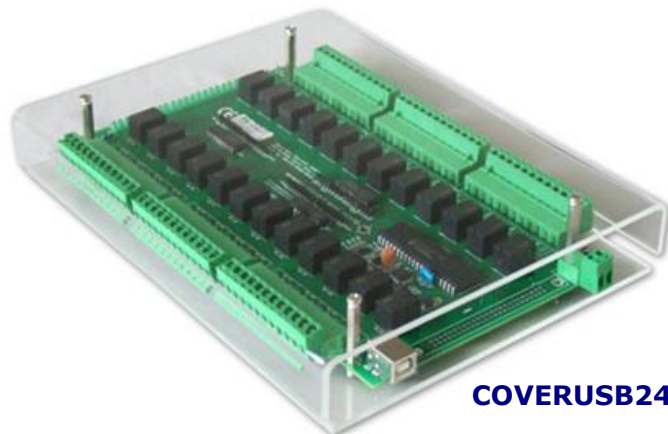
The card is stackable, via corner fixing holes, allowing low cost implementation of relay stack or matrix functions.

Relays

See page 2 for technical details of the relays used

Dimensions

Dimensions approx. 205mm (D) 126mm (W) 22mm (H) (exc. feet), Weight 360g (signal relays), 540g (power relays).

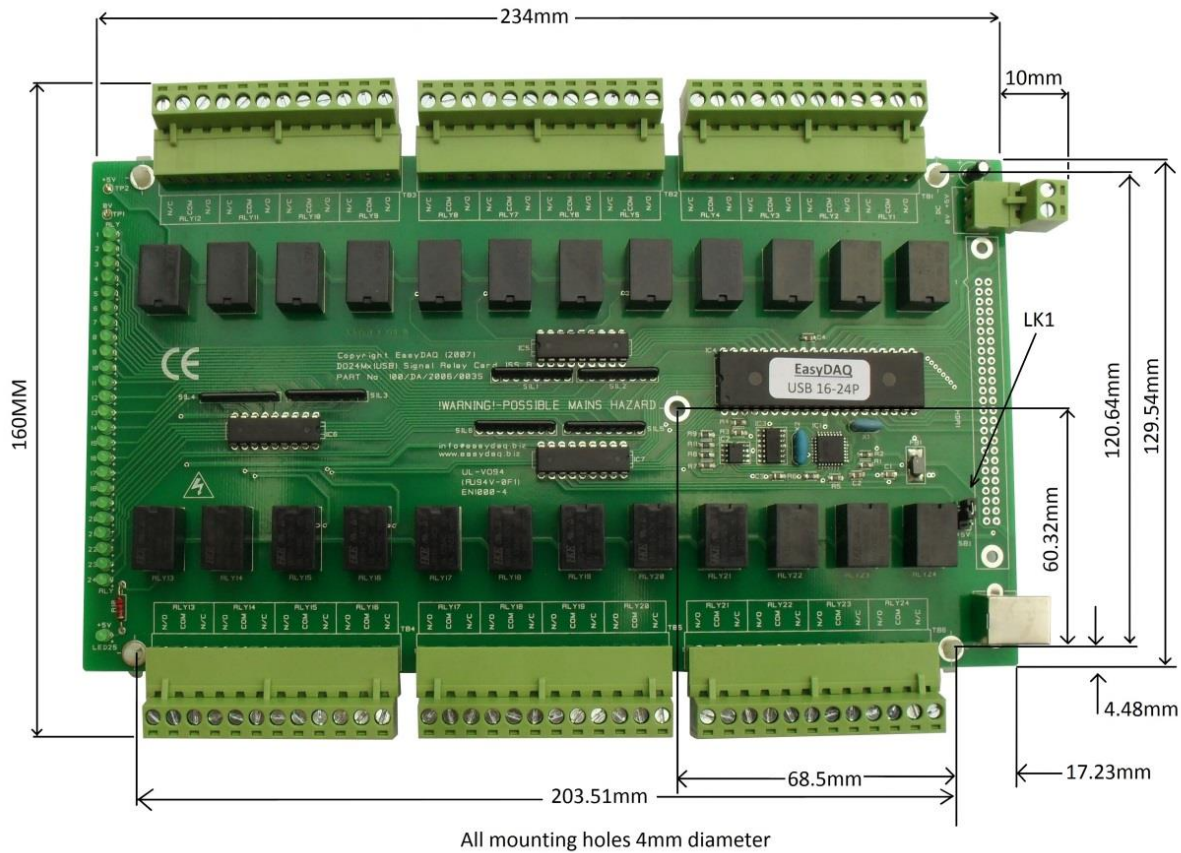


COVERUSB24Mx accessory

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<i>Specifications: Relays</i>					
