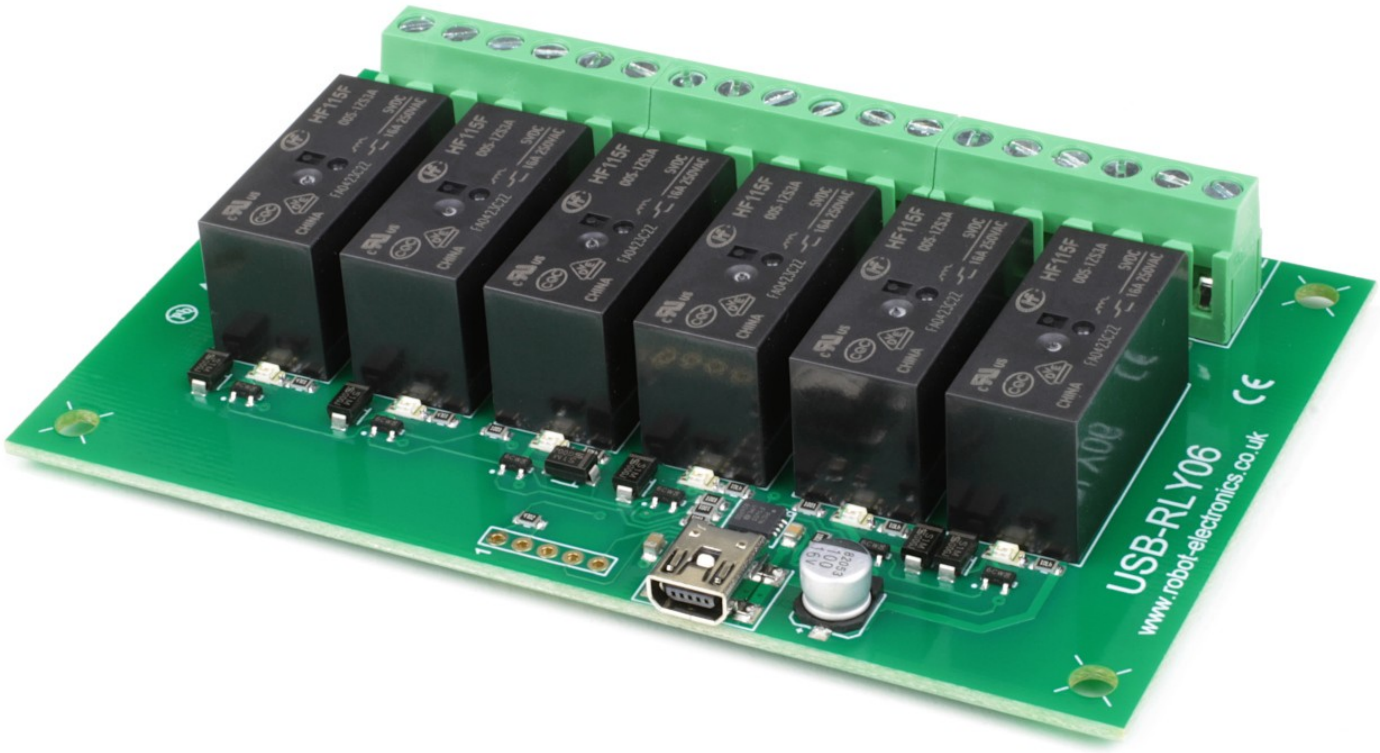
USB-RLY06 - 6 Relays at 16A

Technical Documentation



Overview

The USB-RLY06 provides six volt free contact relay outputs with a current rating of up to 16Amp each. Between the normally open and common contacts we have also integrated snubbers for inductive loads. Power for driving of the relays is conveniently sourced from the USB supply. The relays are SPCO (Single Pole Change Over) types. The normally open, normally closed and common pins are all available on the screw terminals.

Operating Temperature

-40C to +70C

LED indication

Red LED's are mounted immediately next to each relay to indicate whether it is in a powered state (LED on).

