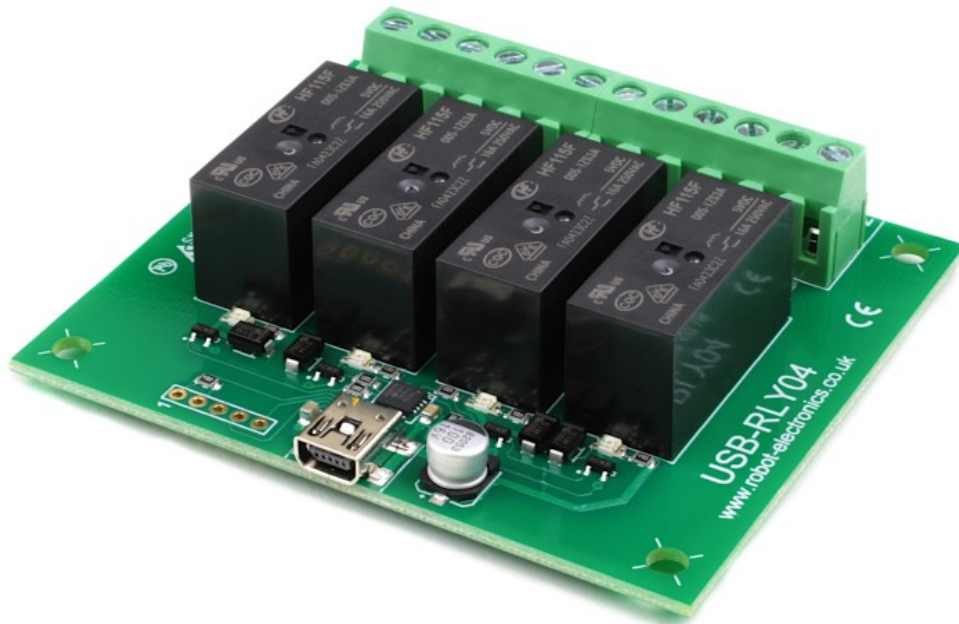


# USB-RLY04 - 4 relay outputs at 16A

## Technical Documentation



### Overview

The USB-RLY04 provides four 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.

### LED indication

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

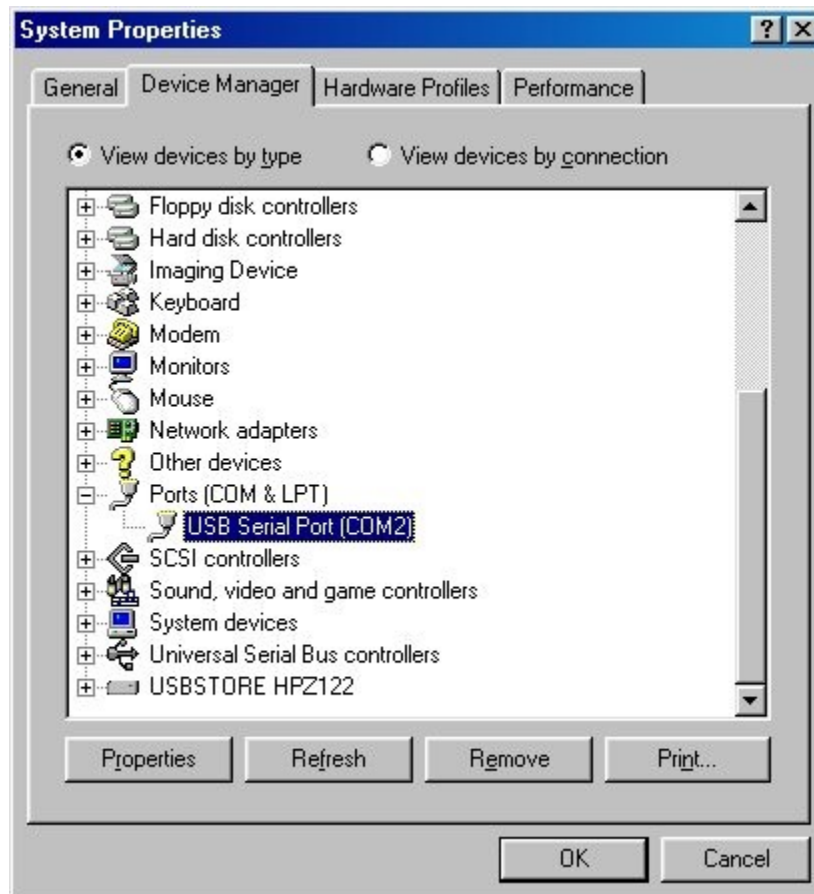
### Relay power rating

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 datasheet for the relays used is here: [HF115F datasheet](#)

## COM port

After plugging in the module to a spare USB port, you will want to know which COM port it has been assigned to. This will vary from system to system depending on how many COM ports you currently have installed. To find out where it is, right click on your "My Computer" desktop icon and select the "Device Manager" tab. Now scroll down and open the "Ports (COM & LPT)" tab. You should see the USB serial port listed - COM2 in the example below. If you want to change the COM port number - just right click on it, select properties, select advanced and select the COM port number from the available list. The COM port may be left at the default baud rate etc, because they are not actually used - there is a direct USB connection into the processor.

