EL-NEKHELY
& BROTHERS CO. LTD.

Contents

Alarms And Indicators
A-Kemo Circuits
1- Siren Max. 1 Watt, 3...9v--Air-Raid Siren No. B010 دائرة سرينه ١ وات 98
2- Fbi-Siren 12v 15w No. B035 سرينة المباحث الفيدرالية الأمريكية 99
3-Space Siren No. B036 دائرة تنتج صوت سرينة الفضاء 100
4- Sensor Number Lock No B037 دائرة إغلاق بشفرة 101
5 - Sound Generator Morse-Practice-Set 102
6- Light Barrier 12 V No. B045 دائرة مانع ضوئي 103
7- Gas Sensor / Spirits Tester No. B051 دائرة إنذار ضد الغازات والحريق 104
8-Destroyer Siren No. B052 (كسر الزجاج) دائرة إنذار ضد الكسر 105
9- Metal Searching Device No. B055 دائرة للبحث عن المعادن 106
10-Infrared Light Barrier, Range > 18m No. B062 دائرة انذار اشعة تحت الحمراء بمدى ١٨ متر 108
11-Water Detector No. B070 دائرة إنذار ضد الماء 110
12- Martin Siren German Police Siren 12v Max. 15w No. B077 سرينة البوليس الألماني 111
13- Lie-Detector No. B087 دائرة كشف الكذب 112
14-Co Jack Siren 12v 15w No. B091 سرينة الكوجاك 113
15- Universal Alarm system for
16-Tone Generator 6...12v No. B103 دائرة مولد ذبذبات 115
17- Ship Siren No. B104 سرينة السفن 116
18- Robot-Voice No. B107 دائرة تصدر صوت الإنسان الآلي 117
19- Alarm Display No. B198 دائرة توضيح وجود جهاز إنذار 119
20- Infrared Light Barrier Max. 50m No. B213 دائرة مانع ضوئي ٥٠ متر 119
21-Ultrasonic Distance Alerter/Alarm System No.B214 دائرة إنذار بالأشعة فوق البنفسجية 121
22- Smoke Alarm 12v= No. B217 دائرة إنذار ضد الدخان 123
Other Circuits 124
1- Power Supply Failure Alarm دائرة إنذار ضد سقوط مصدر القدرة 124
2-Theft Preventer Alarm دائرة إنذار ضد السرقة 125
3- Rain Alarm دائرة إنذار ضد الماء او المطر 126
4- A Simple Electronic Buzzer دائرة جرس إليكتروني 127
5-Water Level Indicator With Alarm دائرة توضيح مستوى الماء 128
6- Melody Generator For Greeting Cards دائرة مولد نغمات لبطاقات التهنئة 129
7- 4 In 1 Burglar Alarm دائرة إنذار سرقة ٤ في ١ 130
8- Brake Light Flasher دائرة فلاشر 131
9- Car Anti Theft Wireless Alarm دائرة إنذار سيارة لاسلكي 132
10- Fire Alarm دائرة إنذار حريق 133

ALARMS AND INDICATORS

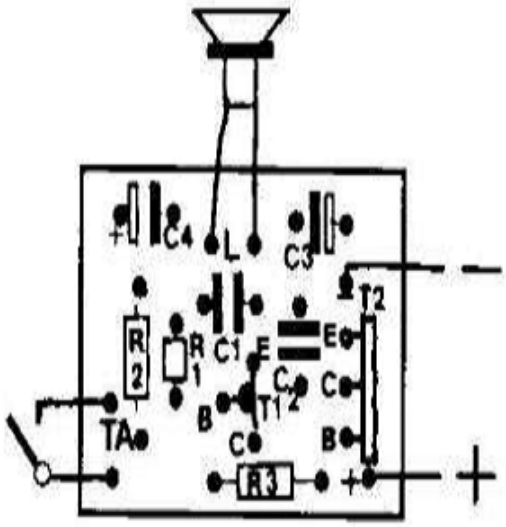
A-KEMO CIRCUITS

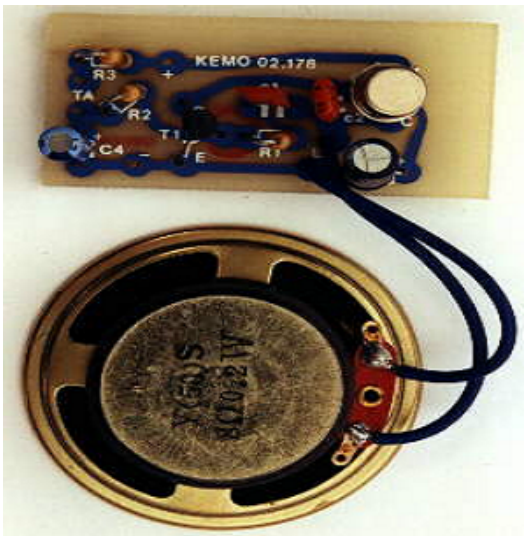
1- Siren max. 1 Watt, 3...9V--Air-raid siren No. B010 دائرة سرينه ١ وات

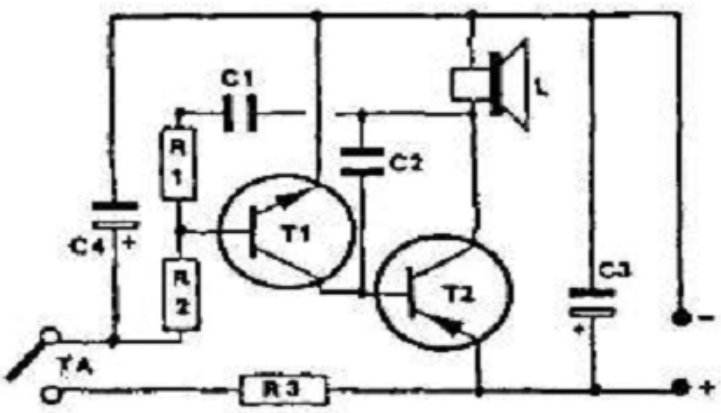
دائرة إنذار غارة جوية بقدرة ١ وات وجهد تشغيل من 3V إلى 9V ولكن في حالة تشغيل الدائرة على جهد أعلى من 4.5V لابد من تبريد الترانزيستور T2 . بعد توصيل مصدر الجهد لابد من توصيل المفتاح TA بمفتاح ضاغط (Push-button) أو ب relay للتحكم فيه من بعد. عند غلق طرفي التوصيل TA تبدأ الدائرة في تشغيل صوت الإنذار بمستوى منخفض ثم يرتفع تدريجيا. و عند فتحهما يقل مستوى الصوت تدريجيا.

Loud siren with increasing and decreasing sound. Perfect for model making, Complete with loudspeaker

In case the siren is operated with a voltage higher than 4.5V (max. 9V), the transistor T2 must be cooled with a heat sink (not included in the kit). After feeding the operating voltage the contact TA must be either connected with the push-button or by a relay of the remote control. If the contact TA is closed, the siren begins slowly to wail, if the contact is then opened again the sound decays slowly. If the loudspeaker is installed in a housing with hearing tube, the sound is much louder because of the resonance.



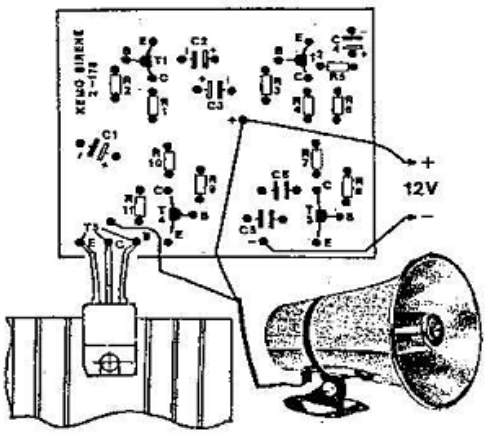


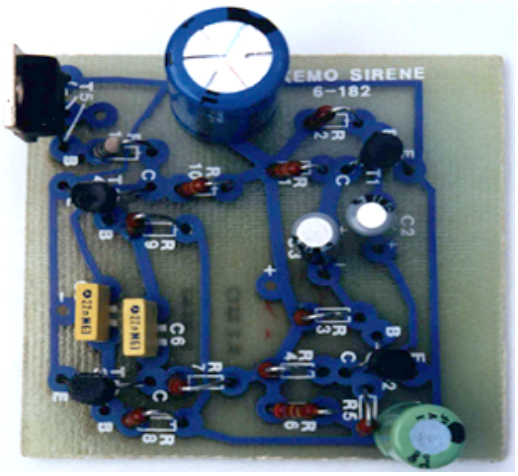


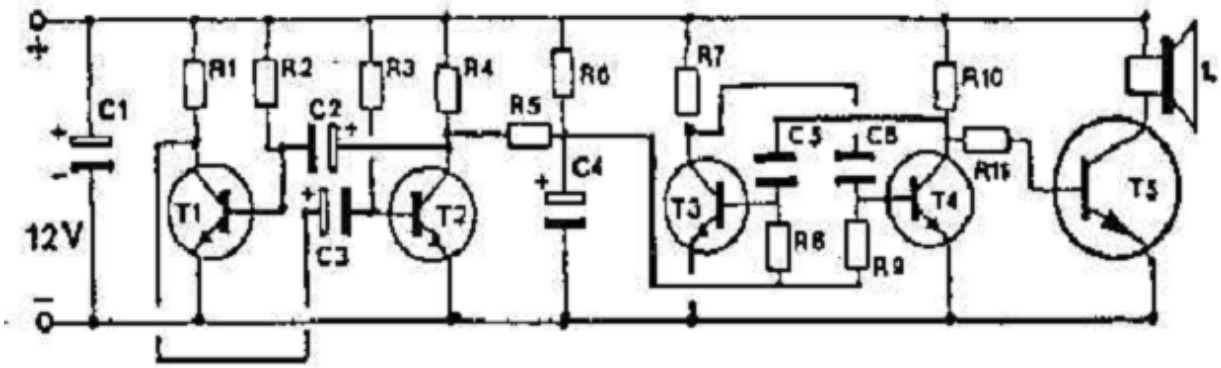
2- FBI-siren 12V 15W No. B035 سرينة المباحث الفيدرالية الأمريكية

جهد التشغيل للدائرة 12V وتستخدم مع السماعات من ٨ اوم إلى ٣٢ اوم وتعطي خرج من ٣ وات إلى ١٥ وات بناءا على مقاومة السماعة وتعطي ١٥ وات مع السماعة ٨ اوم .

Audible electronic siren with a tone of the American police siren. Operating voltage: 12V.
For loudspeaker 8...32 Ohm. Power 3...15 Watt, depending on the loudspeaker.
Please take special care that you carry out correct equipment of the printed board. The siren will achieve at an 8 Ohm loudspeaker max. 15 Watt. In case this high volume won't be required, it is possible to use any loudspeaker with a higher impedance. With a 16 Ohm loudspeaker the siren will achieve approx. 7 Watt, with a 32 Ohm loudspeaker e.g. 4 Watt. It is feasible to connect several loudspeakers in series, e.g. to increase the impedance. (2 loudspeakers each with 4 Ohm connected in series will show a total connecting impedance of 8 Ohm). Furthermore, it is feasible to connect in series with a wire wound resistance of 4...100 Ohm a loudspeaker, in order to reduce the volume. The siren has, depending on the loudspeaker impedance, a current consumption of 0,3...2 Ampere. The current supply must, consequently, be sufficiently powerful (car-accu). Never use small dry batteries! Moreover, the loudspeaker should be prepared for the power of the siren. Too weak loudspeakers may burn out!!! The transistor T5 should be fixed with screws on a small cooling plate (approx. 10 x 10 x 0,5 cm). The cooling plate isn't enclosed in the kit. The cooling plate must be placed insulated and well ventilated (it may not touch any other conducting metal components!).





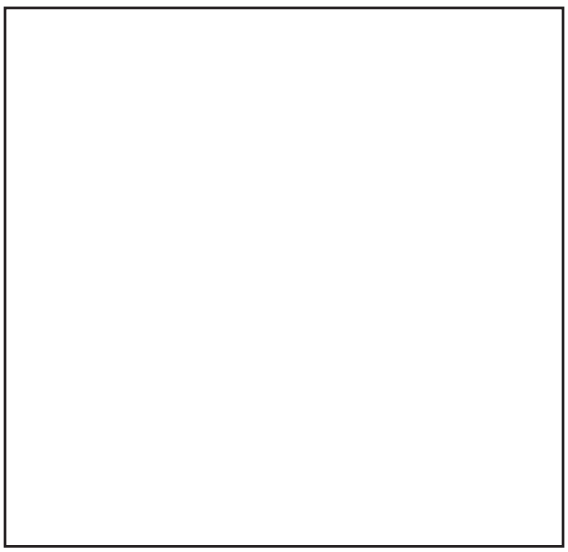


CIRCUIT DIAGRAM

3-Space siren No. B036 دائرة تنتج صوت سرينة الفضاء

دائرة سرينة الفضاء . وتعمل مع السماعات من ٨ اوم الى ٣٢ اوم . وتعطي قدرة خرج من ٣ وات الى ١٥ وات بناءا على مقاومة السماعة . وجهد التشغيل للدائرة ١٢ فولت . وعند عمل الدائرة لابد من وضع المكونات بالطريقة الصحيحة على اللوحة المطبوعة وتعطي الدائرة أقصى قدرة لها ١٥ وات عندما تكون مقاومة السماعة ٨ اوم . و مع السماعة ١٦ اوم تعطي ٧ وات .

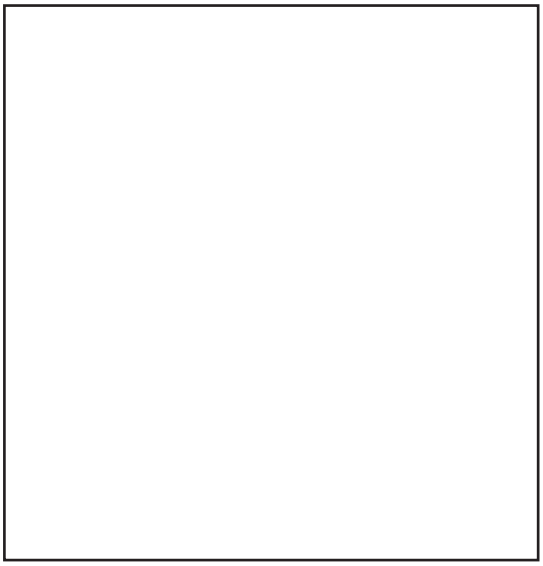
Extremely audible, nerve-shattering siren sound with the attack alarm known from the movie "Star Wars". For loudspeaker from 8...32 Ohm.
Power: 3...15 Watt, depending on the loudspeaker.
UB: 12 Volt, 0,3...1,2 Ampere.