Relay power rating

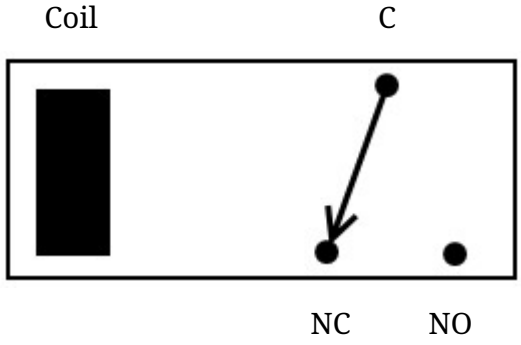
Load type	Typical applications	Rating
AC1	Non inductive or slightly inductive loads	16A @ 250V AC 3A @ 120V AC
AC15	Control of electromagnetic load (>72VA)	1.5A @ 240V AC
AC3	Control of motor	750W
DC1	Non inductive or slightly inductive loads	16A @ 24V DC
DC13	Control of electromagnetic loads	0.22A @ 120V DC 0.1A @ 250V DC

A full data sheet for the relays used on the USB-RLY06 is here: HF115F data sheet

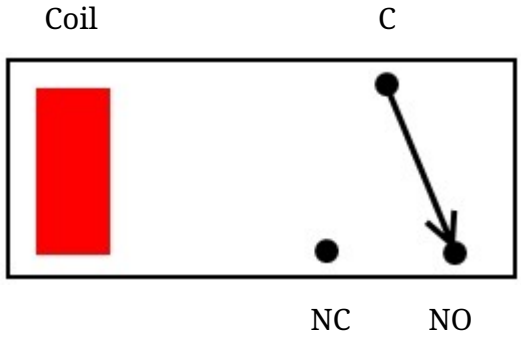
Power relays

Six volt free relays are provided for switching a common input between a normally closed output and a normally open output. The relay coil is powered by the 5vdc USB supply on user command.

Relay in passive state



Relay in powered state



Communication

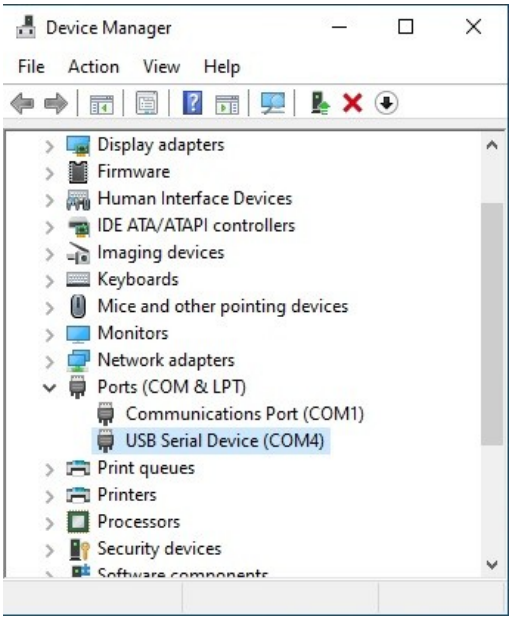
Plugging the module to Windows 10, Linux or MAC OS X will result in the module automatically presenting itself as a virtual com port. The commands from the table further down can then be easily sent as if you were talking to a serial port. Please note there is no need to set the baud rate as it has no effect.

Which COM/ Serial port?

After plugging in the USB-RLY06 to a spare USB port, you will want to know which port it has been assigned to. This will vary from system to system.

Windows:

Right click on the Start icon in your task bar and select "Device Manager". Now scroll down and open the "Ports (COM & LPT)" tab. You should see the USB serial port listed - COM4 in the example below.



Linux:

To see a list of the available devices open a terminal window and run the following command:

ls /dev/serial/by-id/

Mac OS:

To see a list of the available devices open a terminal window and run the following command:

*ls /dev/cu.**

Commands

The USB-RLY06 operates with an easy to use command set as described in the table below. Most commands are only a single byte and if applicable the USB-RLY04 will automatically send its response. The only exception to this being the "Set relay states" command which requires an additional desired states byte to be sent immediately after the command byte.

Command		Action
dec	hex	
56	38	Get serial number – returns 8 byte serial number of the module
90	5A	Get software version - returns 2 bytes. Module ID (which is 46), Firmware version.
91	5B	Get relay states – returns 1 byte, bit high meaning the corresponding relay is in position 1
92	5C	Set relay states – follow with 1 byte to set relay states, All on = 255 (0xFF), All off = 0 (0x00)
100	64	All relays to position 1
101	65	Relay 1 to position 1
102	66	Relay 2 to position 1
103	67	Relay 3 to position 1
104	68	Relay 4 to position 1
105	69	Relay 5 to position 1
106	6A	Relay 6 to position 1
110	6E	All relays to position 0
111	6F	Relay 1 to position 0
112	70	Relay 2 to position 0
113	71	Relay 3 to position 0
114	72	Relay 4 to position 0
115	73	Relay 5 to position 0
116	74	Relay 6 to position 0

Test program and example source code

To get the USB-RLY06 up and running in the minimum amount of time we have put together an example program to demonstrate the functionality of the module. The program is distributed as a jar file and source code.

You can download this, and more examples, from the product page.

Board dimensions