Parameter	5V Power relays	6V Power relays	12V Power relays	24V Power relays	Signal relays
Rated voltage/current	5VDC/71mA each	6VDC/60mA each (50mA at 5V)	12VDC/44mA each	24VDC/22mA each	5VDC/42mA each
Must operate/release voltage	75%/10% of rated voltage				75%/10% of rated voltage
Contact ratings	10A/240VAC or 8A 30VDC				1A/120VAC or 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

Dimensional drawing (USB24SRMx shown)

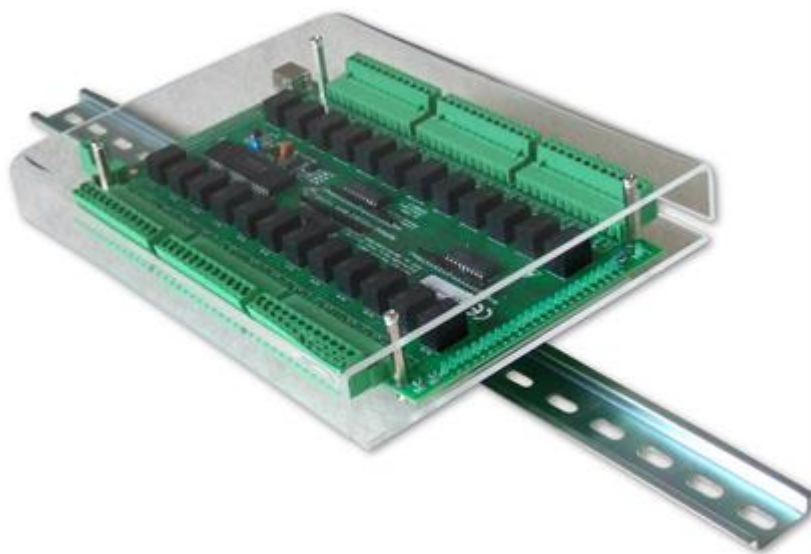
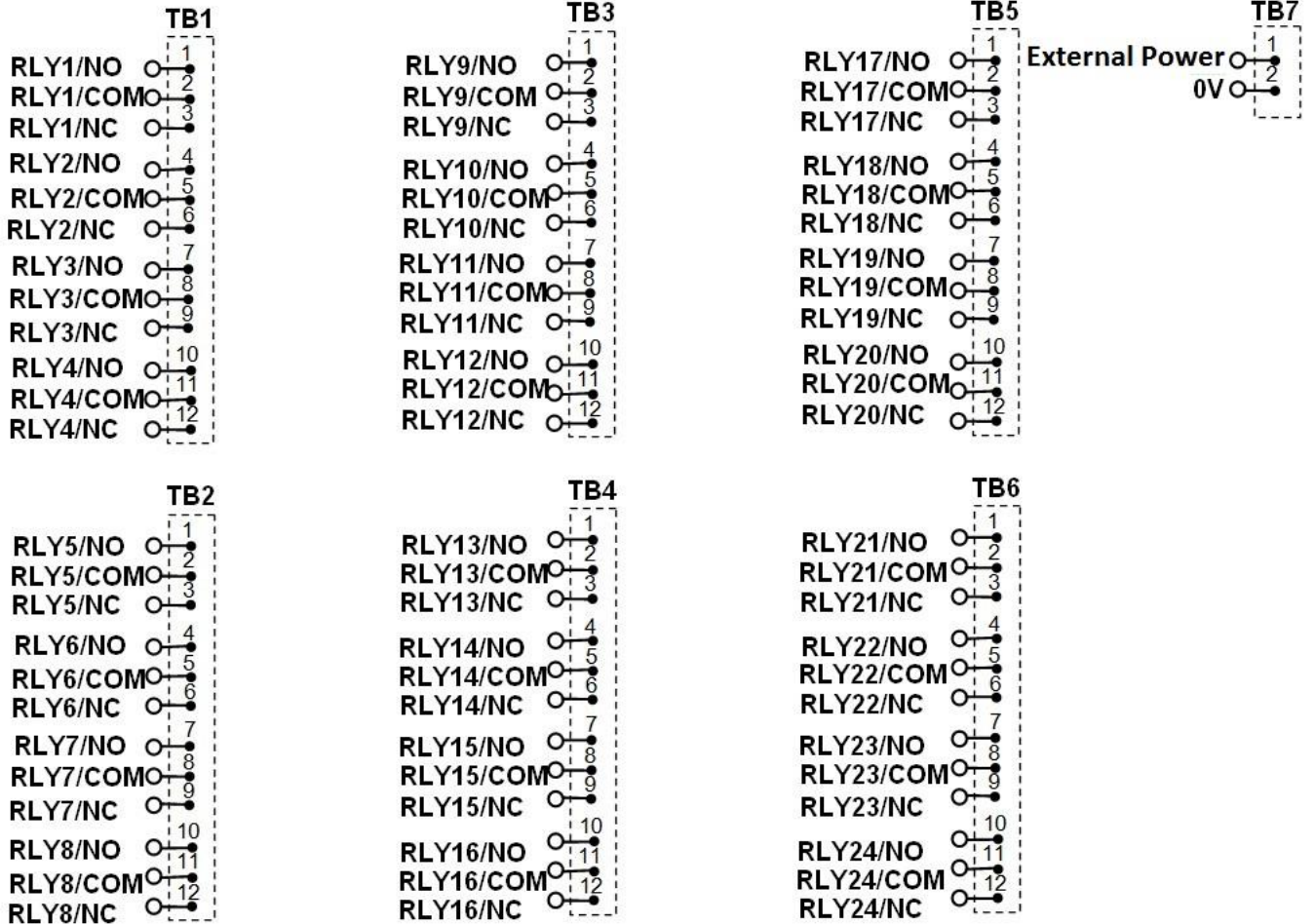