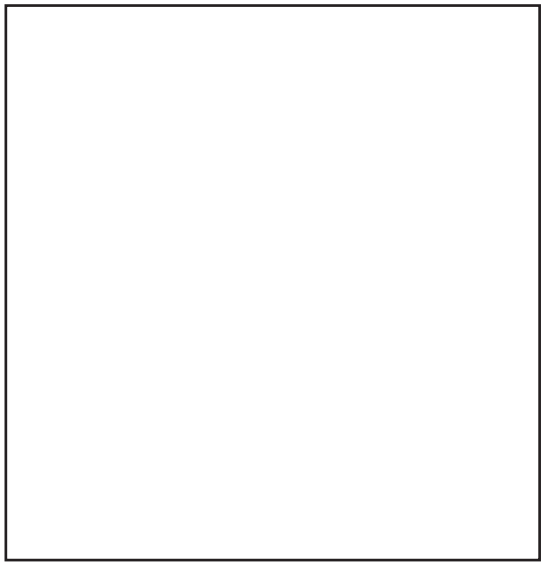


LAYOUT

Please take special care that you carry out correct equipment of the printed board! The siren will achieve at an 8 Ohm loudspeaker max. 15 Watt. In case this high volume won't be required, it is possible to use any loudspeaker with a higher impedance. With a 16 Ohm loudspeaker the siren will achieve approx. 7 Watt, with a 32 Ohm loudspeaker e.g. 4 Watt. It is feasible to connect several loudspeakers in series, e.g. to increase the impedance. (2 loudspeakers each with 4 Ohm connected in series will show a total connecting impedance of 8 Ohm). Furthermore, it is feasible to connect in series with a wire wound resistance of 4...100 Ohm a loudspeaker, in order to reduce the volume. The siren has, depending on the loudspeaker impedance, a current consumption of 0,3...2 Ampere. The current supply must, consequently, be sufficiently powerful (car-accu). Never use small dry batteries! Moreover, the loudspeaker should be prepared for the power of the siren. Too weak loudspeakers may burn out!!! The transistor T5 should be fixed with screws on a small cooling plate (approx. 10 x 10 x 0,5 cm). The cooling plate isn't enclosed in the kit. The cooling plate must be placed insulated and well ventilated (it may not touch any other conducting metal components)

THE CIRCUIT DIAGRAM



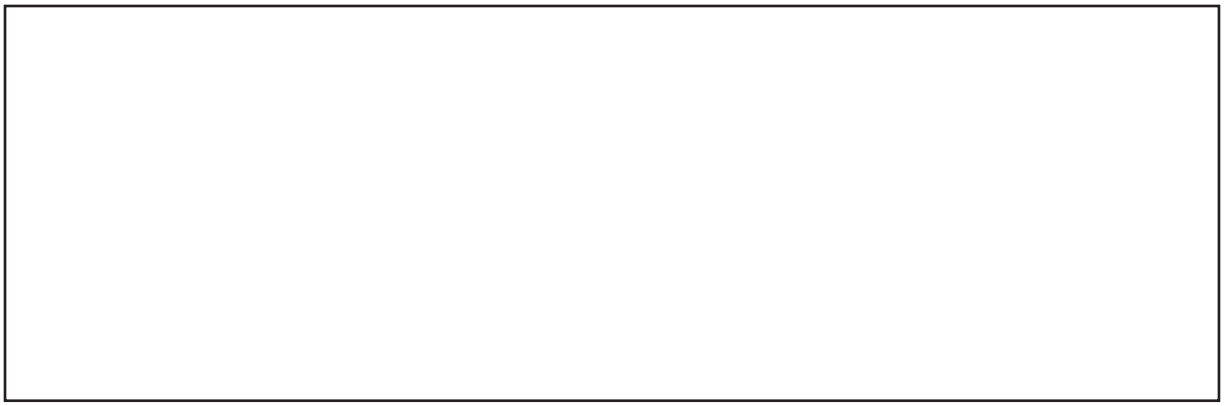


THE TOP AND REAL VIEW

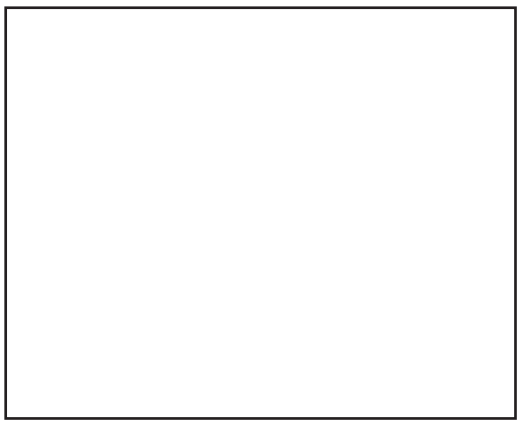
4- Sensor Number Lock NO B037 دائرة إغلاق بشفرة

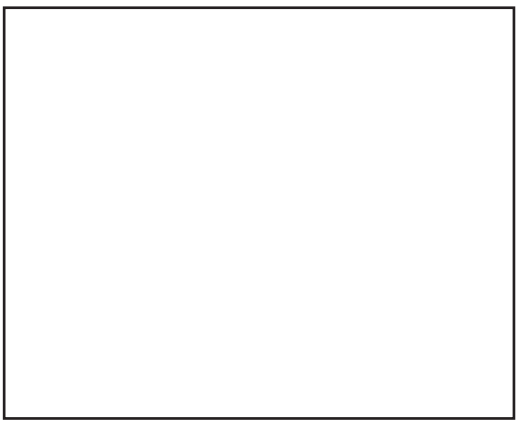
تستخدم هذه الدائرة لفتح الأبواب و البوابات آليا بدون الحاجة إلى مفاتيح وتشغيل الماكينات والأجهزة الإلكترونية والتي لابد أن يتم تشغيلها عن طريق الأشخاص المصرح لهم بذلك . فعند الضغط على الرقم الصحيح يتم غلق ال RELAY وتعمل الدائرة . أما إذا تم الضغط على الرقم الخاطئ تتوقف الدائرة عن العمل لفترة زمنية محددة.

Electronic "sensor" number lock. Touching the correct numbers a relay will operate. In case that false numbers are touched, the lock will block automatically for some time. The number can be preset freely. Operating voltage: 12 V.
Usage: For opening doors and gateways without keys, to switch machines and electronic devices, which should not be operated by unauthorized persons (through latching relay). For self made electric locks at safes and partition for valuables etc.
The enclosed 10 sensors heads have to be stacked according to the figure in the corresponding bore holes at the sensor keyboard on the printed circuit board. The two sensors which should open the lock, have to be joined
through short wires with both soldering spots at the right side of the reverse side of the p.c. board (in the figure we use as example the numbers "O" and "1"). Whenever these two sensors heads are touched at the same time with the fingers, the relay will pull on. You may, of course, choose any other number and comply with your favorite combination to open the lock.
All others numbers have to be joined in couples with the two soldering spots at the left side "sensors lock", achieving that the lock will block immediately for some time (approx. 30...120 seconds) whenever false sensors have been touched. During this time operating the lock is impossible, even if the right numbers are touched. By that means, it is not feasible that strange persons may find out the correct numbers simply through "testing". The board element with the sensors heads may also be sawed off and be mounted at any other place. The connections to the board should then be made with short wires.



THE CIRCUIT DIAGRAM



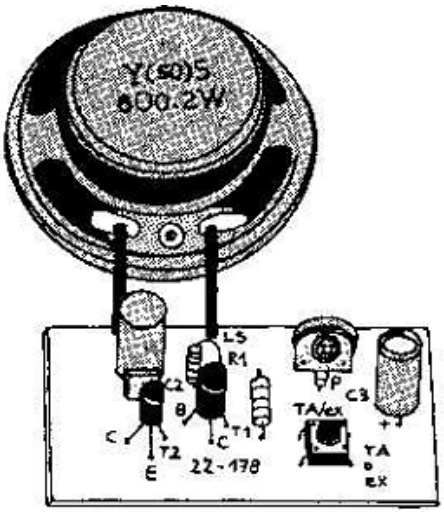


THE TOP AND REAL VIEW

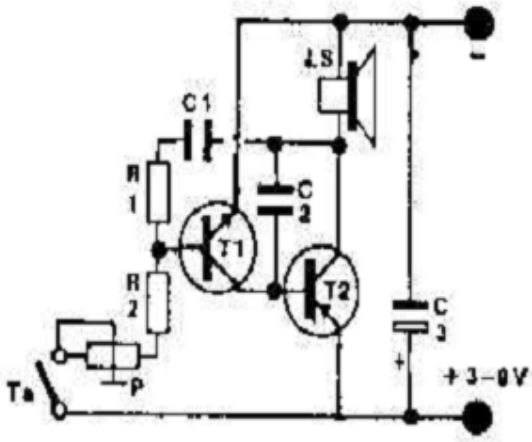
5 - SOUND GENERATOR MORSE-PRACTICE-SET

دائرة توليد شفرة مورس . تعمل بجهد تشغيل من ٣ فولت إلى ٩ فولت .هذه الدائرة من الممكن أن تستخدم كدائرة تدريب على شفرة مورس أو كدائرة إرسال مشفرة من خلال أسلاك طويلة . و قد تستخدم كجرس للباب أو جهاز قياس توصيل الأسلاك (buzzer) و يمكنه قياس التيار حتى ١٥ ميكرو أمبير لذلك فيمكن قياس الكبلات ذات المقاومة العالية .

Sound generator with loudspeaker and pushbutton as "Morse key". For 3...9 Volt operating voltage. Pitch of sound can be adjusted. This especially audible sound generator can be used as practice set for Morse signals or as direct transmitter of coded communications realized through a longer cable, or it may be used as test buzzer, doorbell or as continuity checker for electrical wirings. The test current amounts less than 15µA, so that even high-ohmic connections can be measured.
You should solder the two transistors T1 + T2 correctly into the printed circuit board Both transistors have different connecting sequences. Through the trimmer potentiometer it is feasible to tune the desired pitch of sound. Volume will increase if the loudspeaker is fitted into a case. It is possible to connect instead of the digit-switch, which has to be soldered directly on the printed circuit board, through a cable a real Morse key or a bell push (for doors). If there are connected instead of the switch two test-lead points, this sound generator may be used also as continuity checker for dead wirings. Due to the extremely low test current of less than 15µA it is possible to realize continuity checks at high-ohmic or sensitive wirings. The pitch of sound will vary with increasing ohmic volume resistances, so that they can be distinguished acoustically.



TOP VIEW

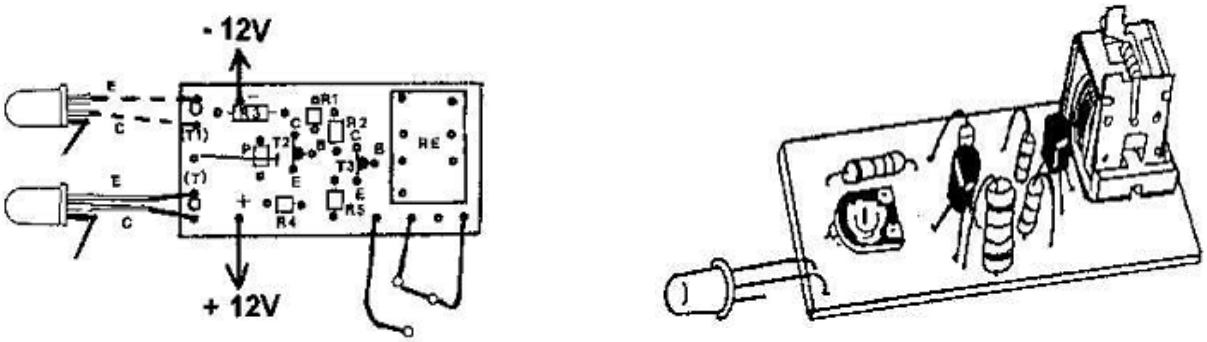


CIRCUIT DIAGRAM

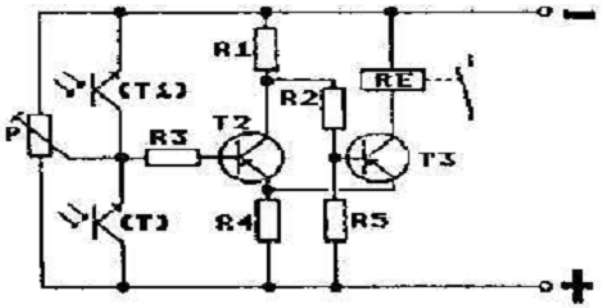
6- Light Barrier 12 V No. B045 دائرة مانع ضوئى

تقوم الدائرة بفتح وغلق ال RELAY في الضوء والظلام (الخيال) . وتستخدم كدائرة إنذار حيث أنة عندما يقوم شخص بقطع الشعاع تقوم الدائرة بإطلاق جرس الإنذار. وللدائرة حالتي تشغيل .
١- بوضع الترانزيستور الضوئي في المكان T فأنة يقوم بفتح ال REALY في الضوء و غلقه في الظلام.
٢- بوضع الترانزيستور الضوئي في المكان T١ فأنة يقوم بفتح ال REALY في الظلام و غلقه في الضوء .
وبناء على الاستخدامات المختلفة يمكن اختيار الحالة المناسبة للوظيفة. وفي حالة استخدام هذه الدائرة كمانع ضوئي (دائرة إنذار) لابد من وضع الترانزيستور في المكان T1 مع وضع اسطوانة سوداء صغيرة علية بحيث يقع الضوء علية أفقيا من إمام سطحه الحساس للضوء وبهذه الطريقة تكون هناك حماية من السقوط الجانبي للضوء عليه. ومع وضع لمبة في الاتجاه المعاكس والتأكد من سقوط الضوء على الترانزيستور الضوئي من خلال الأنبوبة فأنه عند قطع أي شخص للضوء يقوم الترانزيستور بتشغيل الإنذار أو الإضاءة أو الجرس.....الخ .

switches on/off a relay at light and darkness(shadow). Usage: Whenever the light beam of a lamp on doors, windows, etc. is interrupted by a person, the device will release alarm. Also suitable as twilight switch.
This light barrier receiver reacts on light and darkness by switching on and off a relay. For this kit there are two operation modes:
1) Connecting the phototransistor at "T", the relay will switch on with illuminated phototransistor and will switch off at darkness.
2) Connecting the phototransistor at "T1", the relay will switch on at darkness and off with light.
Depending on the different usages it is possible to select the most suitable mode of operation. In case of using it as light barrier e.g., it is necessary to solder the phototransistor at T1 and to fix a small black tube on the phototransistor providing that the light may fall solely horizontally from the front on the light-sensitive surface. That way, it is protected against lateral incidence of light.
Mounting now in a distance of some meters a lamp (if possible with focusing lens or reflector) achieving that the light falls directly through the tube on the phototransistor, you get a splendid door security system. The trimmer potentiometer has to be adjusted so that the relay does just not pull on.
If a person crosses the light beam, a shadow will be reflected on the phototransistor and the relay will switch on (bell, counter, etc.).



TOP AND REAL VIEW



CIRCUIT DIAGRAM

7- Gas Sensor / Spirits tester No. B051 دائرة إنذار ضد الغازات والحريق

هذه الدائرة تستطيع أن تبين وجود الغازات مثل الكحول والأسيتون و البروبان و أول أكسيد الكربون الموجود في دخان الحرائق . أي إنها تعمل كدائرة إنذار ضد الغازات والحرائق. جهد التشغيل للدائرة ١٢ فولت والتيار ١٥٠ ملي أمبير . عند تجميع الدائرة يجب وضع المكونات بالطريقة الصحيحة على اللوحة المطبوعة مع ملاحظة أن المقاومة R1 قد تسخن أثناء تشغيل الدائرة ولذلك يجب أن تكون مرتفعة عن اللوحة المطبوعة قليلا .

