# USB-RLY02 / USB-RLY04 / USB-RLY06
Technical Documentation

כרטיס ממסרים בחיבור USB עם 2 / 4 / 6 יציאות



## Overview
The USB-RLY provides 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).
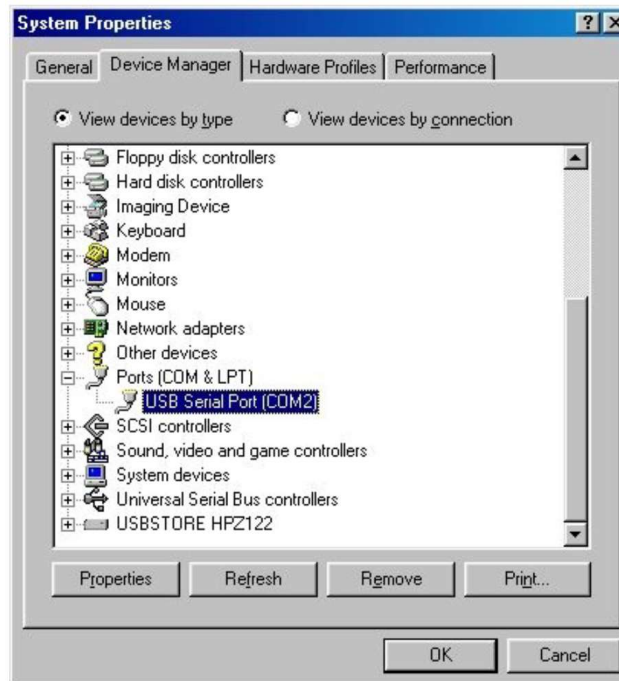
## Relay power rating

| load type | Typical applications | Rating |
|-----------|----------------------|--------|
| AC1 | Non inductive or slightly inductive loads | 16A @ 250V AC<br>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<br>0.1A @ 250V DC |

**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-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 module will automatically send its response. The only exception to this being the "Set relay states" command which requires and 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 46, 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 = 6 lowest bits set in byte (xx111111) 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 |
| 105 | 69 | Turn relay 5 on |
| 106 | 6A | Turn relay 6 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 |
| 115 | 73 | Turn relay 5 off |
| 116 | 74 | Turn relay 6 off |

## Test program

To get the USB-RLY up and running in the minimum time we have put together a USB-RLY Test program to demonstrate the functionality of the module, for getting the program please send email to support@idp.co.il