

RGB Controller



K8088

Control incandescent bulbs, LEDs,
common anode led strips, etc ...

Specifications

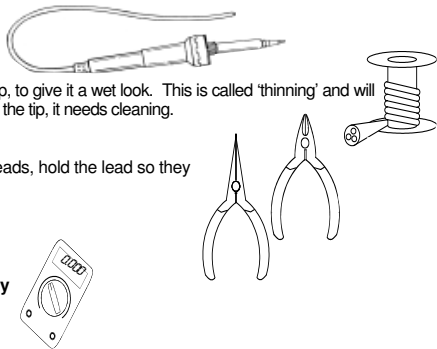
- 256 intensity levels/ch.
- voltage output : same as input voltage
- current limit possible (on-board resistor needed)
- LED PWM freq. : 82Hz
- power supply : 10 - 15Vdc / 9A max.
- dimensions : approx 80x70x23mm

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 raisin-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.

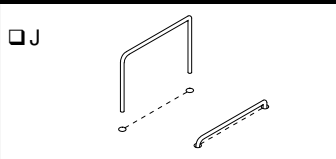


For some projects, a basic multi-meter is required, or might be handy

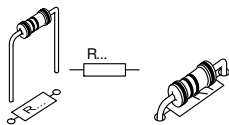
1.2 Assembly Hints :

- ⇒ 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. Jumper wire



2. Resistors

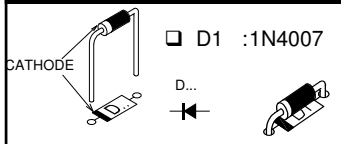


- R1 : 330 (3 - 3 - 1 - B)
- R2 : 330 (3 - 3 - 1 - B)
- R3 : 330 (3 - 3 - 1 - B)

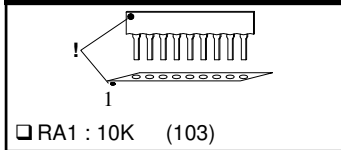
R4,R5 & R6 : see page 9 &10

- R7 : 180 (1 - 8 - 1 - B)
- R8 : 390 (3 - 9 - 1 - B)
- R9 : 1K (1 - 0 - 2 - B)
- R10 : 47K (4 - 7 - 3 - B)

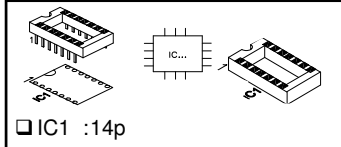
3. Diode. Watch the polarity!



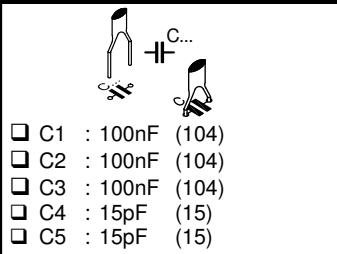
4. Resistor array



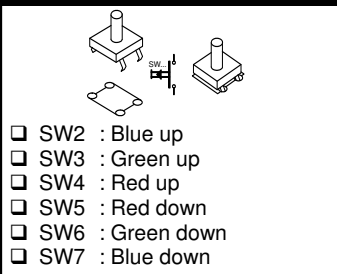
5. IC socket. Watch the position of the notch!



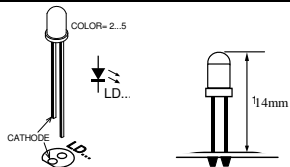
6. Capacitors.



7. Push buttons

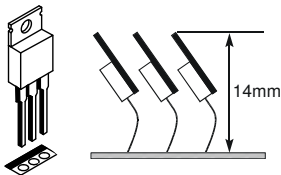


12. LEDs. Watch the polarity!



- LD1 : 3mm Red "R"
- LD2 : 3mm Green "G"
- LD3 : 3mm Blue "B"

13. Transistors

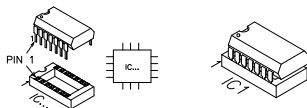


- TR1 : BUK9535-55
- TR2 : BUK9535-55
- TR3 : BUK9535-55

IMPORTANT

Apply an extra layer of solder on all copper PCB tracks.

14. IC



- IC1 : VK8088
(programmed PIC16F630-I/P)

Connection

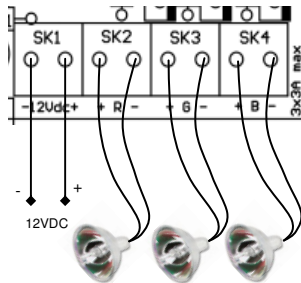
Incandescent lightbulb or halogen lightbulb:

connect the lightbulb to the output R, G or B.

Place a wire jumper for R4, R5 and R6.



☞ Polarity is not important. 3A /channel max (36W@12V).



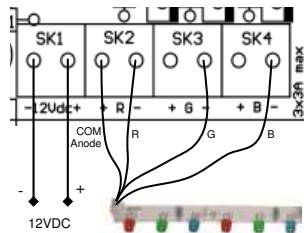
LED-strip with common anode (+) :

Connect the common anode to the (+) of the 12VDC power supply.
Connect the cathode (-) of each colour to the (-) of R,G or B on the K8088.

Place a wire jumper for R4, R5 and R6.



☞ Max. current consumption is 3A/channel.



Use

RGB-mode (mode switch into position 'RGB')

This mode allows you to compose a desired colour by adjusting the level of each channel.

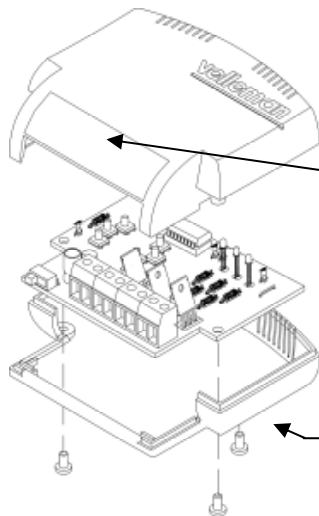
- 8) RED-level down
- 9) RED-level up
- 10) GREEN-level down
- 11) GREEN-level up
- 12) BLUE-level down
- 13) BLUE-level up

Memory: Once you have composed a colour, you can store it in memory by flipping the mode switch to 'eff'. Next time, when you turn on the controller with the slide switch set to 'RGB', it will revert to the colour you've composed.

Mounting order overview

Mount the PCB onto the lower part of the housing, see figure.

Place the front and rear sticker on the housing.



| RGB controller | | Velleman | |
|----------------|--------------|------------|------------|
| Power | | Outputs | |
| Off | On - 12VDC + | 3A/ch max. | com. anode |
| | + R - | + G - | + B - |

- Indoor use only !
- Disconnect power before opening
- Maximum ambient temp. : 35°C

See manual for safety and operating instructions

Designed in Europe

PCB