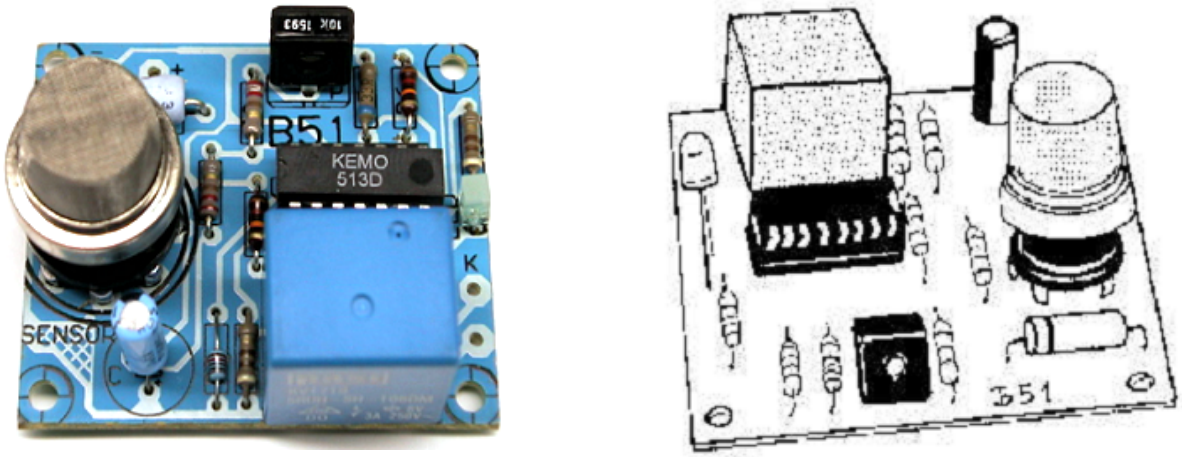
This instrument indicates gases such as alcohol, acetone, benzole, propane, carbon monoxide (contained in the smoke of fire). Perfect as alarm for gases + fire. Operating voltage: 12V=, approx. 150mA, indication: LED and relay (1 x ON 3 A).

Please pay attention to the correct assembly of the board: the IC has a chamfering on one side which must correspond to the assembly print. In case of the light emitting diode and the elca "C", the right polarity must be observed, too.

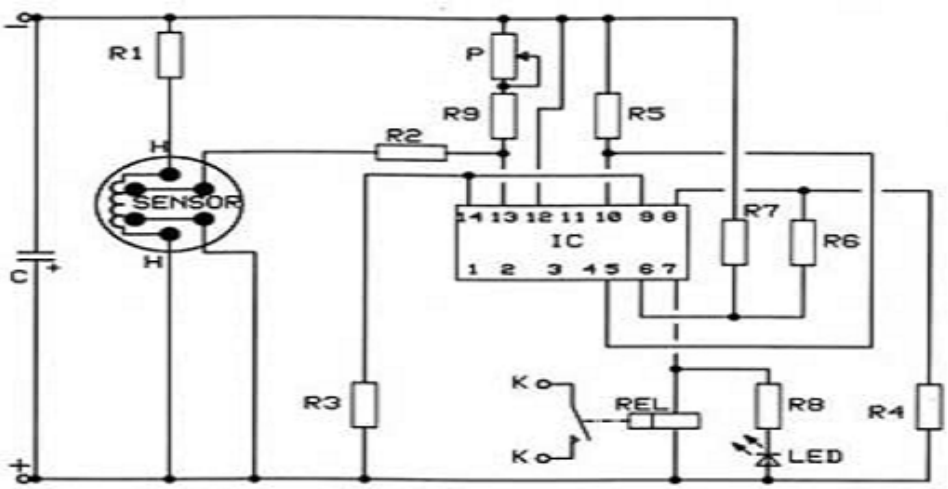
During operation the resistor R1 gets hot. Therefore, it must be installed in such a manner that the resistor body has a distance of approx. 1...2 mm from the board (for better ventilation).

The gas sensor is only stuck into the holder after having assembled the board completely. The gas sensor fits into the appropriate holder in 2 different positions. Due to the fact that the head of the sensor is constructed symmetrically, it operates in both possible positions in which it may be stuck into the holder. If the finished board is installed in a case, breathers must be drilled into the case. These holes are necessary so that the head of the sensor is able to "smell" the gases and furthermore that the circuit will be ventilated due to the development of heat of R1. A total of at least 8 holes with a diameter of 6 mm should be drilled into the case near the head of the sensor (or more).

Attention: This kit is a "hobby circuit" for teaching and experimental purposes and must not be used for protection of life and property! We, Messrs. Kemo, decline any liability if escaping gas or a fire which has developed remains undiscovered through failure of the circuit and if damage to life and real values emerge from it.



layout and real view

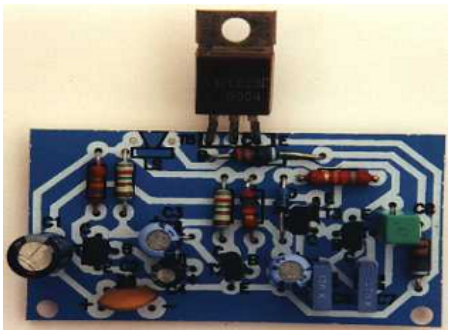


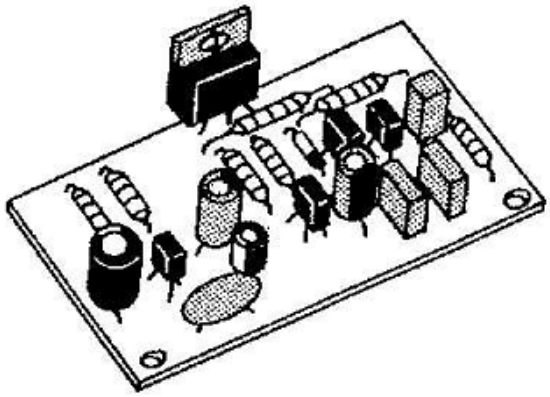
CIRCUIT DIAGRAM

8-Destroyer Siren No. B052 (دائرة إنذار ضد الكسر (كسر الزجاج

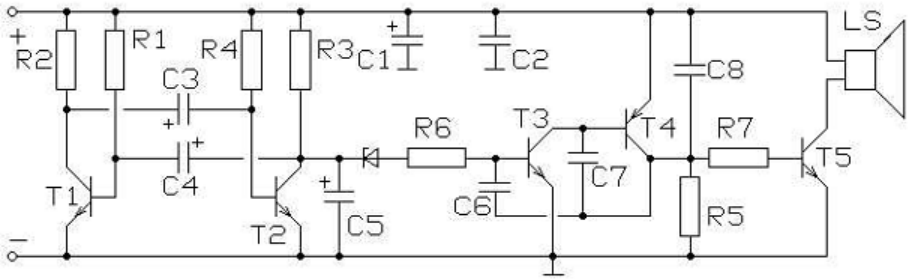
دائرة إنذار ضد الكسر تعمل بقدرة من ٣ وات إلى ١٥ وات بناء على جهد التشغيل من ٦ فولت الى١٢ فولت وتعمل مع السماعات التي لها مقاومة ٨ اوم . ولجهد التشغيل أعلى من ٦ فولت لابد من تبريد الترانزيستور T5 .

Warship siren "Clear decks for action". In rapid intervals sounds a shortly swelling tone: Uiiit... Uiiit...Power: 3...15 W, depending on the operating voltage. For 6...12 Volt. For loudspeaker connection 8 Ohm. The siren requires depending on the operating voltage 1...2 Ampere. With operating voltages of more than 6V, it is necessary to cool the transistor T5. It will be necessary to fit a cooling plate of approx. 50 x 50 x 3 mm. Please take care to mount correctly the transistors.





THE LAYOUT AND THE REAL VIEW



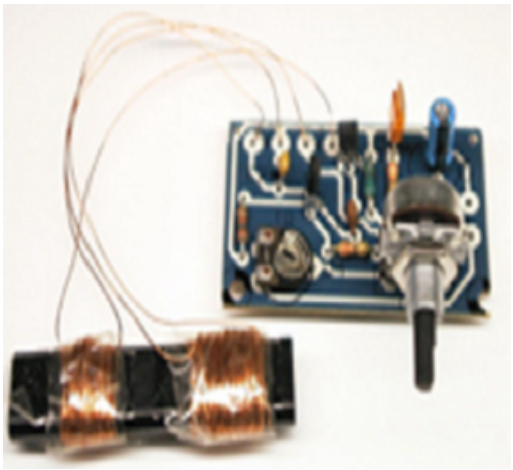
CIRCUIT DIAGRAM

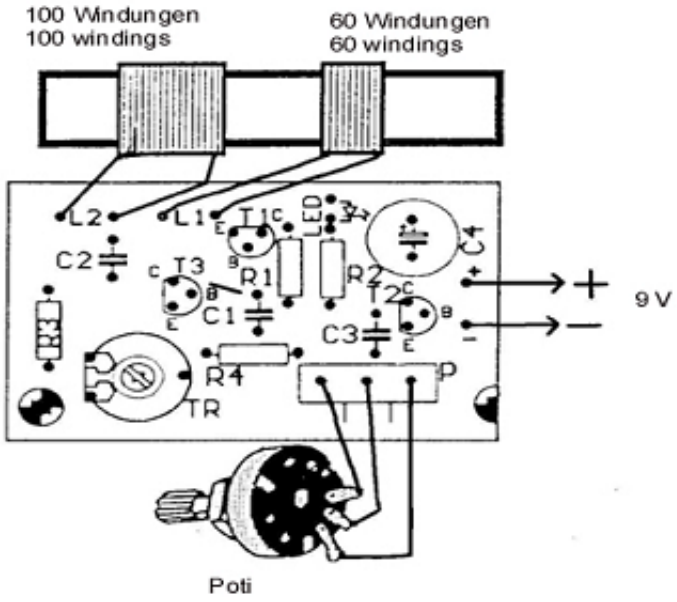
9- Metal searching device No. B055 دائرة للبحث عن المعادن

هذه الدائرة تستطيع الإحساس بالأجسام المعدنية داخل الحوائط أو الأسقف بعمق لا يزيد عن ٦ سم . وجهد التشغيل للدائرة ٩ فولت .ويجب لف الملفات بحيث أن تكون اقل مسافة بين طرفي الملف ٨ مم و لا يجب وضع الدائرة في علبة معدنية ولكن توضع في علبة معزولة كما يجب ضبط المقاومة المتغيرة P على قيمتها المتوسطة.

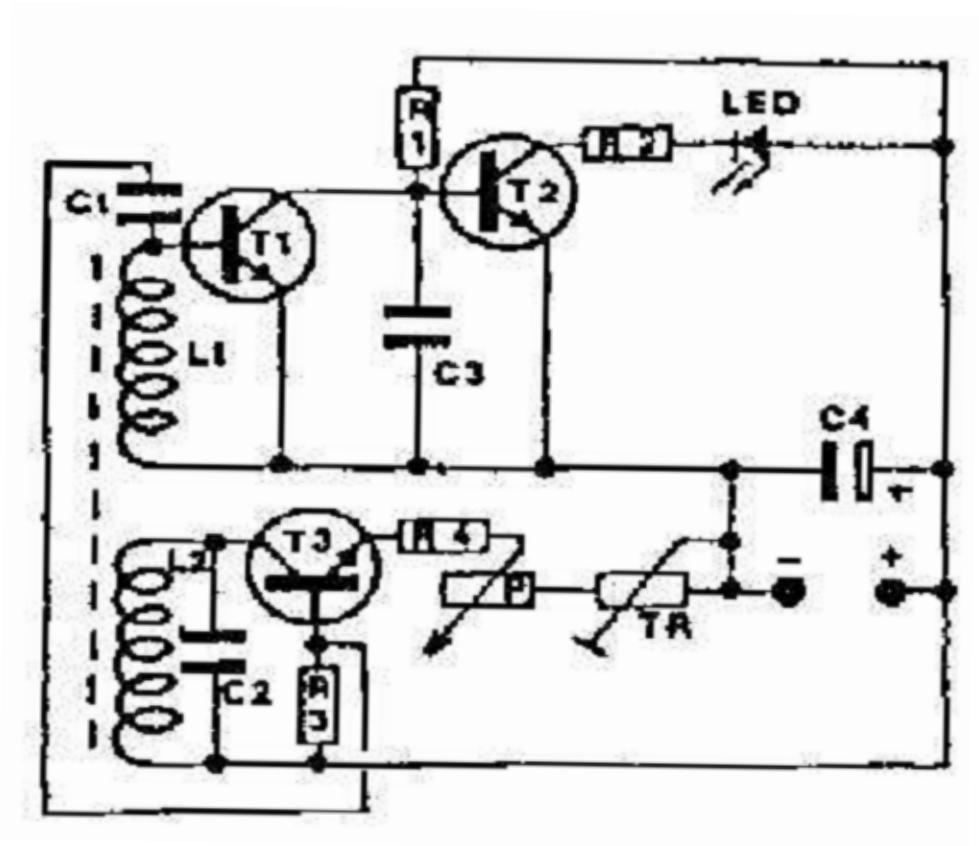
The device locates any metal element till a maximum of 6 cm in walls, floors, etc. Indication is realized through LED. The sensitivity is adjustable. With the help of the ferrite antenna exact locating is possible.
Operating voltage: 9V=.
Please take care that the parts are correctly placed on the printed wiring board: The transistors are at one side of the case chamfered. With the luminous diode you will find the "A" junction (anode) as the longer lead wire. The coils are to be winded with the enclosed varnished wire at a distance no less than 8 mm with one another/side by side and to be tinplated at the wire ends.
Caution: Do not wind the coils one upon the other. Now, you have to scrape off the light varnish cover on the wire ends using a razor blade or screwdriver and, after that, tin-plate the blank cupper with a soldering iron. The coils are connected with the printed wiring board. A 9V battery is sufficient as working voltage.
The apparatus should not be placed in a metal case, but only in an isolated case.
Balancing: the potentiometer (P) has to be turned to mid-position. Afterwards, the trimmer potentiometer "TR" has to be adjusted that way, the luminous diode LED just goes out. Now, fine adjustment can be realized with the potentiometer. The position where the LED just goes out is regarded as the most sensitive one. The LED will light up if a piece of metal is approached to the ferrite antenna (3...6 cm). In case of not being possible adjusting the LED and the wiring is correctly placed, then both junction wires

of the coil with 60 windings are to be exchanged with one another. Welding the printed wiring board in a water-proof plastic bag, wiring can be used under water! Divers are now capable, for example, to distinguish seaweed covered stones from overgrown old cannons or wrecks!





THE LAYOUT AND REAL VIEW



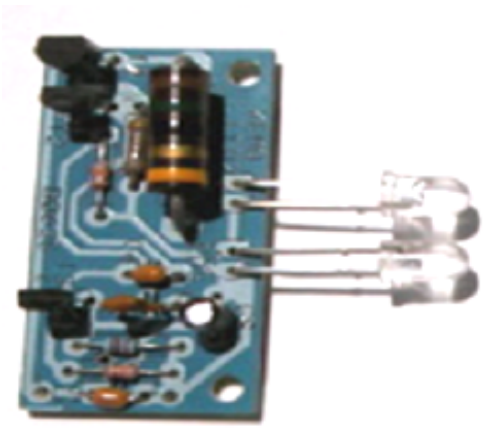
THE CIRCUIT DIAGRAM

10-Infrared light barrier, range > 18m No. B062 دائرة انذار اشعة تحت الحمراء بمدى ١٨ متر

دائرة مانع ضوئي بالأشعة تحت الحمراء الغير مرئية . جهد التشغيل لدائرة الإرسال ٩ فولت ولدائرة الاستقبال ١٢ فولت . ولا يقل تيار الدخل في كلا من الدائرتين عن ١٥٠ ملي أمبير ولابد من وضع دائرة الاستقبال بحيث تكون مواجهة تماما لدائرة الإرسال كما بالشكل التالي و كلما اتسعت المسافة بين الدائرتين كلما ارتفعت الحساسية بالنسبة للتوجيه.

