FUTURE KIT

HIGH QUALITY ELECTRONIC KITS

FUTURE KIT

VOICE ACTIVE SWITCH
CODE 408

LEVEL 1

The audio switch circuit which be applied with a 220 volts appliance monitors tha work operation of a relay by audio generation as long as its time was set since 1 to 60 seconds.

Technical specifications:

- power supply: 12VDC.
- consumption: 60mA. max.
- adj. sensitivity: trimmer potentiometer
- maximum load: 10A@125VAC and 5A@220VAC
- PCB dimensions : 2.49 x 2.15 inches.

How to works:

This IC circuit utilizes a condenser MIC to work the reception function. When MIC anode receives a voice, it generates a signal frequency and transmits passed on C1 and R2 to pin 2 of IC1/1 to be amplified. Then the frequency is transmitted through pin 1 of IC1 to VR1 in order to be adjusted its level. After that the signal go out through the middle terminal of the VR1 to pin 5 of IC1/2 to compare the voltage. When there is more voltage at pin 5 than pin6, it results pin 7 to transmit the current to pin 12 of IC1/3 to compare with pin 13 of IC1/3. Since there is more voltage at the pin 12 than pin 13, it lets the voltage passed on pin 14 resulting LED1 to be lighted. The current is transmitted through R9 and D9 to C1. C1 is connected to the pin 10 of IC1 so the voltage is higher than pin 9. Then the high voltage passed on pin 8 to R13 and the base of TR1 resulting TR1 to work. The relay attracts the contact face to contact and LED will light on. When the sound is disappear, the voltage at pin 5 is lower than pin 6 so there is any voltage at pin 7, pin 12 and pin 14 resulting LED to be unlighted. The voltage at pin 10 transmitted from C4 is still present. Therefore TR1 functions and the relay works so LED2 remains lighted. C4 discharges the current passed on R11. Since pin 10 of IC1 is present with lower voltage than pin 9, there is any current at the base so TR1 does not function. At this stage the relay release the contact face and LED2 is unlighted. The VR2 at pin 9 isavailable for adjustment of voltage level setting the time from 1-60 seconds.

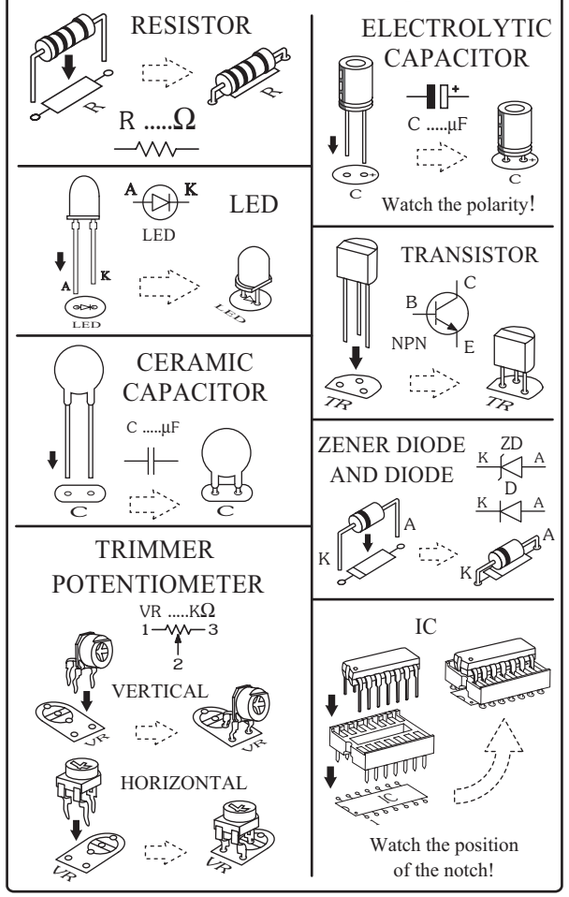
PCB assembly:

Shown in Figure 3 is the assembled PCB. Starting with the lowest height components first, taking care not to short any tracks or touch the edge connector with solder. Some tracks run under components, and care should be taken not to short out these tracks. All components with axial leads should be carefully bent to fit the position on the PCB and then soldered into place. Make sure that the electrolytic capacitors are inserted the correct way around. The LED has a flat spot on the body which lines up with the line on the overlay. Now check that you really did mount them all the right way round!

Testing:

Connect the power supply 12VDC to circuit. Adjust VR1 max. counterclockwise and VR2 to the middle. At this stage LED1 and LED2 do not light. Slightly turn up VR1 and speak at MIC until LED1 is lighted. When the voice is not present, LED1 is unlighted but LED2 remains lighted approximately 30 seconds and automatically be unlighted. If the circuit functions in this fashion this it is practical. Connect the audio switch circuit at "OUT 220V" point and connect the unit at "IN 220V" point.

