

LOW BATTERY ALARM (FOR 12V)
CODE 915 LEVEL 1

Low battery alarm circuit is an electronic circuit that uses for measuring voltage from battery, if battery contains lesser voltage than standard this circuit will work. Easy to use only by connecting the circuit with battery.

Technical specifications:

- this circuit can be adjusted alarm from 7.8 to 12 volts by adjusting at trimmer potentiometer.
- normally 10 volts adjustment is suggested for 12 volts battery.
- PCB dimensions : 1.87 x 1.43 inches.

How to work:

Connecting R1, R2, VR1 together as voltage divider circuit to R3, R4. VR1 acts as trimmer potentiometer to adjust voltage for circuit working. R3, R4, VR1 are working at 3.8 volts under normal condition of charged battery. The voltage at point voltage divider should not be lesser than 3.8 volts. TR1 shorts voltage at the collector of TR1 and the base of TR2 to ground. When the base of TR2 has no voltage, TR2 cannot lead the current. Sound generator which consists of TR3, TR4, TR5 is not completed to ground so it cannot generate sound as well as dynamic buzzer. If there is lower current than standard (3.8 volts), TR1 will not conduct current at the collector of TR1, will not conduct current at the collector of TR1, and the base of TR2 is not shorted to ground, TR2 is working by shorting the collector of TR2 to ground, so TR3, TR4, TR5 can work and dynamic buzzer then giving sound finally.

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. If the pins will not enter the holes with ease, use a small drill to slightly enlarge the opening. 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. Some components are particularly sensitive to heat (ie: Transistors, IC's, diodes etc.) extra care must be taken to only apply the iron for as little time as possible, using a pair of pliers to grip the leads

will help conduct heat away. Trim components leads with wire cutters to prevent excess lengths causing a short circuit. Now check that you really did mount them all the right way round!

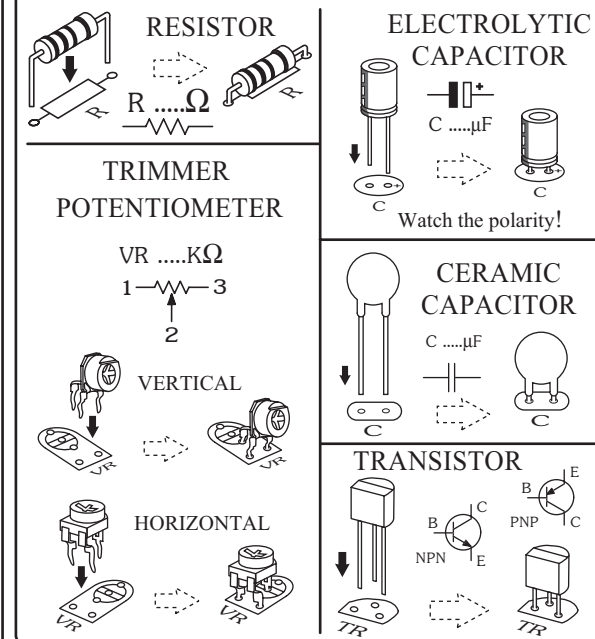
Testing:

Connecting with 9 to 12 volts and adjusting trimmer potentiometer VR1. If there is sound on when adjusting and off when turning to other side means the circuit is workable.

Application:

When you require 12 volts battery to be warned when it is lesser than 10 volts, connecting 10 volts generator at position pole and ground of the circuit. Turning VR1 to zero and respectively up to maximum sound, then connecting to 12 volts battery. This circuit provides 7.5 to 12 volts warning. Covering dynamic buzzer by plastic tube to make sound louder.

Figure 1. Installing the components



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.

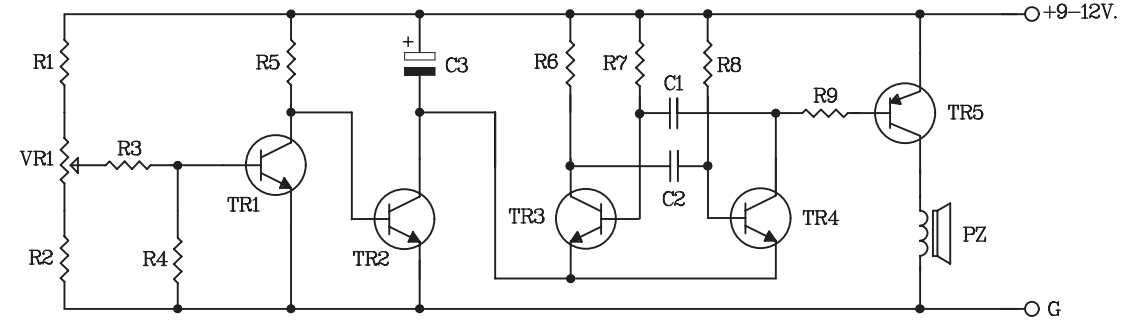
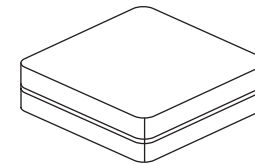
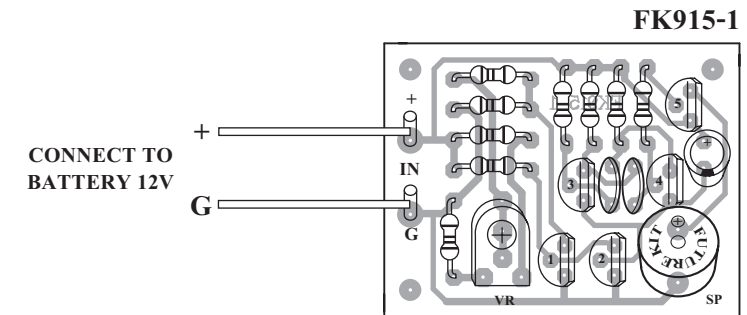


Figure 2. The low battery alarm (for 12V) circuit

Figure 3. Connections



NOTE:

FUTURE BOX FB01 is suitable for this kit.

NEW KIT SET 

CODE FK	DESCRIPTION	POWER
168	NO SMOKING FLASHER 46 LED	9-12VDC.
169	DANCING ROBOT FLASHER 33 LED	9-12VDC.
170	DANGER FLASHER 42 LED	9-12VDC.
171	TWO LAMP FLASHER	3VDC.
172	THREE STEP FLASHER 19 LED	9-12VDC.
173	HALLOWEEN PUMPKIN FLASHER 23 LED	9-12VDC.
174	5x7 ANIMATED LED SIGNBOARD	3-5VDC.
816	VARIABLE REGULATOR 0-50V. 3A.	50VDC.
817	TRANSFORMERLESS POWER SUPPLY 6-9-12V 50mA	220-240VAC.