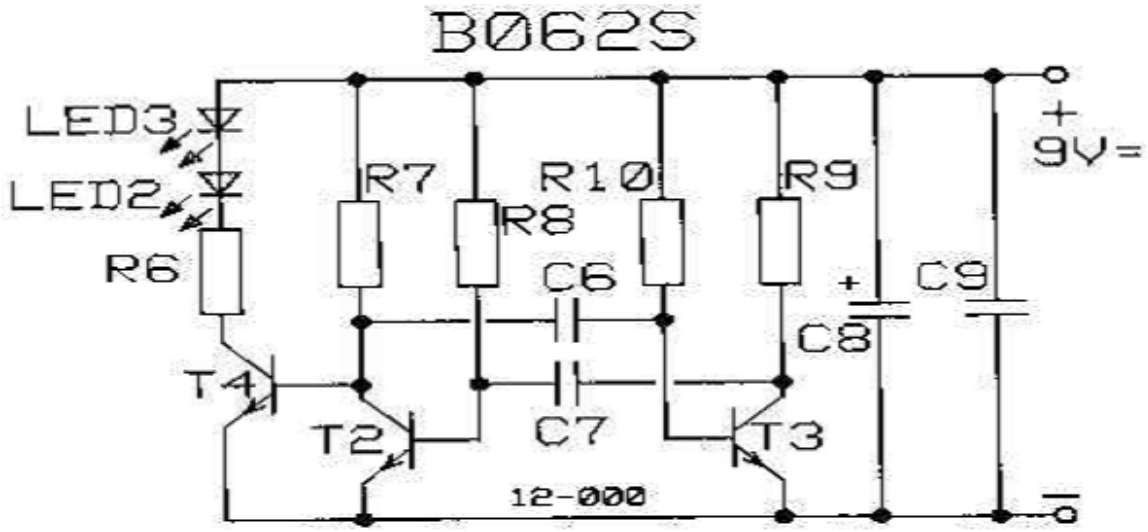
Light barrier with invisible infrared light beam. Transmitter and receiver included! Operating voltage: transmitter 9V, receiver 12V, relay 1 x ON max. 3A. Ideal for alarm systems, automatically animal picturing, remote control for garage doors, etc. With incorporated infrared filter for day operation!

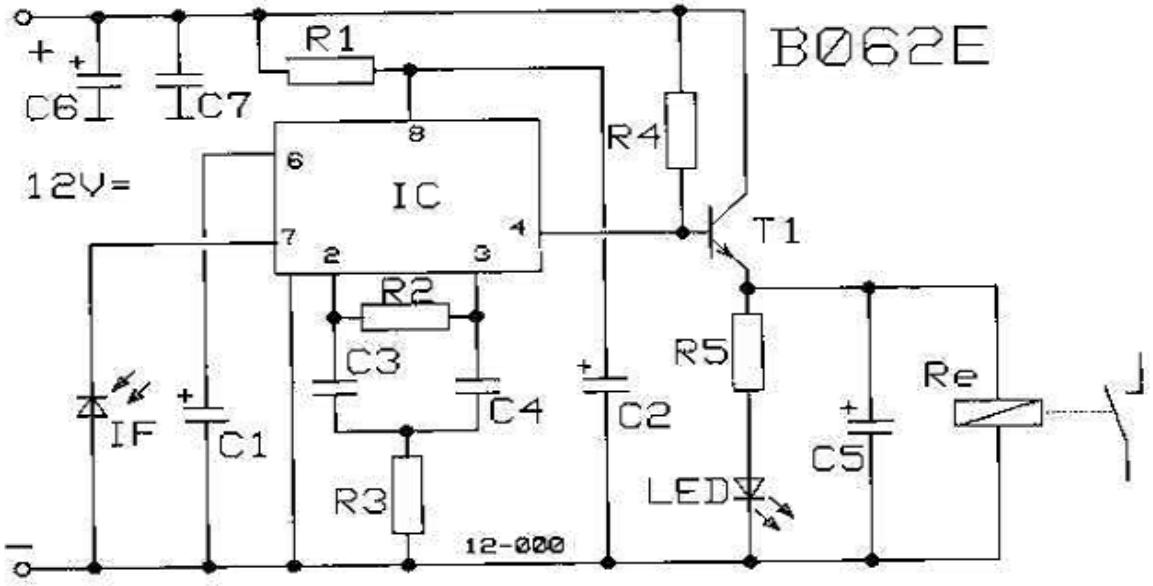
Both printed wiring boards are equipped with the components following the figure. The receiver p.w. board has to be fixed that way that the transmitter is within the sight of the infrared diode "IF". The receiver needs a well filtered d.c. voltage of 12V, approx. 100mA, supplied by power pack or battery. The transmitter needs a voltage of 9V having a current supply of approx. 50...80mA. Using batteries it must be considered that they are sufficiently powerful to feed 100mA. Small 9V transistor batteries will not withstand in case of continuous operation! Both infrared light diodes of the transmitter must be adjusted to the diode of the receiver "IF"! The longer the distance, the more exactly the LED transmitting diodes have to be aligned with the receiver. Whenever the transmitter radiates in the direction of the receiver, the LED of the receiver will light up and the relay pulls up. Using optical or focus lenses in front of the transmitter and receiver may extend the range of the light barrier considerably. If the receiver is exposed to strong solar radiation, we recommend to protect the IR receiver diode "IF" from behind and laterally with a tube against light scatter. Then the opening of the tube must point into the direction of the transmitter. The inside of the tube should be matt black see drawing.

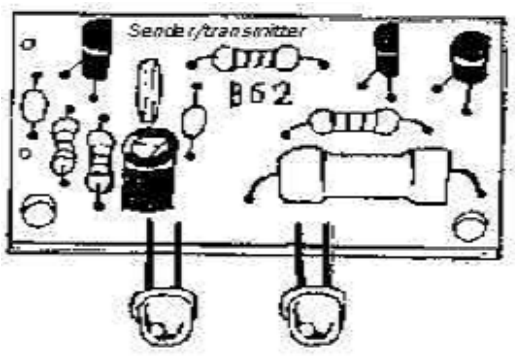


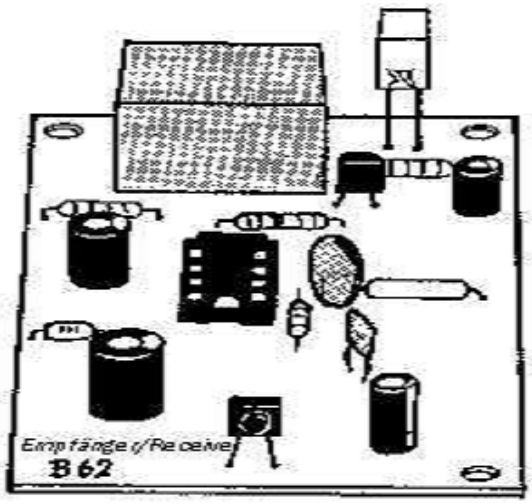
B062S
IR TRANSMITTER

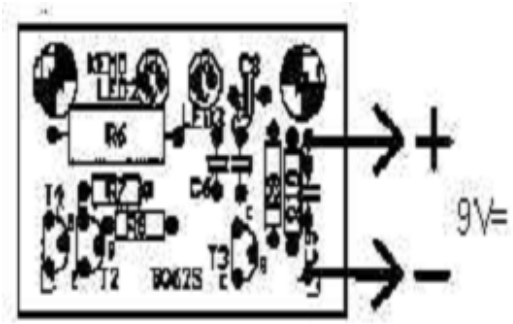
B062E
IR RECIEVER

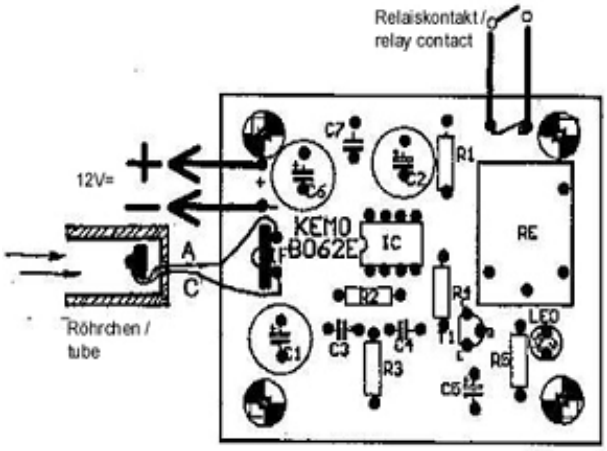

B062S
LED3
LED2
R6
R7
R8
R10
R9
C6
C7
C8
C9
T4
T2
T3
+
9V=
12-000


B062E
R1
C6
C7
12V=
IC
R4
T1
R2
C3
C4
C2
R5
Re
C5
IF
C1
R3
LED
12-000


Sender/transmitter
B62


Empfänger/Receiver
B62

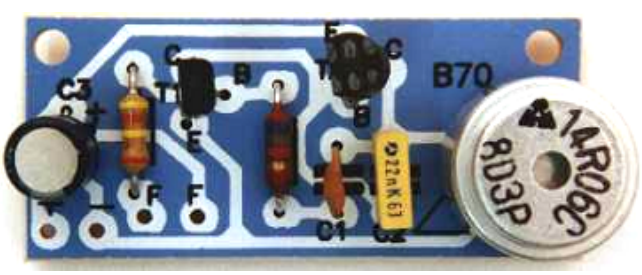


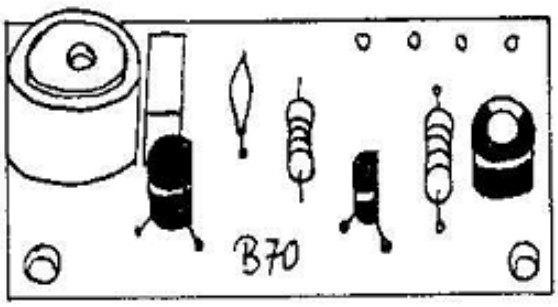


11-Water Detector No. B070 دائرة إنذار ضد الماء

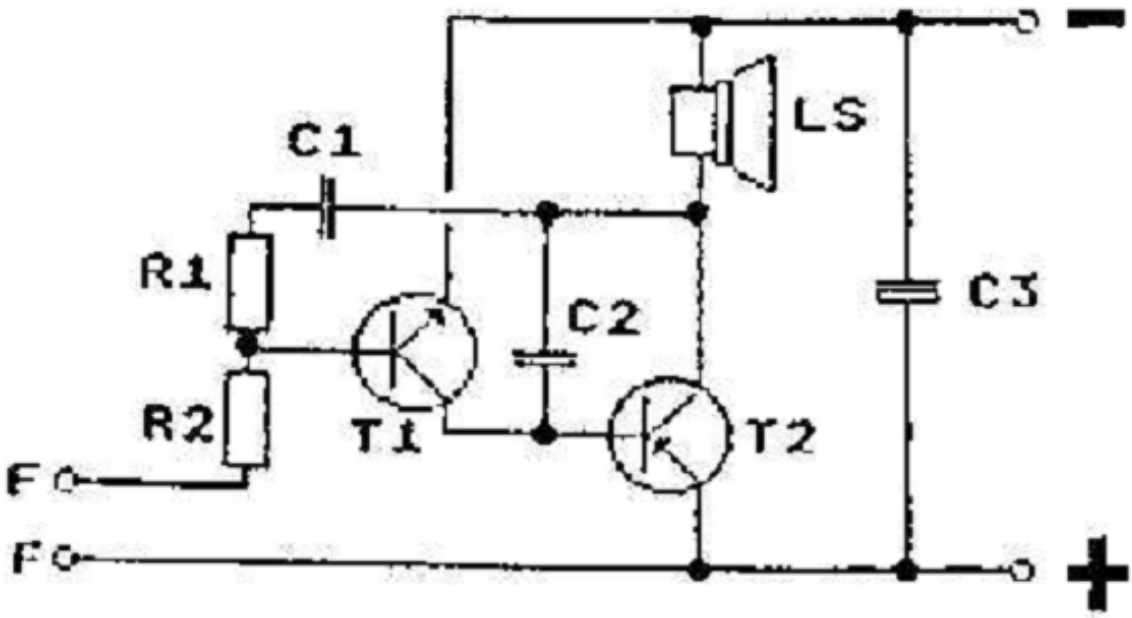
تطلق الدائرة الإنذار في حالة لمس الماء ومن الممكن استخدامها في الإشارة إلى انفجار ماسورة الماء أو امتلئ حمام السباحة . كما يمكن توصيل ال SENSOR بأسلاك طويلة . جهد التشغيل للدائرة من ٦ فولت إلى ٩ فولت . كما يجب وضع المكونات على اللوحة المطبوعة بطريقة صحيحة . وعند طرفي التوصيل F يجب لحام سلكين بطول ١ سم بحيث يلمسا الماء في وقت واحد وان لا يلمس أحدهما الأخر .

releases sonorous alarm in case of contact with water. This device will indicate water main burst, overflow washing-machines, full baths, etc. The sensor may be connected through a longer cable. Operating voltage: approx. 6...9V.
This board should be equipped according to the parts list and the board diagram. At the two connections "F" have to be soldered two bare wires in a distance of approx. 1 cm. Whenever these two wires will dip into water at the same time, there will sound an audible tone out of the loudspeaker. Both sensors could be connected through a longer insulated cable (max. approx. 3 meters) with the printed board. Please take care that the two sensor wires have been well insulated against each other at the tip of the extension cable! Even light contact resistance caused by humidity will release the alarm. In case of bad isolation there will sound rapid and repeating clicks in the loudspeaker. If the bare sensor wires have no contact with water, the device will hardly require current (‹ 3 µA). Therefore, the water detector could be operated through a battery. The loudspeaker must not be installed into a completely closed case since otherwise a sufficient volume cannot be reached. Please use a case which has at least one hole with a diameter of 3 mm in the mounting area.





LAYOUT AND TOP VIEW



CIRCUIT DIAGRAM

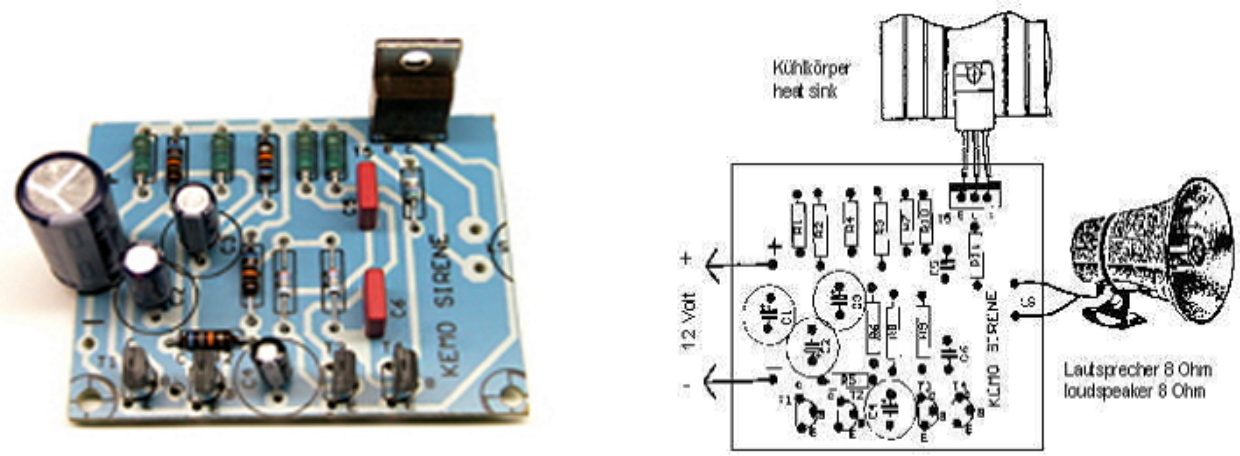
12- Martin Siren German police siren 12V max. 15W No. B077 سرينة البوليس الألماني

دائرة سرينة البوليس الألماني بقدرة قصوى ١٥ وات وتعمل مع السماعات من ٨ اوم إلى ١٦ اوم وتعطي الدائرة ١٥ وات مع السماعة ٨ اوم و ٧ وات مع السماعة ١٦ اوم .

