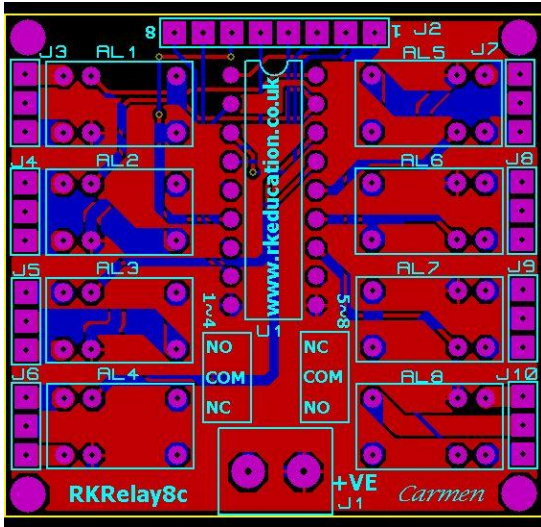
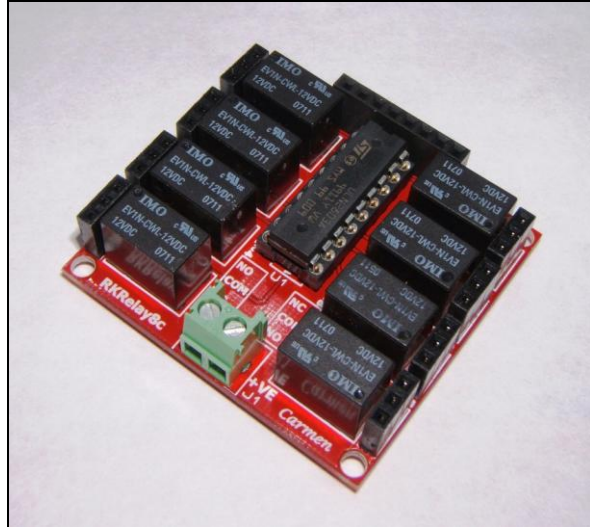


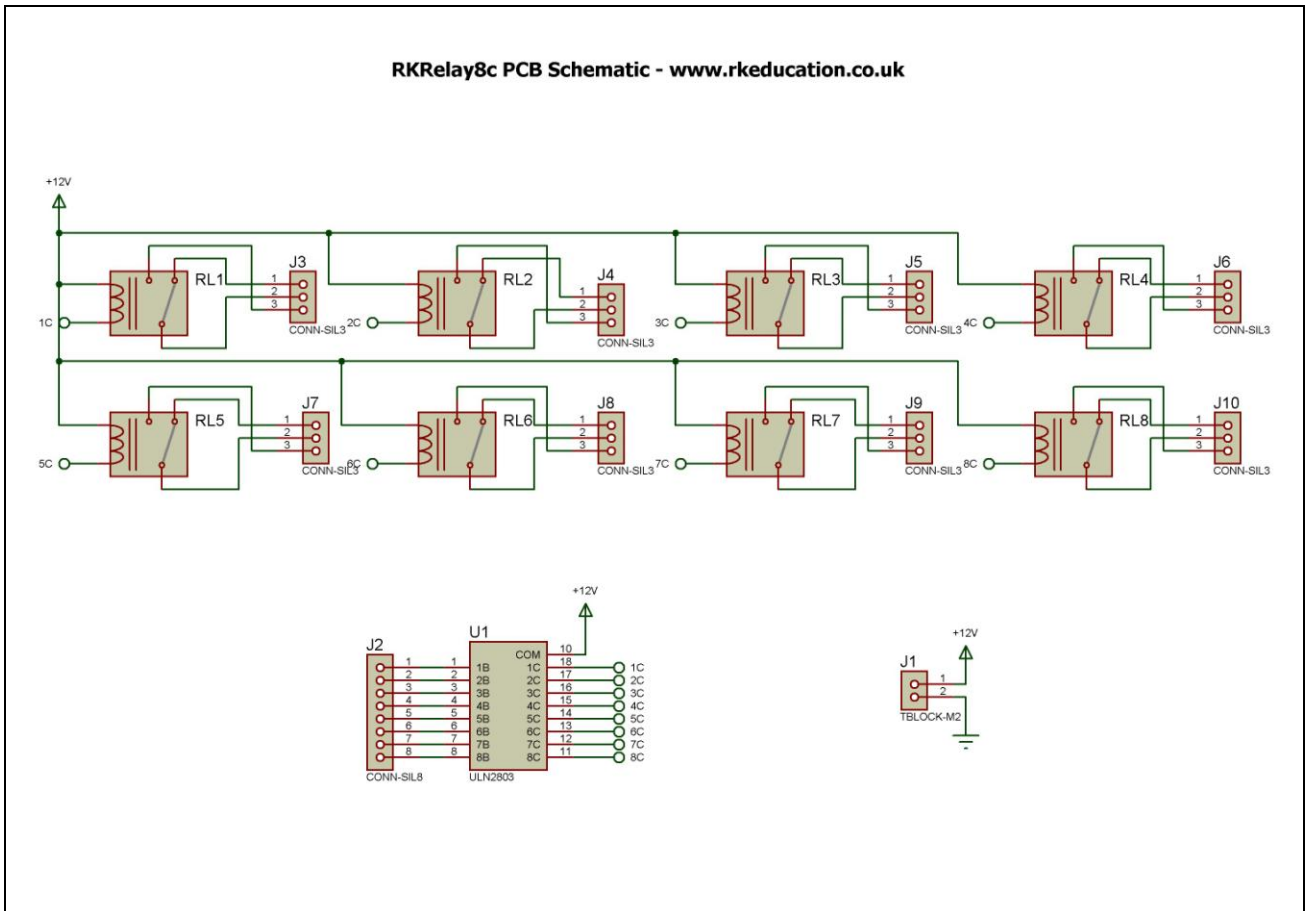
RKRelay8c Component List and Instructions