Figure 1. Installing the componants



Troubleshooting:

The most problem like the fault soldering. Check all the soldering joint suspicious. If you discover the short track or the short soldering joint, re-solder at that point and check other the soldering joint. Check the position of all component on the PCB. See that there are no components missing or inserted in the wrong places. Make sure that all the polarised components have been soldered the right way round.

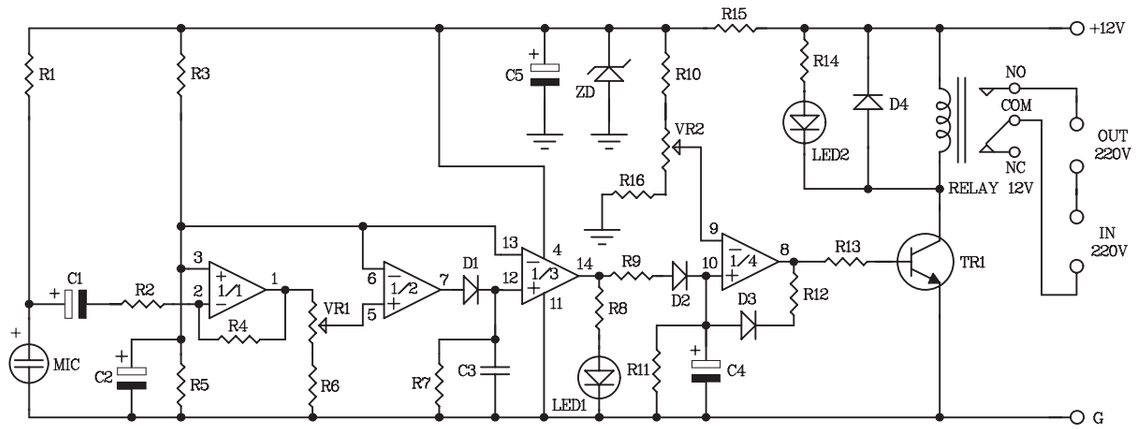
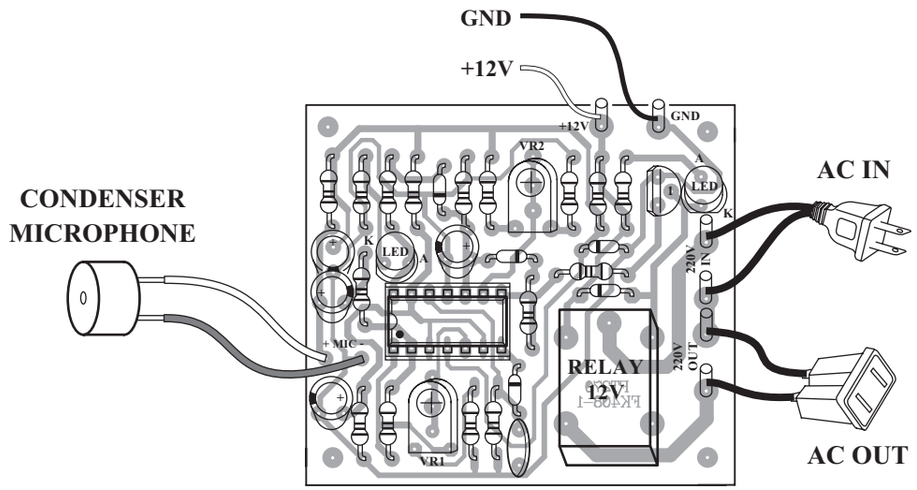


Figure 2. The voice active switch circuit

Figure 3. Connections



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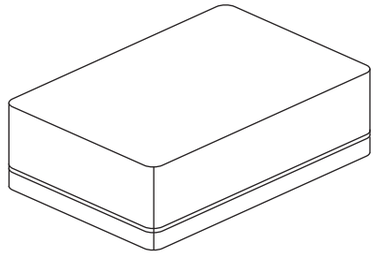

NOTE:

FUTURE BOX FB04 is suitable for this kit.

NEW KIT SET NEW

CODE FK	DESCRIPTION	POWER
161	FEELING FLASHER 14 LED	9-12VDC
162	SATURN'S RING FLASHER 31 LED	9-12VDC
163	UNIVERSAL FLASHER 10 LED	9VDC
164	XENON TUBE FLASHER (STRAIGHT TYPE)	220VAC
165	SOUND ACTIVATED XENON FLASHER (STRAIGHT TYPE)	220VAC
166	LIGHT ACTIVATED XENON FLASHER (STRAIGHT TYPE)	220VAC