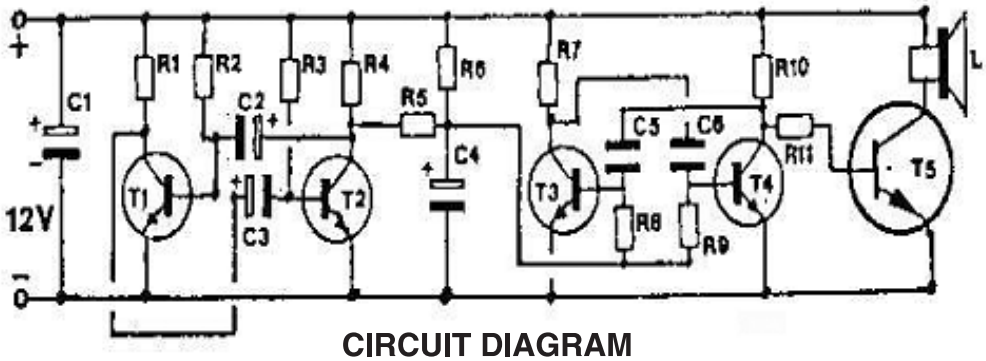
Especially high-powered siren with the tune similar to the German police siren: tutu...tutu...tutu. For loudspeaker connection: 8...16 Ohm Forbidden to be used for road traffic!

Please take special care that you carry out correct equipment of the printed board! The siren will achieve at an 8 Ohm loudspeaker max. 15 Watt. In case this high volume won't be required, it is possible to use any loudspeaker with a higher impedance. With a 16 Ohm loudspeaker the siren will achieve approx. 7 Watt, with a 32 Ohm loudspeaker e.g. 4 Watt. It is feasible to connect several loudspeakers in series, e.g. to increase the impedance (2 loudspeakers each with 4 Ohm connected in series will show a total connecting impedance of 8 Ohm). Furthermore, it is feasible to connect in series with a wire wound resistance of 4...100 Ohm a loudspeaker, in order to reduce the volume. The siren has, depending on the loudspeaker impedance, a current consumption of 0,3...2 Ampere. The current supply must, consequently, be sufficiently powerful (power supply or car-accu). Never use small dry batteries! Moreover, the loudspeaker should be prepared for the power of the siren. Too weak loudspeakers may burn out!!!

The Darlington transistor T5 must be screwed on a small heat sink (approx. 50 x 50 x 15 mm). The kit does not contain the heat sink. The heat sink has to be mounted insulated and well ventilated (it must not get into contact with other conductive metal piece parts!). In case of installation into a closed case (e.g. Kemo G082), holes for ventilation must be drilled above the heat sink. The holes must have a size of approx. 3 mm. You have to drill enough holes so that a sufficient ventilation is guaranteed.



LAYOUT AND TOP VIEW



CIRCUIT DIAGRAM

13- Lie-detector No. B087 دائرة كشف الكذب

في حالات الكذب أو الخوف فأنة يحدث توتر في بشرة الشخص تقوم الدائرة بالإحساس بها و توضيحها . جهد التشغيل للدائرة ٤,٥ فولت . ويجب التأكد من تجميع ووضع المكونات على الدائرة بصورة صحيحة . ولابد من توصيل قطعتين من النحاس بأسلاك طولها ٢ متر و لحامها على اللوحة المطبوعة ويتم لصق القطعتين النحاسية على البشرة على مسافة ٥ سم من بعضهما وضبط المقاومة المتغيرة بحيث يكون ال LED مطفئ فإذا حدث أي توتر للشخص تزداد المسافة بين القطعتين النحاسية و يضيء ال LED .

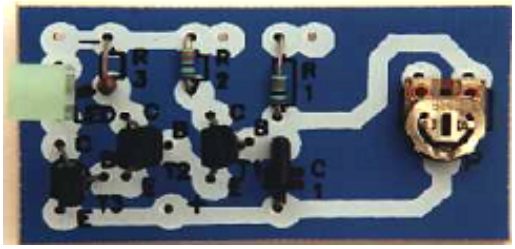
This lie-detector meters fluctuations of the skin tension and indicates those through LED. Emotional changes of man might result in a fluctuation of the skin tension (sweat), so that lies, fears, etc., may be detected.

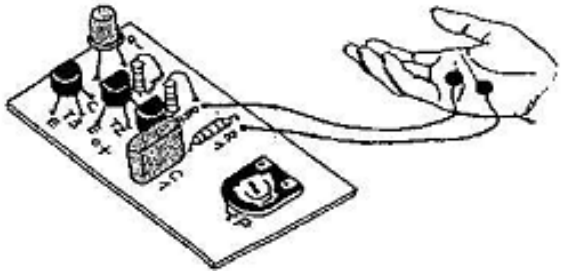
Operating voltage: 4,5 volts.

Please make sure that the light-diode is installed properly. The cathode-connection is the shorter wire.

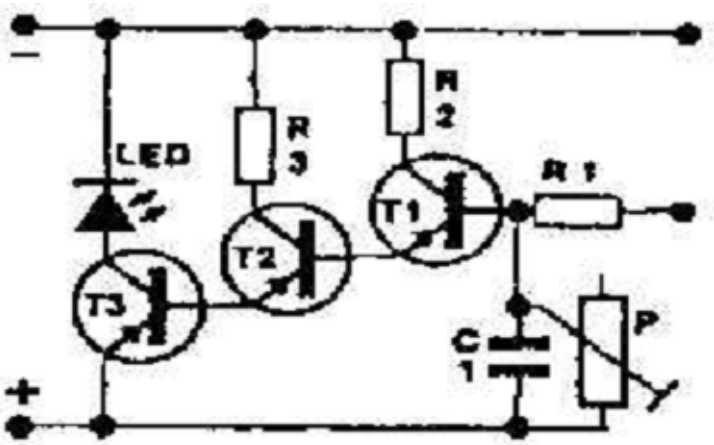
2 coins of copper are to be connected to approx. 2 m long cables and soldered to the board- connections "skin sensor". Fix the coins with adhesive plaster on the skin at a spacing of approx. 5 cm. Upon connecting the battery, the lie-detector is to be adjusted by the trimmer poti in a position where the LED just stopped lighting. If now the skin resistance is lowered due to slight perspiration, the LED will start lighting. Each minor change of the skin resistance can be detected by this instrument. Since lying leads to so-called emotional changes inside the body and, therefore, reacts by changing the skin resistance, it is possible to detect a lie. With some patience many interesting experiments and games may be carried out.

We would like to mention that the voltage and currents in use during these experiments are absolutely harmless.





LAYOUT AND TOPVIEW



CIRCUIT DIAGRAM

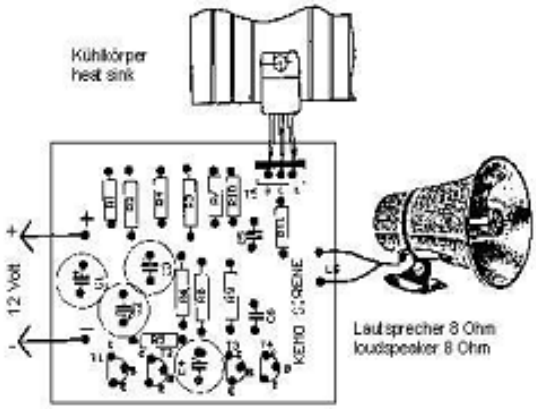
14-CO jack siren 12V 15W NO. B091 سرينة الكوجاك

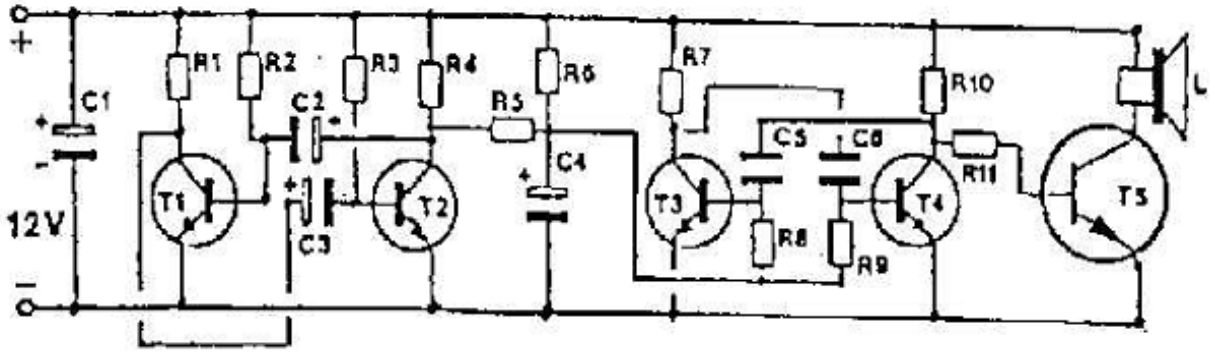
الدائرة تصدر صوت سرينة الكوجاك وتعطي قدرة ١٥ وات مع السماعات ٨ اوم و ٧ وات مع السماعات ١٦ اوم و ٤ وات مع السماعات ٣٢ اوم . ويجب تبريد الترانزيستور T5 . جهد التشغيل للدائرة ١٢ فولت .

Especially audible siren, in rapid sequences rising up and reducing sound (like the one used in Co jack police cars). Due to the high operating frequency the sound will become extremely aggressive and widely audible! For loudspeakers from 8...32 Ohm. Forbidden the use in traffic Please take special care that you carry out correct equipment of the printed board! The siren will achieve at an 8 Ohm loudspeaker max. 15 Watt. In case this high volume won't be required, it is possible to use any loudspeaker with a higher impedance. With a 16 Ohm loudspeaker the siren will achieve approx. 7 Watt, with a 32 Ohm loudspeaker e.g. 4 Watt. It is feasible to connect several loudspeakers in series, e.g. to increase the impedance (2 loudspeakers each with 4 Ohm connected in series will show a total connecting impedance of 8 Ohm). Furthermore, it is feasible to connect in series with a wire wound resistance of 4...100 Ohm a loudspeaker, in order to reduce the volume. The siren has, depending on the loudspeaker impedance, a current consumption of 0,3...2 Ampere. The current supply must, consequently, be sufficiently powerful (power supply or car-accu). Never use small dry batteries! Moreover, the loudspeaker should be prepared for the power of the siren. Too weak loudspeakers may burn out!!!

The Darlington transistor T5 must be screwed on a small heat sink (approx. 50 x 50 x 15 mm). The kit does not contain the heat sink. The heat sink has to be mounted insulated and well ventilated (it must not get into contact with other conductive metal piece parts!). In case of installation into a closed case (e.g. Kemo G082), holes for ventilation

must be drilled above the heat sink. The holes must have a size of approx. 3 mm. You have to drill enough holes so that a sufficient ventilation is guaranteed.





CIRCUIT DIAGRAM

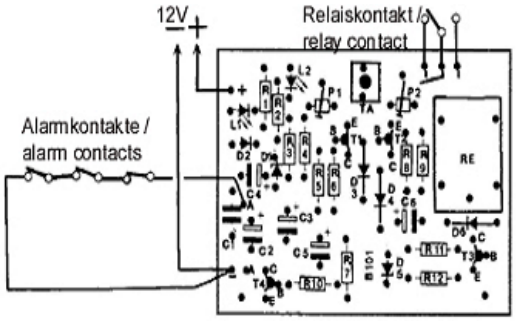
15- Universal Alarm System For car, boat, house, garden, yard No. B101

نظام إنذار عام للسيارة أو المنزل أو الحديقة

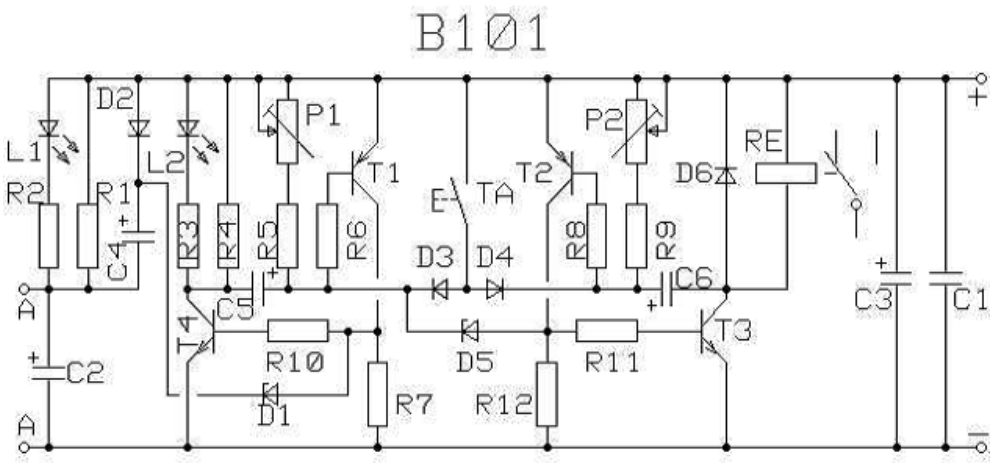
جهد التشغيل للدائرة ١٢ فولت و توضيح الإنذار من خلال LED . اكبر عدد نقاط توصيل ٢٠ نقطة مدة توضيح الإنذار من ٢ ثانية إلى ١٥ ثانية . ويجب تجميع الدائرة بطريقة صحيحة ومن الممكن توصيل اللوحة المطبوعة الواحدة بنقطة توصيل واحدة أو اكثر .

Professional alarm unit for 12 Volt. Connecting features: max. 20 rest contacts. Contact control and alarm indication via LED's. Adjustable rise-delay time and alarm duration: approx. 2...15 seconds and 8...30 seconds, in accordance with the police law.
Please pay attention to the right assembly of the board. All transistors and LED's have one flattened side which must correspond to the print on the board. The "K"-connection of the diodes is marked with a ring. One or more rest alarm contacts can be connected with this alarm unit. Normally the contacts must be closed. If all contacts are closed the LED "L1" lights. If one of the contacts is opened or if the cable which leads to the contacts is cut the alarm will be released. At first the second LED "L2" lights as "alarm indication".
This LED lights during the adjusted rise-delay time. During this time no alarm is given. During the delay time the alarm can be switched off through pressing the key "TA". After expiry of this rise-delay time the relay picks up and releases the alarm for approx. 9...30 sec. (adjustable). After that an alarm is only released again if the rest contacts were closed again and opened once again. This corresponds to the requirements by the

legislator. Operating voltage: 12 Volt = approx. 40...100mA (quiescent and alarm condition). The alarm system also reacts if the rest contacts were only opened for a short moment and then immediately closed again. So-called "reed contacts" are very suitable as contacts. These are switches which are closed when approaching to a magnet and which switch off when moving away from the magnet and thus releasing the alarm. For example the magnet will be fastened at the leaf of a window or door and the reed contact is fastened at the frame. Then if the door or the window is opened the magnet moves away from the contact and the alarm is released. Fine trip wires can also be tensed. If these are ripped up the alarm also releases. (Securing of properties, paths, pictures etc.).



