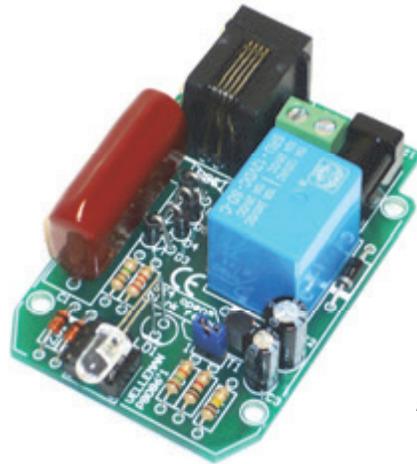


Total solder points: 61  
Difficulty level: *beginner* 1 □ 2  3 □ 4 □ 5 □ *advanced*



## TELEPHONE RING DETECTOR WITH RELAY OUTPUT



# K8086

Simply connect in parallel with phone line.  
Accepts standard adaptor & telephone plug.

## Features & Specifications

velleman®

### Features:

- simply connect in parallel with phone line
- powerful led flashes when phone rings
- the unit will feature a relay output if connected to a 12VDC power supply
- relay output: continuous or on/off to the rhythm of ringing of the telephone
- complete with enclosure
- great for noisy environments, for the hearing impaired, as additional ringer, to replace existing ringer, ...
- accepts standard adaptor & telephone plug

### Specifications:

- 10.000 mcd led !
- connects to PSTN line
- RJ11 connector
- supply: 12VDC/100mA adapter (Ex. [PS1203](#))
- output Contact (NO): 1A max.
- dimensions: 80x55x35mm / 3,15 x 2,16 x 1,37"

### Includes:

- attractive enclosure
- adhesive strips for easy fixing

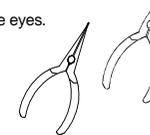
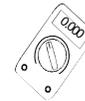
**1. Assembly (Skipping this can lead to troubles !)**

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 'tinning' 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, the 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

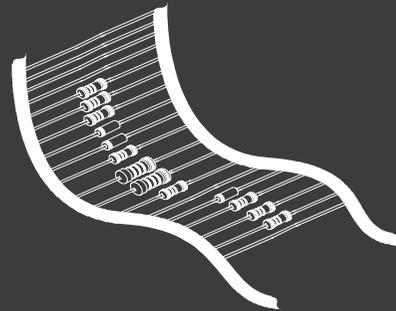
\* Typographical inaccuracies excluded. Always look for possible last minute manual updates, indicated as 'NOTE' on a separate leaflet.

**1.3 Soldering Hints :**

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

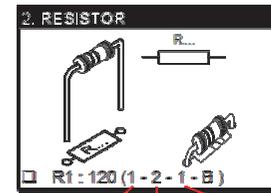
2- Make sure the solder joints are cone-shaped and shiny 

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



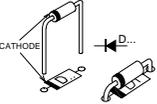
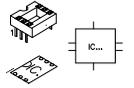
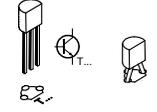
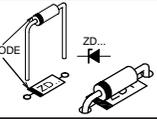
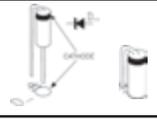
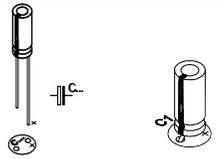
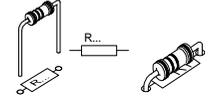
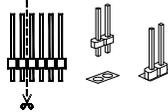
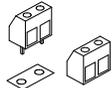
REMOVE THEM FROM THE TAPE ONE AT A TIME !