PCB layout



Constructed PCB



Schematic

Description

The RKRelay8c compact relay project PCB has been designed to be interfaced with controllers such as Atmel, Arduino, PIC, PICAXE, Raspberry PI etc

- The relays are controlled by external inputs to a ULN2803
- 8 outputs from the ULN2803 are connected to ultra miniature signal relays
- The inputs to the ULN2803 are accessed via an 8 way PCB header - 0.1" pitch
- Power is via a 2 way terminal block
- The PCB uses 3 way PCB headers to interface to the relay contacts - 0.1" pitch
- The PCB has a clear silkscreen layer
- The PCB has 4 mounting holes for sturdiness

Component List

J1 – 2 way 5mm pitch terminal block

J2 – 8 way 0.1"/2.54mm pitch PCB header socket

J3 ~ J10 – 3 way 0.1"/2.54mm pitch PCB header socket

RL1 ~ RL8 – SPCO sub miniature PCB signal relays

U1 – ULN2803

When constructing always start with the components that have the lowest profile and work higher.

Instructions

For instructions on using your chosen microcontroller, e.g. Arduino, Atmel, PIC, PICAXE, Raspberry PI please see the appropriate website.

Please only attempt to use this product if you are qualified to do so, if in doubt please seek professional advice.

Connecting Power

The power is connected to the terminal block marked J1 +VE, the 0V input, usually black is put in the left hand side terminal and the +VE, usually red, is put in the right hand side terminal, a regulated 12VDC 1Amp power supply or 12VDC battery should be used.

Using the relays

The relays are energised by powering the ULN2803 inputs 1 ~ 8, this is done by sending a high signal to inputs 1 ~8 to J2. When a relay is energised a click can be heard and when it returns to its non energised state a further click can be heard. There is a silkscreen diagram on the PCB that shows how the contacts are connected to the headers next to the relays.

Each relay has 3 connections that are located on the 3 way PCB header, they are called COM – common, NC – normally connected and NO – normally open. When the relay is not energised there is a circuit between COM and NC and when the relay is energised there is a circuit between COM and NO. To power a DC motor connect one lead to COM and one to NC, the motor will be powered until the relay is energised and the circuit changes to between COM and NO, if the motor leads were between COM and NO then this would be reversed.

This PCB is perfect for interfacing to controllers such as Arduino, Atmel, PIC, PICAXE etc and to the Raspberry PI. The forums for these controllers are an excellent source of help and guidance.

Please visit our website

www.rkeducation.co.uk

If you have any comments or queries please email us at

technical@rkeducation.co.uk

RKRelay8c PCB Schematic - www.rkeducation.co.uk