LAYOUT AND TOP VIEW



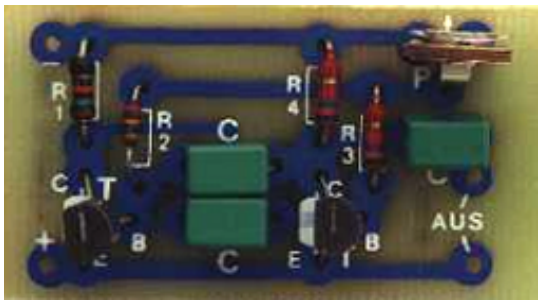
CIRCUIT DIAGRAM

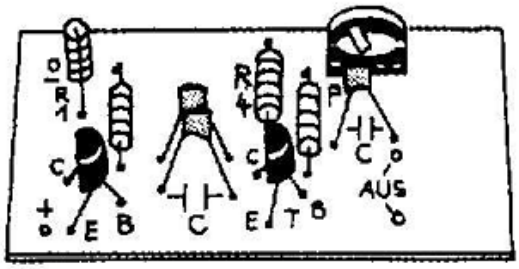
16-Tone generator 6...12V No. B103 دائرة مولد ذبذبات

النطاق الترددي الذي تنتجه الدائرة من ١ كيلو هيرتز إلى ٥٠ كيلو هيرتز . وجهد التشغيل من ٦ فولت إلى ١٢ فولت والدائرة تنتج نغمة موجة مربعة (Square wave) . وتستخدم كمصدر للإشارة (signal source) لاختبار دوائر التكبير والراديو والدوائر السمعية .

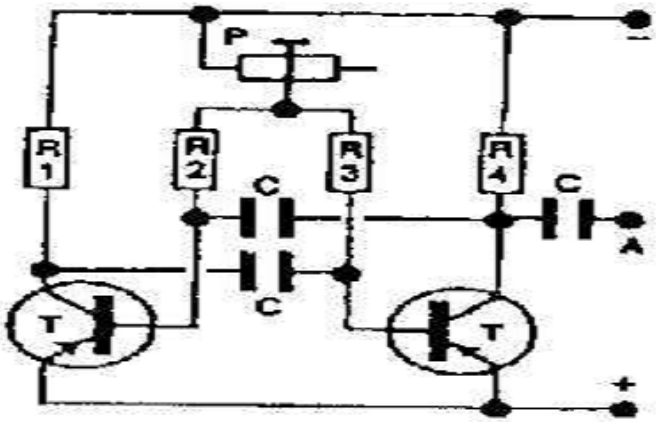
Adjustable frequency: approx. 1...50 kHz. Operating voltage: 6...12V. Short-circuit proof and capacitive output. This multi vibrator produces the tone as square-wave signal. Usage: As signal source in order to test amplifiers, radios, phono devices, etc. The harmonic waves will reach just into the VHF-range.
This tone generator works with the standard-multi vibrator circuitry. Especially suitable for operation will be a small 9V battery. It is feasible to connect at the output a highly ohmic earphone. Or, it is possible to connect the output with an amplifier, radio, tape-

recorder, etc. Due to the abundance of harmonic waves of this circuitry it is also possible to feed the signal e.g. at the antenna of the radio or into the i.f. section. Then, it will also get to the loudspeaker.





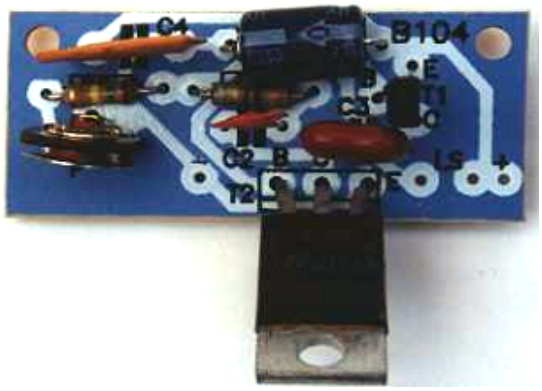
LAYOUT AND TOP VIEW

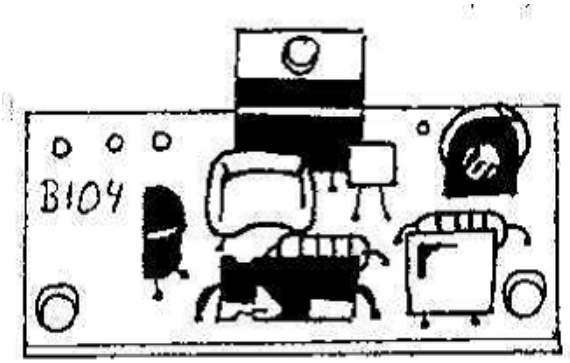


17- Ship siren No. B104 سرينة السفن

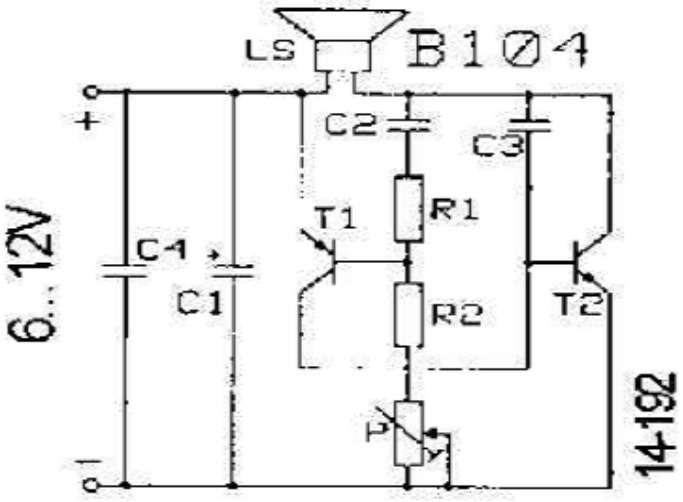
هذه الدائرة تنتج صوت مرتفع وثاقب وهي مناسبة كدائرة إنذار وكجرس للباب . جهد التشغيل من ٦ فولت إلى ١٢ فولت .أقصى قدرة للدائرة ٥ وات مع السماعات ٨ اوم .

produces a loud, deep hooter tone similar to those of the big vessels. Also suitable for alarm-systems, door bells etc. For 6...12 Volt. Loudspeaker socket: 8 Ohm, max. 5W Mounting instructions: Please pay attention to right installation of the electrolytic capacitor C1 (+ and -). The power transistor T2 must be screwed on a small cooling plate (approx. 5 x 5 cm, not included in the kit). The cooling plate must not touch any other metal parts, as it is electrically connected with the collector of the transistor T2 and may trigger short-circuits. The tone pitch can be adjusted by using the trimming potentiometer. However, the tonality depends very much on the used loudspeaker and on the kind of installation of the loudspeaker. Please use a large loudspeaker if possible and install it according to one of our proposals.
Short-circuits and overload can damage the transistors!





LAYOUT AND TOPVIEW



CIRCUIT DIAGRAM

TOP VEIW

18- Robot-voice No. B107 دائرة تصلر صوت الإنسان الآلي

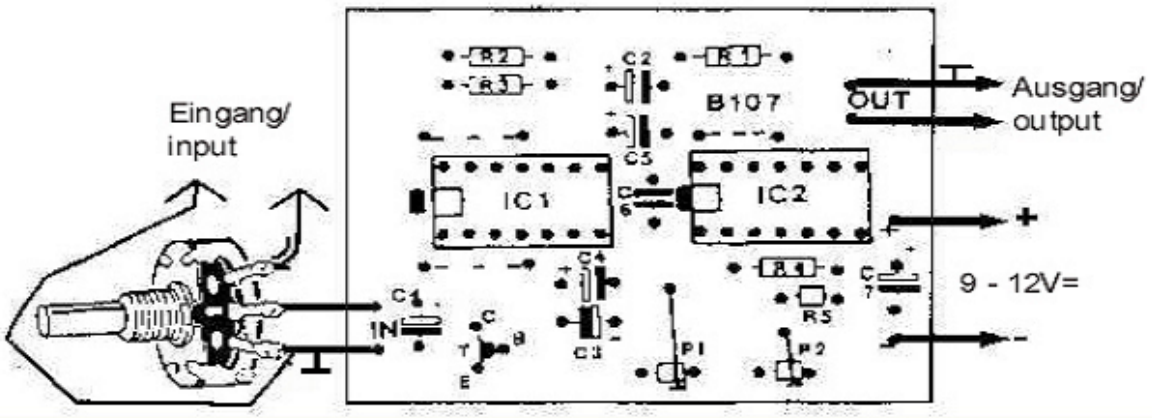
يجب أن توصل الدائرة بين الميكروفون ودائرة التكبير . جهد التشغيل للدائرة من ٩ فولت إلى ١٢ فولت كما يمكن التدخل في الصوت الناتج من خلال المقاومة المتغيرة P1 وتغيير ترددها من خلال P2 .

alternates the introduced speech so that it sounds like the voice of a robot. Adjustable effects. The device should be connected between the microphone and amplifier (or tape recorder). Operating voltage: 9...12V.

Please place the IC's in the sockets after having finished the mounting, and take care not to touch the junction wires (MOS-IC's have a high static sensitivity!). The notch at the IC's has to coincide with the print on the board! At the input should be placed either a microphone or any other signal (e.g. tape recorder), connecting afterwards the output with a final amplifier. Please take care that all earth connections are placed at the correspondingly marked poles

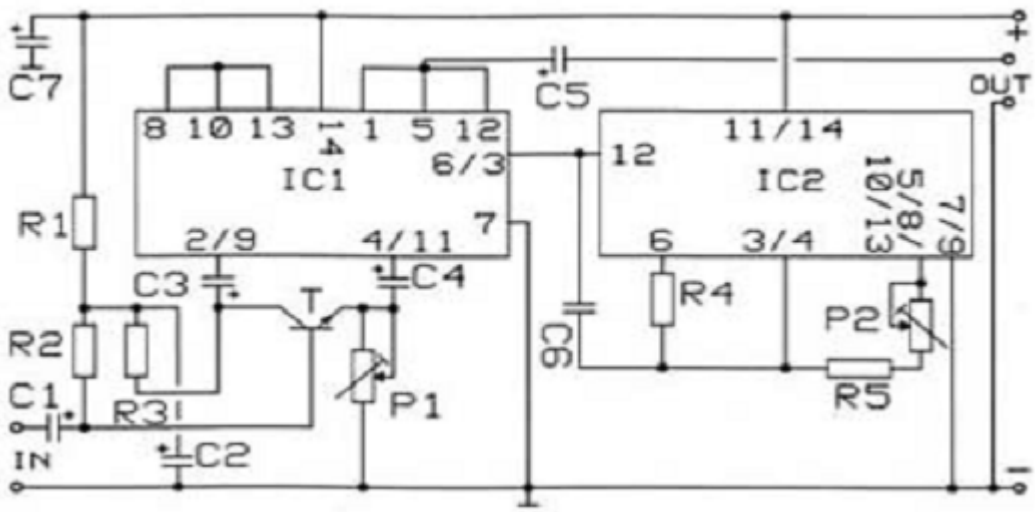
Through the trimmer potentiometer P1 regulation of intensity (cross talk) and through P2 regulation of frequency is feasible. Please keep the wires between the board and potentiometer as short as possible in order to avoid humming and interferences. We recommend also to mount the device into a metal housing and to earth the housing. Please do not forget the three wire bridges on the printed circuit board! (Marked with dotted line.)

LAYOUT



Mit dem Poti 10 K kann die Lautstärke geregelt werden (nur wenn nötig).
Das Poti ist nicht im Bausatz enthalten.
With the potentiometer 10kOhm volume can be adjusted (only if necessary).
The potentiometer is not included in the construction set.

TOP VIEW

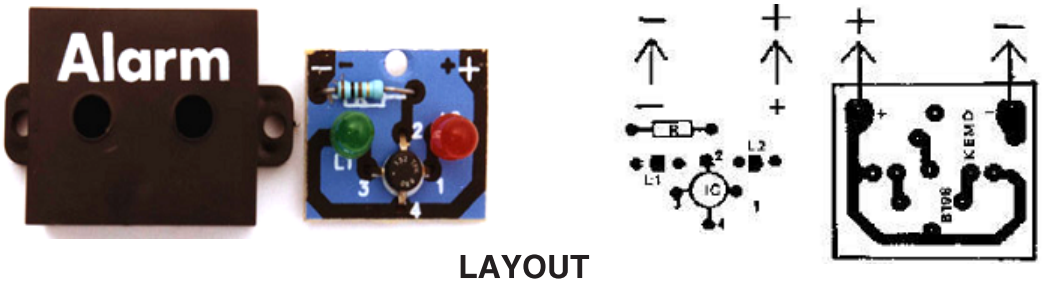


CIRCUIT DIAGRAM

19- Alarm Display No. B198 دائرة توضيح وجود جهاز إنذار

توضع هذه الدائرة لخداع اللصوص حيث أنة عند رؤية هذه الدائرة يتوهم وجود جهاز إنذار. ويجد بالدائرة اثنين من ال LEDS مختلفين في اللون يضيئان بالتبادل . جهد التشغيل للدائرة من ٩ فولت إلى ١٢ فولت .

In this alarm display have been fitted 2 different colored light emitting diodes, which flash alternatively in short sequences. For use in cars, weekend-houses, etc. in order to simulate an armed alarm set.
Operating voltage: 9...12V.
Please take care when equipping the printed board that correct polarity of the light emitting diodes has been observed. One side of the light emitting diode has been slightly flattened and must indicate always towards the IC. The Special-IC has as identification one longer pin (pin 3) as well as at one pin a small hook (pin 2). The IC should be soldered following the print of the board. The connecting cables have to be soldered on the copper face of the board at the positive and negative marked soldering spots. The ready board could be fitted into the enclosed housing from the backside and could be stacked fast. The operating voltage is about 9...12V and may not exceed max. 14 Volt! With higher voltages the IC and the LED's will be destructed! The small picture "Alarm" could be cut out and be stacked with adhesive tape at the window of your car.



