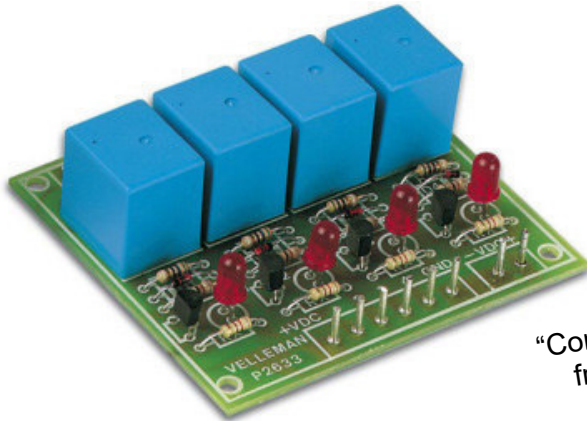


## RELAY CARD



# K2633

“Control up to 4 high-power circuits from a low-power drive circuit.”

The connection of a few relays to the outputs of an electronic circuit might be theoretically very simple, but practically it may lead to a very complicated matter with all possible results. This kit is an attractive and compact alternativ, fast to construct and to mount. It can be used with open collector circuits.

### **Features:**

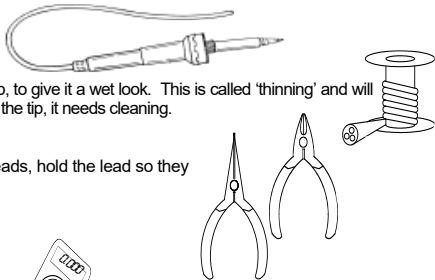
- Four relay outputs, single pole invertors
- Max. load : 240V AC / 3A resistive
- 9V DC / 300 mA power supply
- Four control-LED's are provided
- Is controlled by an open collector output (9V/15 mA)
- Dimensions : 76 x 69 x 25 mm.

## 1. Assembly (Skipping this can lead to troubles !)

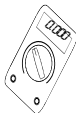
Ok, so we have your attention. These hints will help you to make this project successful. Read them carefully.

### 1.1 Make sure you have the right tools:

- A good quality soldering iron (25-40W) with a small tip.
- Wipe it often on a wet sponge or cloth, to keep it clean; then apply solder to the tip, to give it a wet look. This is called 'thinning' and will protect the tip, and enables you to make good connections. When solder rolls off the tip, it needs cleaning.
- Thin rosin-core solder. Do not use any flux or grease.
- A diagonal cutter to trim excess wires. To avoid injury when cutting excess leads, hold the lead so they cannot fly towards the eyes.
- Needle nose pliers, for bending leads, or to hold components in place.
- Small blade and Phillips screwdrivers. A basic range is fine.



**For some projects, a basic multi-meter is required, or might be handy**

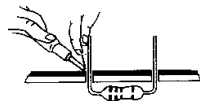


### 1.2 Assembly Hints :

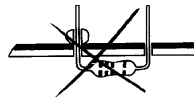
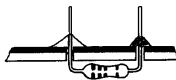
- ⇒ Make sure the skill level matches your experience, to avoid disappointments.
  - ⇒ Follow the instructions carefully. Read and understand the entire step before you perform each operation.
  - ⇒ Perform the assembly in the correct order as stated in this manual
  - ⇒ Position all parts on the PCB (Printed Circuit Board) as shown on the drawings.
  - ⇒ Values on the circuit diagram are subject to changes.
  - ⇒ Values in this assembly guide are correct\*
  - ⇒ Use the check-boxes to mark your progress.
  - ⇒ Please read the included information on safety and customer service
- \* Typographical inaccuracies excluded. Always look for possible last minute manual updates, indicated as 'NOTE' on a separate leaflet.

### 1.3 Soldering Hints :

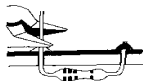
1- Mount the component against the PCB surface and carefully solder the leads



2- Make sure the solder joints are cone-shaped and shiny

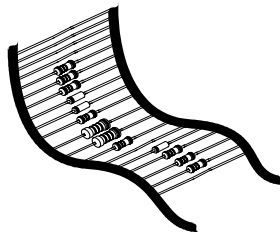


3- Trim excess leads as close as possible to the solder joint



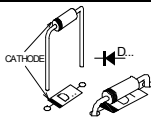
**REMOVE THEM FROM THE TAPE ONE AT A TIME !**