Included in this kit



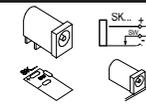
COLOUR	COLOUR NAME	1ST DIGIT STRIPE	2ND DIGIT STRIPE	3RD DIGIT STRIPE	MULTIPLIER STRIPE	TOLERANCE (%)
Black	0	0	0	0	x1	1%
Brown	1	1	1	1	x10	
Red	2	2	2	2	x100	
Orange	3	3	3	3	x1.000	
Yellow	4	4	4	4	x10.000	
Green	5	5	5	5	x100.000	
Blue	6	6	6	6	x1.000.000	

**DO NOT BLINDLY FOLLOW THE ORDER OF THE COMPONENTS ONTO THE TAPE.  
ALWAYS CHECK THEIR VALUE ON THE PARTS LIST!**

<p><b>1. Diodes. Watch the polarity!</b></p> <p> <input type="checkbox"/> D1 : 1N4148  <input type="checkbox"/> D2 : 1N4007         </p> 	<p><b>4. IC socket, Watch the position of the notch!</b></p> <p><input type="checkbox"/> IC1 : 6P</p> 	<p><b>7. Transistor</b></p> <p><input type="checkbox"/> T1 : BC557B</p> 
<p><b>2. Zener diodes. Watch the polarity!</b></p> <p> <input type="checkbox"/> ZD1 : 20V0  <input type="checkbox"/> ZD2 : 20V0         </p> 	<p><b>5. Vertical diodes. Watch the polarity!</b></p> <p> <input type="checkbox"/> D3 : 1N4007  <input type="checkbox"/> D4 : 1N4007  <input type="checkbox"/> D5 : 1N4007  <input type="checkbox"/> D6 : 1N4007         </p> 	<p><b>8. Electrolytic Capacitors. Watch the polarity !</b></p>  <p> <input type="checkbox"/> C2 : 100µF / 25V  <input type="checkbox"/> C3 : 47µF / 25V         </p>
<p><b>3. Resistors</b></p>  <p> <input type="checkbox"/> R1 : 1M (1-0-5-B)  <input type="checkbox"/> R2 : 2K2 (2-2-2-B)  <input type="checkbox"/> R3 : 15K (1-5-3-B)  <input type="checkbox"/> R4 : 100K (1-0-4-B)  <input type="checkbox"/> R5 : 1K (1-0-2-B)         </p>	<p><b>6. Pinheader + shunt</b></p> <p><input type="checkbox"/> SK4 : 2p</p>  <p>             open = blink relay              closed = continuous relay         </p>	<p><b>9. Terminal blocks</b></p> <p><input type="checkbox"/> SK3 : 2p</p> 

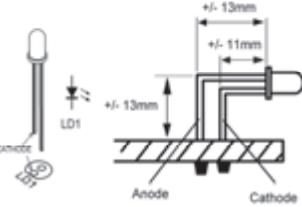
**10. DC-jack**

☐ SK2 : 12VDC



**11. LED. Watch the polarity!**

☐ LD1 : 5mm (super red)



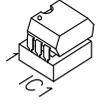
**12. Modular Jack**

☐ SK1 : 4p (type RJ11)