LAYOUT

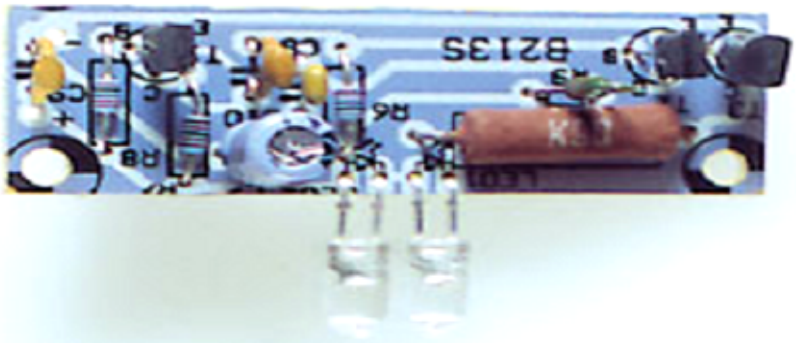
TOP VIEW

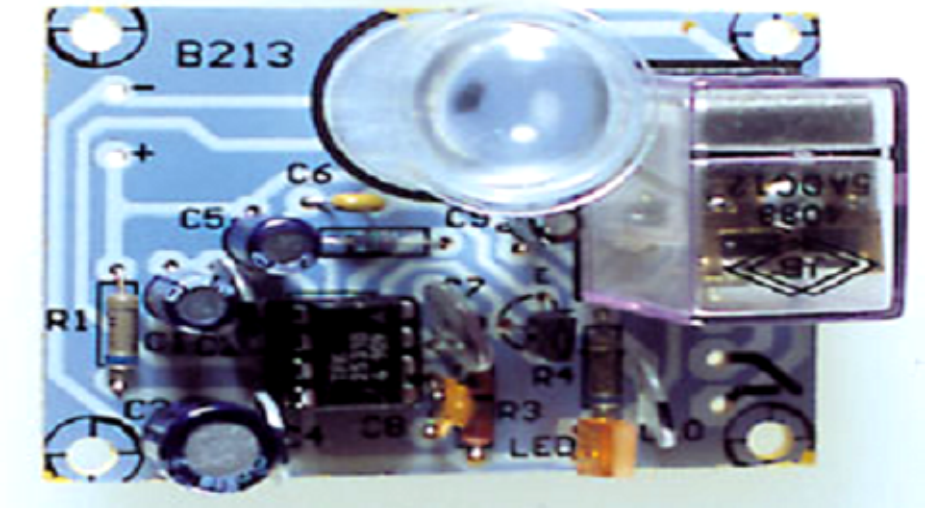
20- Infrared light barrier max. 50m No. B213 دائرة مانع ضوئي ٥٠ متر

دائرة مانع ضوئي كالسابقة وتستخدم كدائرة إنذار ولكن لها مدى أطول وهو ٥٠ متر .

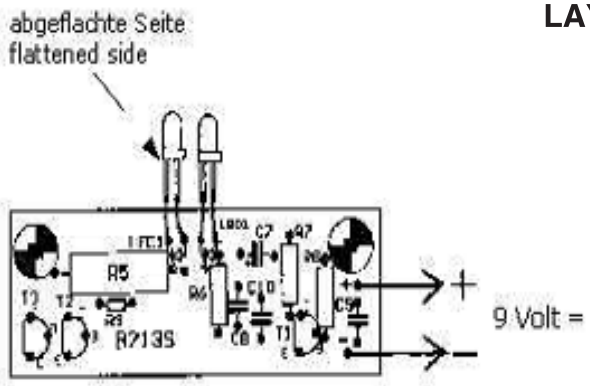
With the enclosed optics and highly sensitive photo detector this light barrier has a max. range of up to 50m! The infrared light ray is invisible for men. If the light ray between the transmitter and receiver is interrupted (if a person walks through it) the relay in the receiver switches. Operating voltage: transmitter: 9..12V= approx. 70mA, receiver 12V= approx. 100mA. Relay contact: 1 x change over 3A.
Both boards have to be tipped. The phototransistor of the receiver is inserted into the board up to the limit stop (please pay attention to the correct polarity, one side of the phototransistor is flattened). The lens optic is stuck on the board in such a manner that the phototransistor is located in the center of the diameter of the lens (in the focus). The receiver requires an operating voltage of 12V= (approx. 100mA) and the transmitter approx. 9V= (max. 70mA). Please use batteries or power units which are powerful enough (the small 9V compound batteries are too weak and not suitable!) It would be the best if you use 2 stabilized connector power units with 9V= and 12V= output voltage each.

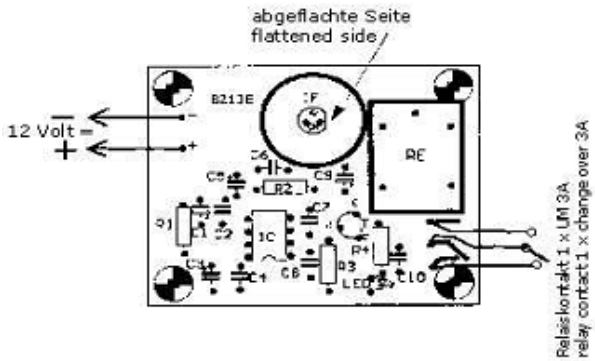
In order to protect the phototransistor from lateral incidence of light, a plastic or cardboard tube must be slid over the optics. The inside of the tube must be stained black. Furthermore the cardboard tube must prevent the incidence of light from all directions with the exception of the front. Then the transmitter must be adjusted in such a manner that it radiates through the black tube on the optics exactly from the front. The greater the distance from the transmitter to the receiver, the more exactly the transmitter must be aligned on the receiver. If the transmitter meets the receiver, the light emitting diode at the receiver lights and the relay switches on.

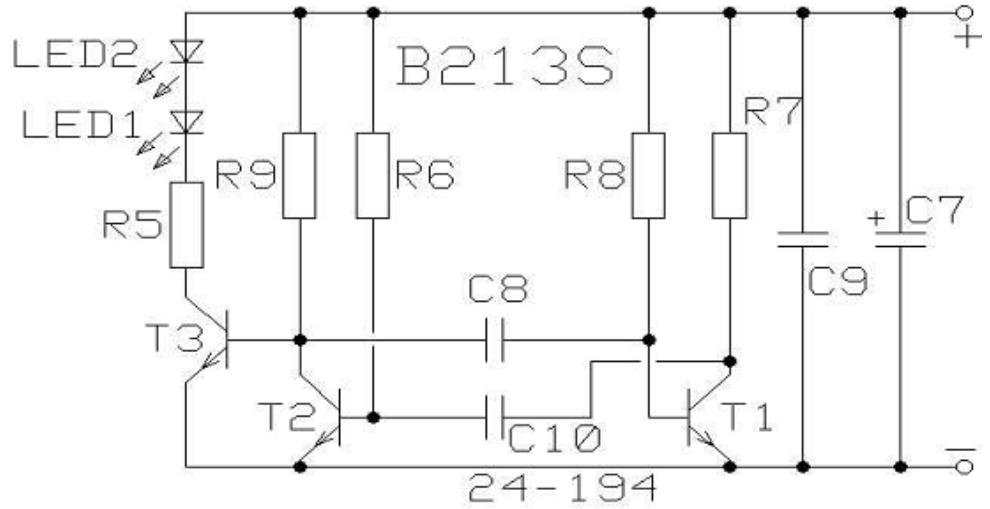




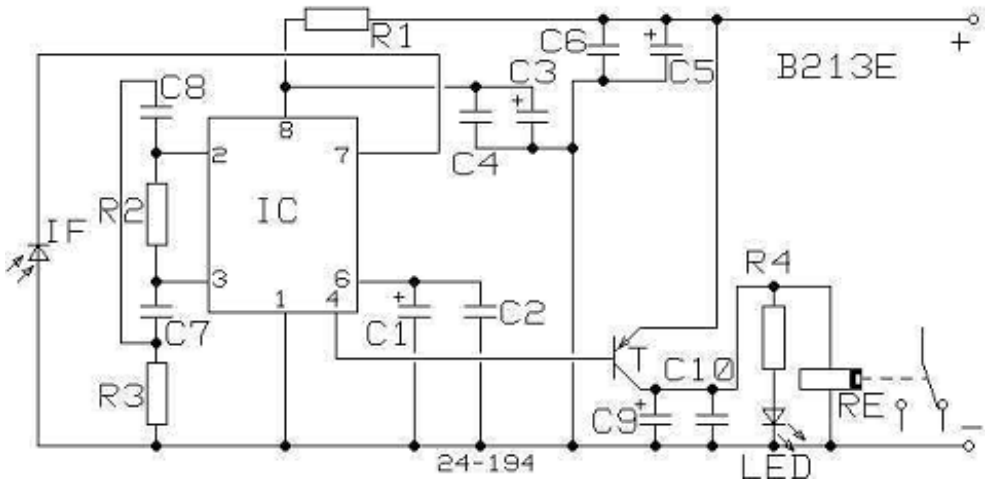
LAYOUT







CIRCUIT DIAGRAM



CIRCUIT DIAGRAM

21-Ultrasonic Distance Alerter/Alarm System NO.B214 دائرة إنذار بالأشعة فوق البنفسجية

تعطي الدائرة إنذار إذا اقترب أي جسم من الدائرة على مسافة من ١٠ سم إلى ٨٠ سم و لذلك يمكن استخدمها في أماكن انتظار السيارات وفي الأماكن التي يمنع الاقتراب منها ولتمييز الأغراض في خطوط التجميع و كدائرة إنذار ضد السرقة للأغراض الكبيرة . جهد التشغيل من ٩ فولت إلى ١٢ فولت . والدائرة تعمل بناء على مبدأ ارتداد الإشارات الصوتية من الأجسام التردد الذي تنتجه الدائرة ٤٠ كيلو هيرتز .

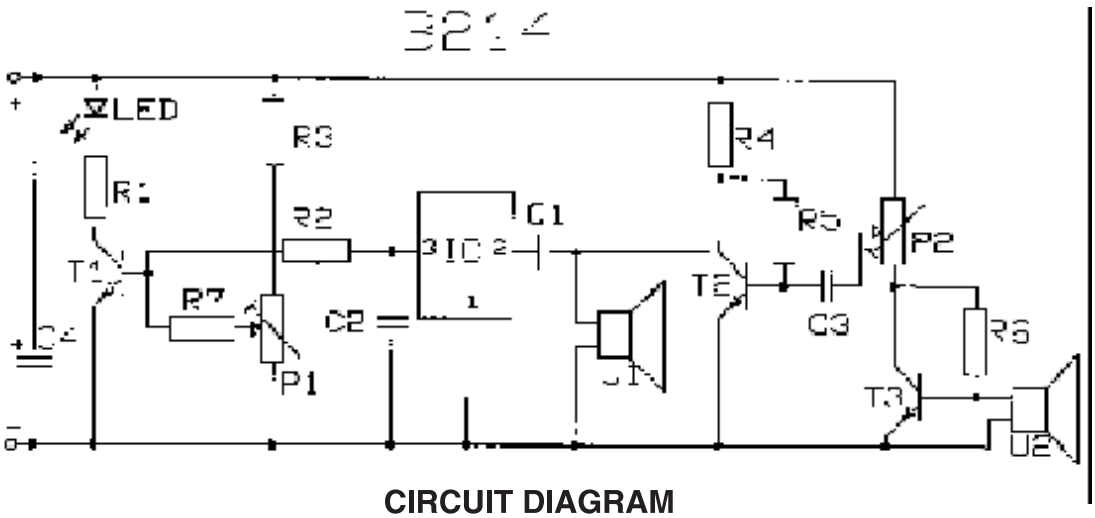
An LED lights up if a body approaches the ultrasonic sensors at a distance of 10...80 cm. Use: parking-in assistance for cars in garages, alarm signal for persons or animals staying in a certain area, object recognition at assembly lines, theft monitoring for larger objects etc. Operating voltage: 9...12V. The device works according to the same principle as the ultrasonic echo ranging of bats The board has to be equipped according to the parts list and the assembly print. Please do not mix up the two ultrasonic sensors. Type "R..." is the receiver and type "0..." the ultrasonic transmitter. The sensor heads have to be installed in such a manner that they may radiate freely (the

angle of radiation must not be impeded lateral or in front through proud plates etc.). Furthermore the sensors have to be insulated against structure-borne noise. This may be done best by storing the sensors in rubber or foam rubber. Between the case and the sensors there should be a layer of rubber or foam rubber which is at least 3mm thick. Of course, no rubber or foam rubber may be present in the direction of radiation (in front)! Wrong installations reduce the maximum radius of action!

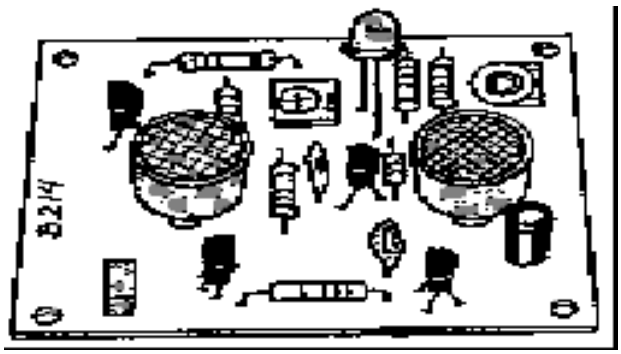
When adjusting the first time, there should be no objects in front of the sensors, i.e. at least 2m empty space. After feeding the operating voltage, at first turn the trimming potentiometer P2 to the right stop. Then adjust the trimming potentiometer P1 in such a manner that the LED lightens. Now turn back P1 until the LED just switches off.

Now you may adjust the sensitivity with P2. If you approach the sensors with a large object (e.g. wooden plate 50x100cm), the LED lights up. With large, flat objects, the radius of action is the highest. Smaller objects or uneven surfaces reduce the radius of action. If you want to use the device as parking-in assistance for your car, install the device at the wall of the garage, approximately at the height of the bumper. The LED can be fixed in a suitable place via a long cable. If now you approach the sensors with the bumper, the LED will light up as from a certain distance.

The device functions according to the principle of the sound reflection through objects. The more the objects can reflect the sound, the better will be the radius of action. Actual frequency: approx. 40kHz.



CIRCUIT DIAGRAM



TOP VIEW

22- Smoke Alarm 12V= No. B217 دائرة إنذار ضد الدخان

هذه الدائرة تعمل باستخدام المانع الضوئي للأشعة تحت الحمراء فعندما يمر الدخان أمام ال sensor يقفل دائرة الإنذار . جهد التشغيل للدائرة ١٢ فولت وتيار الدخل ١٥٠ ملي أمبير .

This visual smoke alarm switches a relay if thick smoke gets between the installed infrared light barrier. Sirens, alarm lamps etc. may then be switched by means of the relay. Operating voltage: 12V=, max. 150mA.

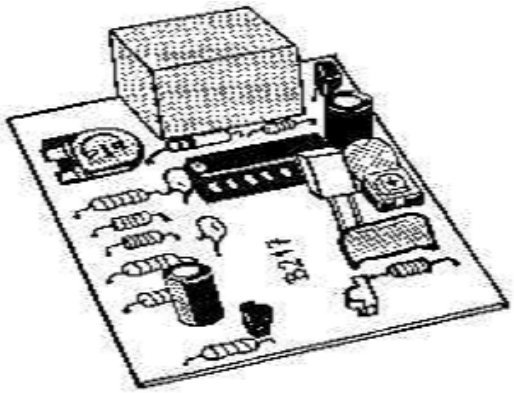
Assembly instructions: The board has to be assembled according to the parts list, board assembly plan and assembly drawing. Please pay attention to insert the electrolytic capacitors, LED's and components of the light barrier (T1 + D2) in the correct direction into the board (see drawings). The components T1 + D2 of the light barrier have one swelling each on one side of the case. On the board these "swellings" have to point at each other.