**AXIAL COMPONENTS ARE TAPED IN THE CORRECT MOUNTING SEQUENCE !**

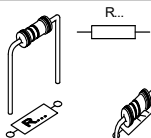


### 1. Diodes. Watch the polarity !

- D1 : 1N4148
- D2 : 1N4148
- D3 : 1N4148
- D4 : 1N4148



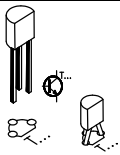
### 2. Resistors



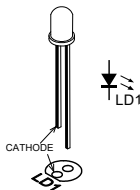
- R1 : 56 (5 - 6 - 0 - B - 9)
- R2 : 56 (5 - 6 - 0 - B - 9)
- R3 : 56 (5 - 6 - 0 - B - 9)
- R4 : 56 (5 - 6 - 0 - B - 9)
  
- R5 : 820 (8 - 2 - 1 - B)
- R6 : 820 (8 - 2 - 1 - B)
- R7 : 820 (8 - 2 - 1 - B)
- R8 : 820 (8 - 2 - 1 - B)
- RX : 820 (8 - 2 - 1 - B) (4x)

### 3. Transistors.

- T1 : BC557B
- T2 : BC557B
- T3 : BC557B
- T4 : BC557B



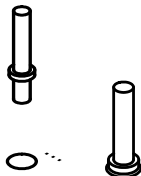
### 4. LEDs. Watch the polarity!



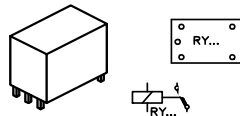
- LD1 : 5mm RED
- LD2 : 5mm RED
- LD3 : 5mm RED
- LD4 : 5mm RED

### 5. PCB tabs.

- NC (4x)
- NO (4x)
- C (4x)
- + VDC (2x)
- VDC
- 1
- 2
- 3
- 4
- GND



### 6. Relays



- RY1
- RY2
- RY3
- RY4

## 7. Connection

Connect the power voltage of the relay to the 9V DC points.

☞ This voltage needs not to be stabilised.

The connection of the loads to the relays is very simple : at the outputs the name of the contact is given.

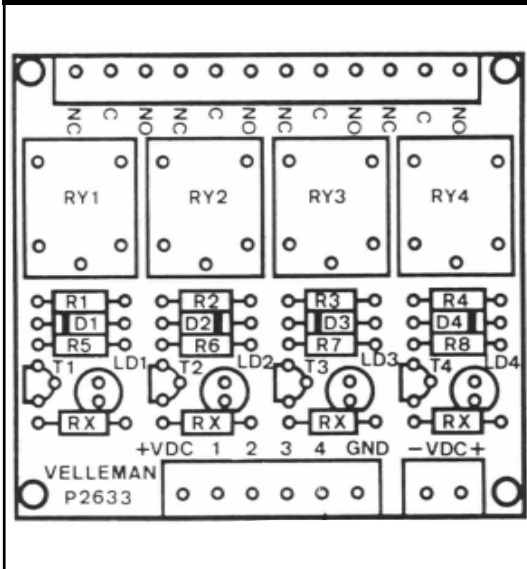
- C stands for the common contact.
- NC for the contact of the inverter that is closed in rest.
- NO for the normal open contact.

In most cases you will only use C and NO.

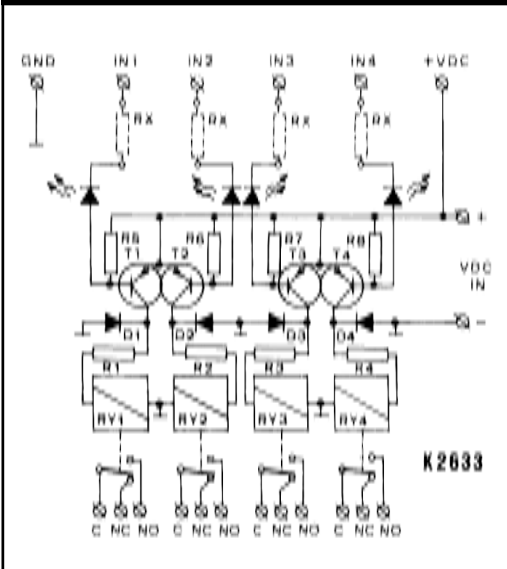
☞ In order to avoid disturbances and bum-in of the contacts when switching inductive loads (motors, heavy-duty-relays, ...) we recommend to install a VDR over the contacts.

When this should not be an adequate cure against disturbances in the control circuit, you have to place the relay print nearby the load itself.

### 8. PCB layout.



### 9. Diagram





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Modifications and typographical errors reserved © Velleman nv.  
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