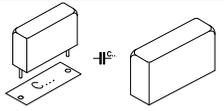


**15. IC, watch the position of the notch!**

☐ IC1 : 4N27

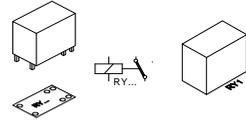


**13. Capacitor**



☐ C1 : 1µF / 275VAC

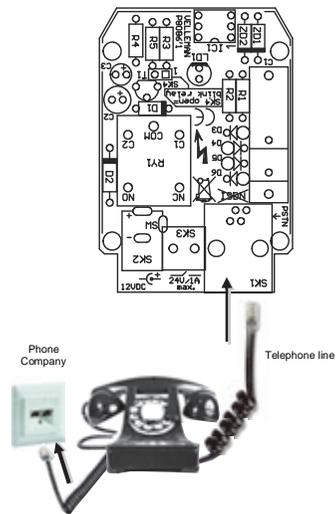
**14. Relay**



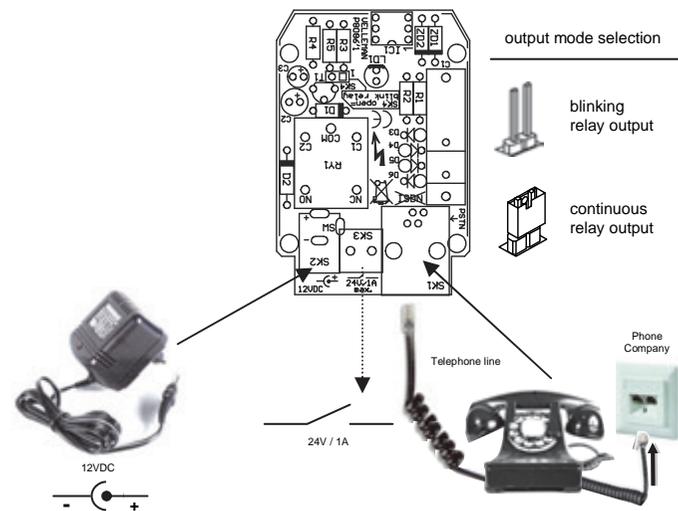
☐ RY1 : VR15M121C

16. Connection examples

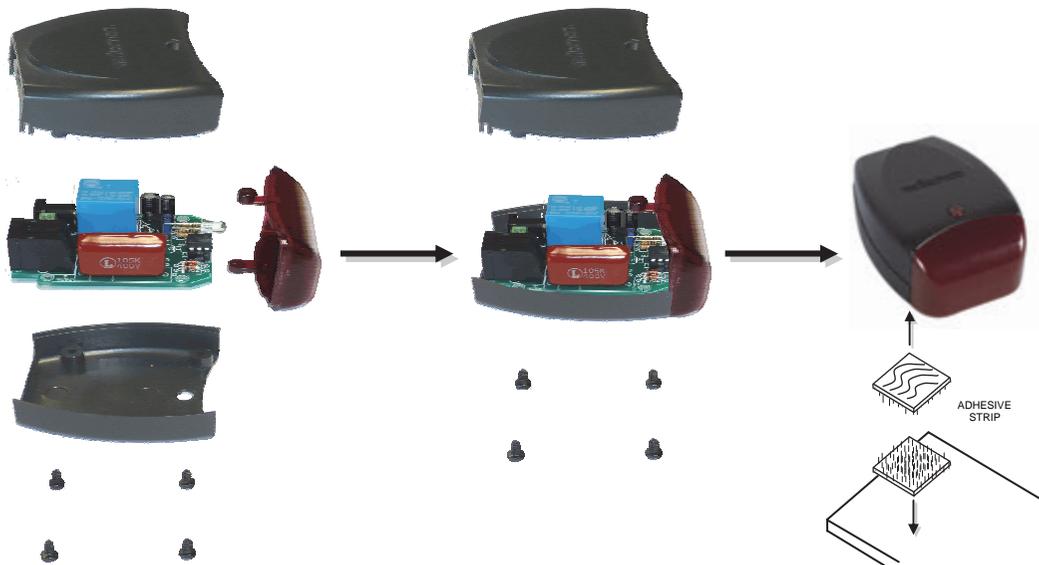
1. LED flash



2. LED flash + relay output



17. Assembly

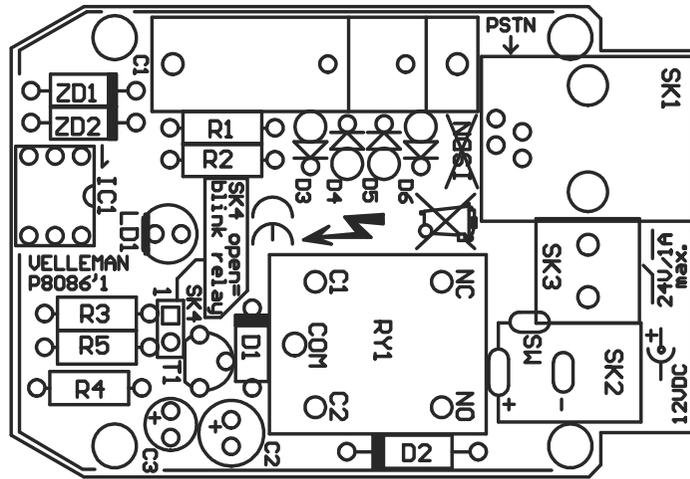




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