USB8SR

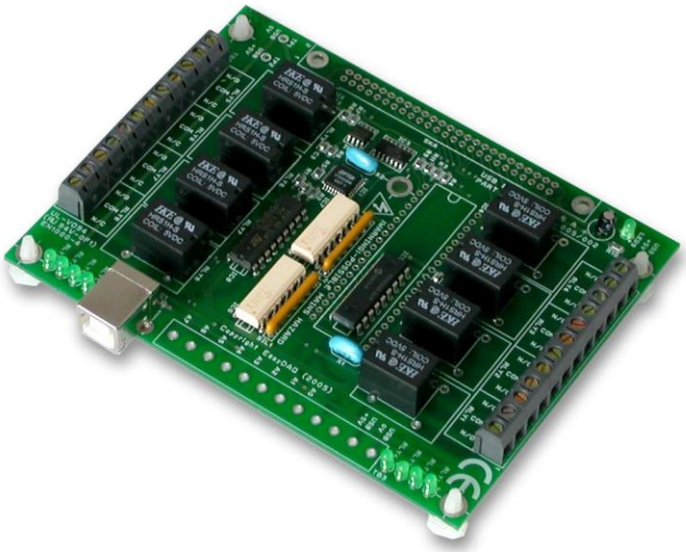
USB 8 channel signal relay cards

Low cost Data Acquisition & Control products

Product Datasheet 20

Features

- USB powered and controlled - USB1 or 2 compatible (Type B USB connector)
- Example code downloads available for: Labview, VB, VC, C#, JAVA, Agilent VEE & Delphi. Uses simple ASCII/Hex text command strings
- OS compatibility: Win98SE/ME/2K/XP/Vista, Mac OSX and Linux
- Can also be controlled with direct command input from terminal emulation programs (such as Windows HyperTerminal)
- Uses high sensitivity, low contact resistance relays
- Contact material AgAu, rated at 1A (24VDC/120V AC). Relay contact resistance 100mOhms Max
- Opto-isolated - USB isolation from relays to 5000V AC (rms)
- LED status indicators for USB connection/power and relay activation status
- Relays are SPDT, Form C, changeover type, with N/O, COM and N/C contacts taken to the screw terminal blocks along each side of the card
- Relay Operate 7mS /release time 7mS Max (inc software overhead)
- All relay contacts taken to screw terminal blocks. Option of either fixed (as shown in image) or 2 part (male/female) screw terminal blocks
- Available with either 4 or 8 relays fitted
- Supplied with nylon feet (will take self tapping screws)
- Corner mounting holes allow cards to be stacked if required
- Protective perspex cover & base available. Allows onboard LED indicators to be seen from wide viewing angle
- USB (Type B) cable available if required
- CE & RoHS compliant, BS9001:2000 manufacture



Description

General purpose USB controlled 8 channel signal relay cards. Hot pluggable and powered from the USB port, they are available with a range of software driver options, including direct control using simple ASCII characters sent from any terminal emulation program.

Relays are designed for (high sensitivity) signal switching applications and use gold plated contacts, suitable for handling low currents and voltages. Relay contacts are opto-isolated from the USB/control inputs providing high level of electrical protection between PC and target system. All relay contacts are connected to either fixed or two-part screw terminal blocks, allowing rapid disconnection/ replacement of the card. USB 0V & 5V power connections are also accessible, making them readily available for onward connection to target system wiring if needed.

Specifications

USB Interface
USB1/2 compatible interface. Hot pluggable and powered from the USB port. Type B USB connector.

Relays
1A/120VAC, 1A/24VDC contact rating. Contact resistance, 100 mΩ max.

Relay operate/release times: 7mS/7mS, (inc SW overhead). Contact material AgAu.

Operating temp range
0-70^{0}C

Dimensions
Dimensions approx 106mm (D) 129mm (W) 25mm (H) (exc feet), Weight 130g. (For USB8SR2S).

Order code

USB8SR
8 channel USB connected relay card with fixed six screw terminal block connectors for connection to all relay contacts.

USB8SR2
As above, but fitted with two part (male/female) screw terminal block connectors (as shown in image above).

Specifications: Relays

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, Form C	SPDT, Form C

Serial Port settings

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

Handshaking

None – output status reflects incoming data bytes.

Auto detection & com port assignment

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

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).

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++.

Uses existing serial port software examples

This card uses the same software drivers & command interface as that used in our range of serial port relay cards (SERDIO8/16/24 etc). Therefore, if you have already used the serial port cards you may be able to re-use your code or use a USB card in place of a serial port card.