<i>Order codes</i>	
USB24PRMx	Our original USB 24 channel relay card, fitted with 6V relays (activated from 5V for lower power operation), 240VAC/10Amp, SPDT Power relays and two part (right angle) screw terminal blocks giving access to NO/COM/NC relay contacts for all channels.
USB24PRMx-5V	As USB24PRMx above, but fitted with 5V relays for normal operation, preferably using an external power supply and LK1 open.
USB24PRMx-12V	As USB24PRMx above, but fitted with 12V relays for normal operation, using an external power supply and LK1 open.
USB24PRMx-24V	As USB24PRMx above, but fitted with 24V relays for normal operation, using an external power supply and LK1 open.
USB24SRMx	As above, but fitted with 5V, 30VDC/1A, high sensitivity (gold contact) signal relays. Suitable for low voltage/current, or low contact resistance signal switching applications. Use a 5V external power supply and LK1 open if more than 8 relays are to be activated at one time.

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Connection details

External screw terminal connections to the cards are shown below:



COVERUSB24MxDIN option

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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 single ASCII characters (+ status byte). These are commands that address each port of the PIC device (Hex equiv shown in brackets). The card can also be commanded via HyperTerminal – see below.

Port B (Channels 1-8) commands:

ASCII 'B' (42H), X Initialises the card (sets the port & channel I/O directions). 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 'C' (43H), X Write data X to Port B (i.e. X=00000001 (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 Initialises the card (sets the port & channel I/O directions). Set direction of Port C
ASCII 'F' (46H), X Write data X to Port C (i.e. X=00000001 (01H), sets channel 9 to active).

Port D (Channels 17-24) commands:

ASCII 'H' (48H), X Initialises the card (sets the port & channel I/O directions). Set direction of Port D
ASCII 'K' (4AH), X Write data X to Port D (i.e. X=00000001 (01H), sets channel 17 to active).

Using a Terminal Emulator

In order to test operation, the card can be connected to a serial port and controlled from a terminal emulator program such as "PuTTY" or "Realterm". See our "[Data Sheet 50 \(Using Terminal Emulators to control and test EasyDAQ cards\)](#)". Ensure port configuration is set as shown above, type (ASCII) characters shown above to achieve port direction and read or write command/data.