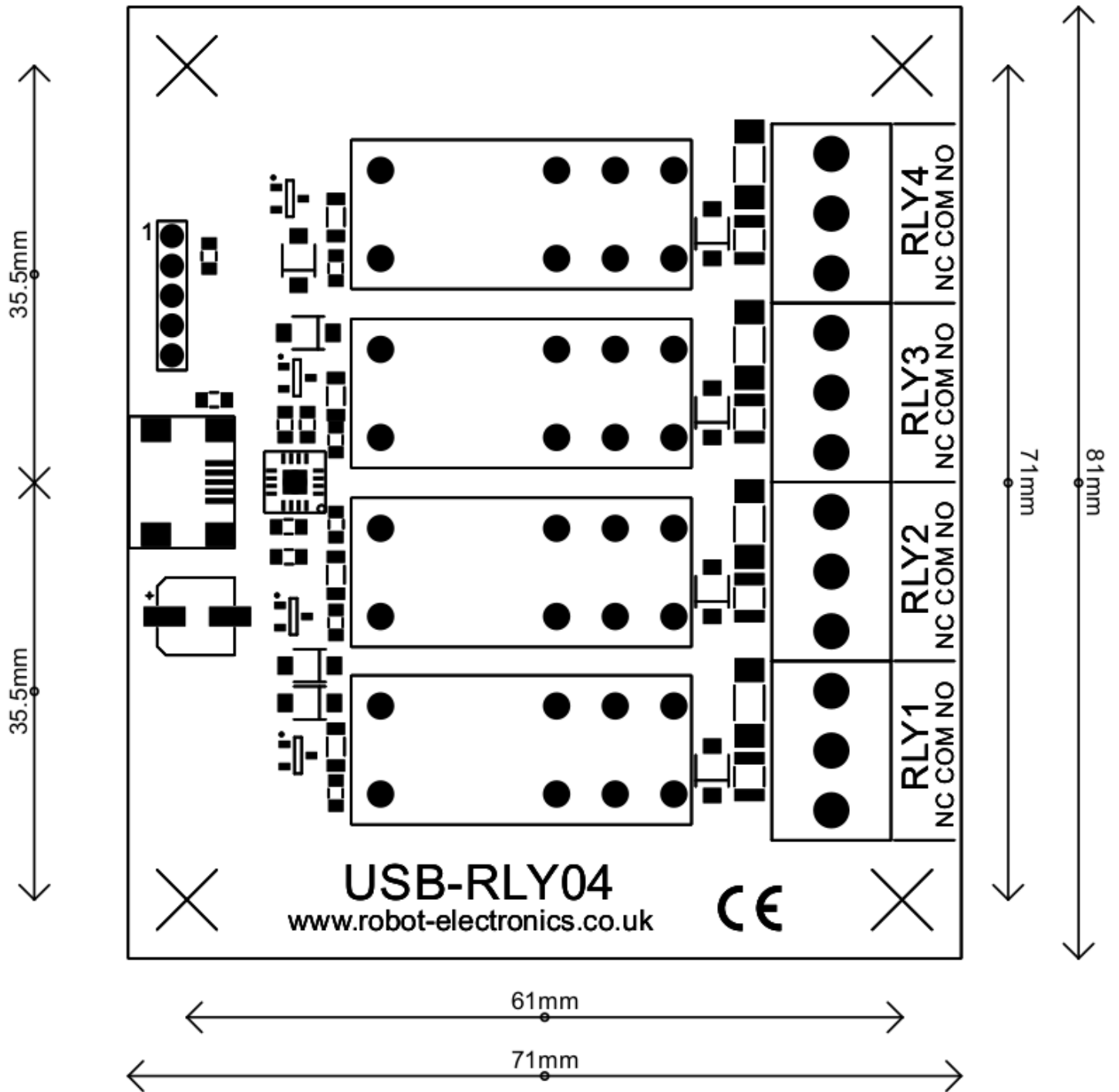


## Commands

The USB-RLY04 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 module 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 bytes of ASCII that form the unique serial number for module, I.E "00001543"
90	5A	Get software version - returns 2 bytes, the first being the Module ID which is 45, followed by the software version
91	5B	Get relay states - sends a single byte back to the controller, bit high meaning the corresponding relay is powered
92	5C	Set relay states - the next single byte will set all relays states, All on = 4 lowest bits set in byte (xxxx1111) All off = 0
100	64	All relays on
101	65	Turn relay 1 on
102	66	Turn relay 2 on
103	67	Turn relay 3 on
104	68	Turn relay 4 on
110	6E	All relays off
111	6F	Turn relay 1 off
112	70	Turn relay 2 off
113	71	Turn relay 3 off
114	72	Turn relay 4 off

# Board dimensions



## Test program

To get the USB-RLY04 up and running in the minimum time we have put together a USB-RLY04 Test program to demonstrate the functionality of the module.