Setting into operation: The board is operated with a stabilized direct voltage of 12V. A stabilized power supply with a minimum output of 150mA (or more) should be used for this purpose. Simple and not stabilized power supplies must not be employed! The board has to be protected from outside light. For this purpose the board has to be installed in a case in such a manner that smoke can penetrate into the case and escape from it again. At the same time no outside light (e.g. from a lamp hanging nearby) must shine on the phototransistor T1. When employing the case no. "Kemo G024" recommended by us (not enclosed to the kit), the smoke holes should be drilled according to the mentioned drawing. The side holes (approx. 5 mm) have to be drilled as deep as possible into the bottom of the case. This way they will be below the board and the light will not reach the phototransistor. Smoke penetrating through these holes may escape through them again. The admission openings for smoke should be drilled at the top or at the side (behind the relay) into the upper part of the case. Please make sure that no lamp or sunlight shines directly on the phototransistor through these holes. Many holes (> 6 peaces) with a relatively large diameter (> ٦ ط mm) should be drilled into the upper part of the case. In our example (according to the drawing) we assumed that the Smoke Alarm will be mounted at the ceiling. If you want to install the Smoke Alarm somewhere else, you might have to drill the holes in another way.

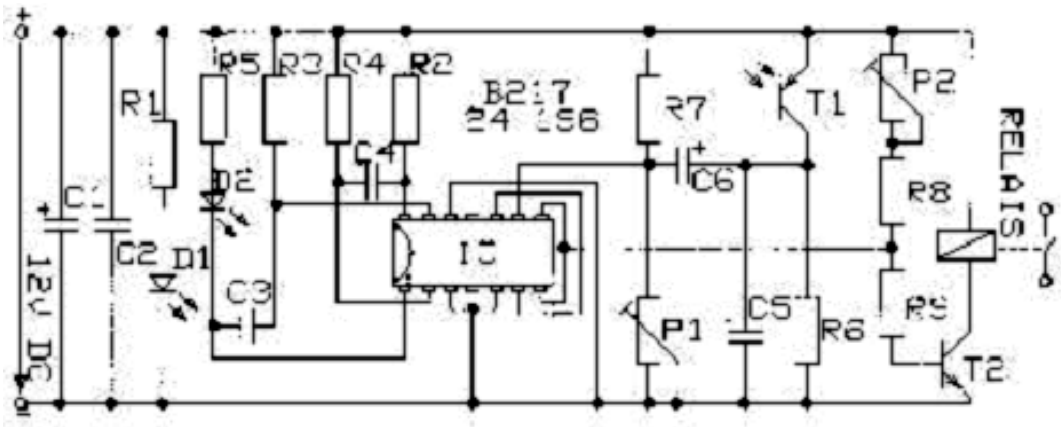
Attention: This Smoke Alarm is a circuit for instruction and amateur purposes. It is not suitable for use as smoke alarm for the protection of property and life! The circuit does not react or hardly reacts to "thin" smoke like e.g. cigarette smoke. So to try out you should use heavy and thick smoke.

Adjustments:

The Smoke Alarm can be adjusted if the board is equipped and operational and the operating voltage of 12V= is fed. The LED "D1" shines continuously as long as the operating voltage is fed (power control). Turn the trimming capacitor "P1" to the left stop and trimming capacitor "P2" to the right stop. Turn the trimming capacitor "P1" slowly to the right until the relay picks up with an audible "clack". Now turn the trimming capacitor "P1" slowly a little back again until the relay switches off again. (You will hear "clack" again). If now you tap with your finger between the light barrier (between D2 and T1), the relay has to pick up and release again (click – clack). Now the sensitivity can be increased by turning the trimming capacitor P2 to the left. It might be necessary to readjust the trimming capacitors a little until the optimum position is found. The best way to simulate smoke is to hold a milk glass plane or milky colored plastic foil between the light barrier. The relay has to react with a clear "click-clack" when putting the foil in between and removing it. In order to test the Smoke Alarm it is also possible to produce thick smoke by burning oil or plastic waste.



TOP VIEW



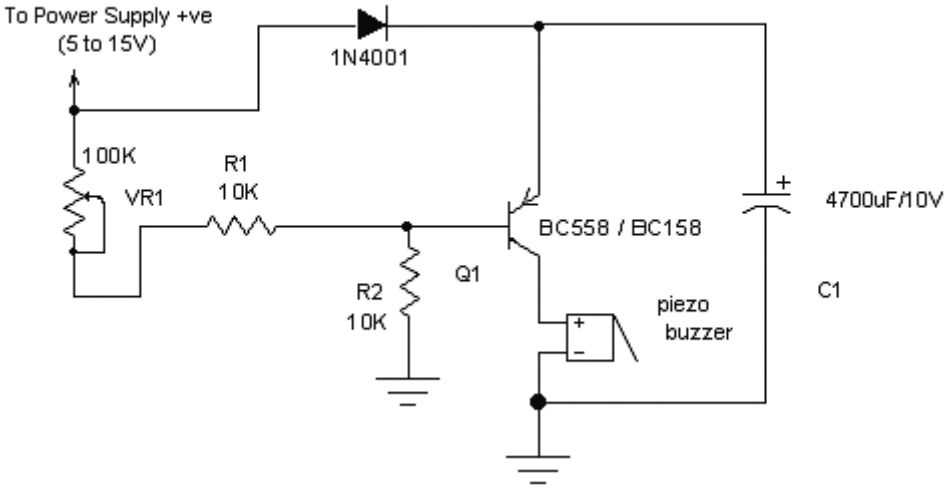
CIRCUIT DIAGRAM

OTHER CIRCUITS

1- Power supply failure alarm دائرة إنذار ضد سقوط مصدر القدرة

معظم دوائر الإنذار الخاصة بمصر القدرة تحتاج إلى مصدر قدرة منفصل لتشغيلها ولكن هذه الدائرة لا تحتاج إلى ذلك لان بها مكثف كيميائي يقوم بتخزين شحنة كافية لتشغيل الدائرة . وتستخدم هذه الدائرة مع مصادر القدرة من ٥ فولت إلى ١٥ فولت .ولضبط الدائر نقوم بتوصيلها مع مصدر القدرة ثم نقوم بتغيير المقاومة المتغيرة VR1 حتى يتغير ال BUZZER من ال ON إلى ال OFF .

Most of the power supply failure indicator circuits need a separate power supply for themselves. But the alarm circuit presented here needs no additional supply source. It employs an electrolytic capacitor to store adequate charge, to feed power to the alarm circuit which sounds an alarm for a reasonable duration when the supply fails.
This circuit can be used as an alarm for power supplies in the range of 5V to 15V.
To calibrate the circuit, first connect the power supply (5 to 15V) then vary the potentiometer VR1 until the buzzer goes from on to off.
Whenever the supply fails, resistor R2 pulls the base of transistor low and saturates it, turning the buzzer ON.

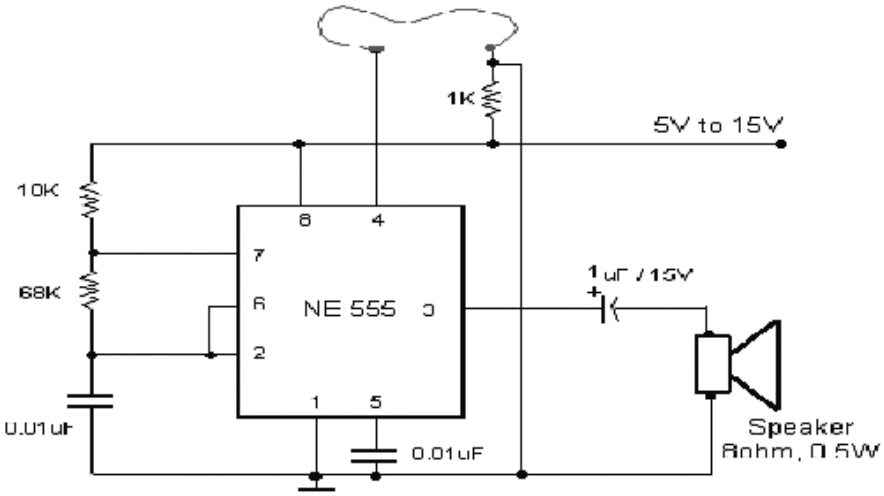


2-Theft preventer alarm دائرة إنذار ضد السرقة

هذه الدائرة تحمي مستخدمها من سرقة أمتعته أو من أن يدخل لص منزلة . ويعمل الإنذار في حالة قطع سلك رفيع جدا جدا . وتستخدم الدائرة المتكاملة NE555 لإنتاج نغمة مترددة ١ كيلو هيرتز والتي تحدث صوت عالي . جهد التشغيل للدائرة من ٥ فولت إلى ١٥ فولت.

This circuit utilizing a 555 timer IC can be used as an alarm system to prevent the theft of your luggage, burglars breaking into your house etc. The alarms goes ON when a thin wire, usually as thin as a hair is broken. The circuit is straightforward. It uses a 555 IC wired as an astable multi-vibrator to produce a tone of frequency of about 1kHz which gives out a shrill noise to scare away the burglar. The wire used to set off the alarm can be made of a thin copper wire like SWG 36 or higher. You can even use single strands of copper form a power cable. The circuit operates on a wide range of voltages from 5V to 15V.

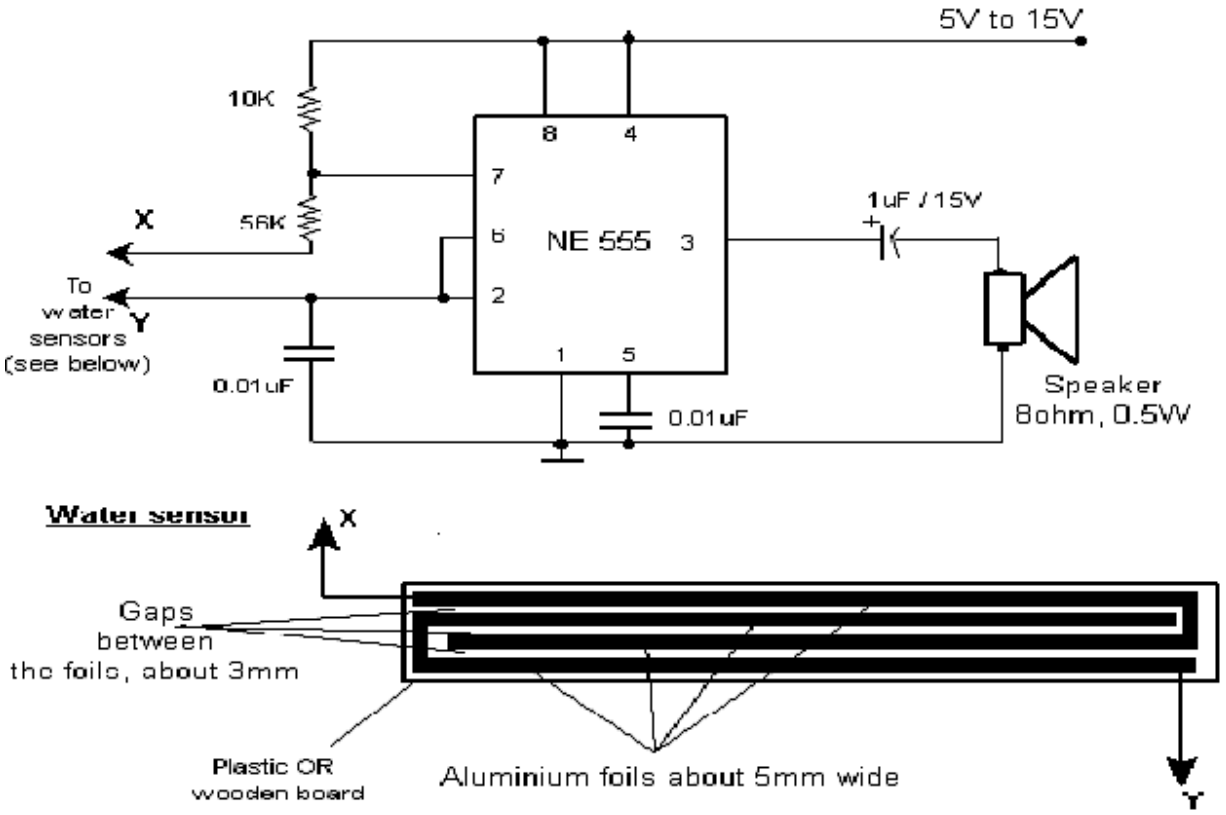
The speaker and the circuit could be housed inside a tin can with holes drilled on the speaker side for the sound to come out.



3- Rain Alarm دائرة إنذار ضد الماء او المطر

هذه الدائرة تقوم بتشغيل الإنذار إذا ابتل ال sensor بالماء . وتستخدم هنا الدائرة المتكاملة NE 555 في إنتاج نغمة مترددة بتردد ١ كيلو هيرتز . عندما يبتل ال sensor بالماء تكتمل الدائرة مما يجعل الدائرة المتكاملة NE 555 تنتج النغمة . ويصنع ال sensor من الألمونيوم وليس من النحاس لان النحاس يحتاج إلى التنظيف بصورة دورية.

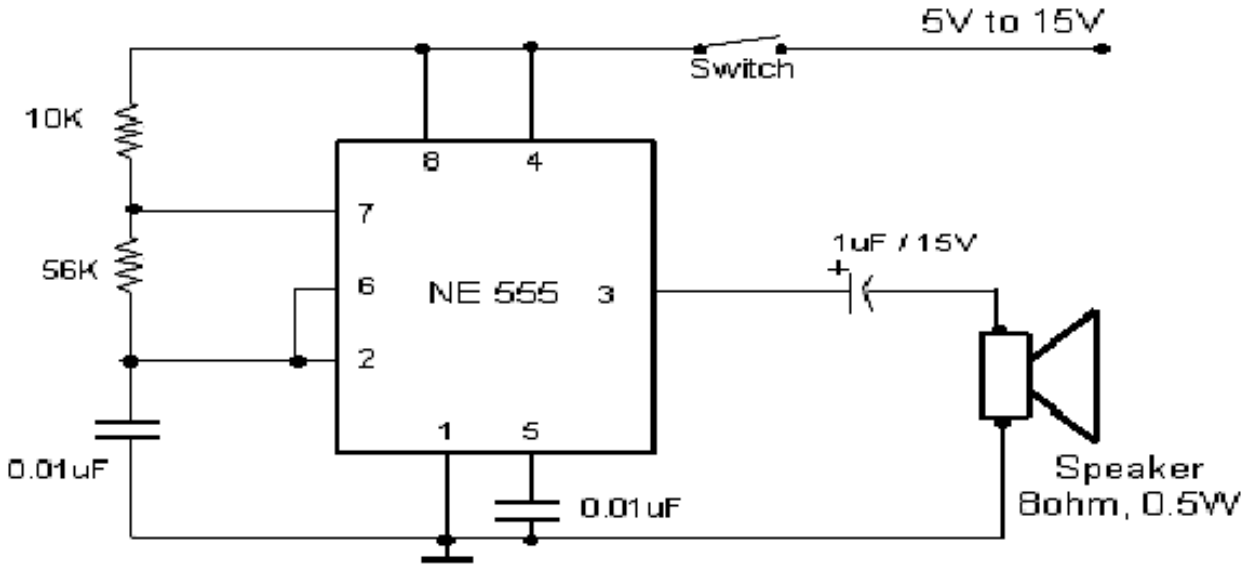
This circuit gives out an alarm when its sensor is wetted by water. A 555 astable multi-vibrator is used here which gives a tone of about 1kHz upon detecting water. The sensor when wetted by water completes the circuit and makes the 555 oscillate at about 1kHz.The sensor is also shown in the circuit diagram. It has to placed making an angle of about 30 - 45 degrees to the ground. This makes the rain water to flow through it to the ground and prevents the alarm from going on due to the stored water on the sensor. The metal used to make the sensor has to be aluminum and not copper. This is because copper forms a blue oxide on its layer on prolonged exposure to moisture and has to be cleaned regularly. The aluminum foils may be secured to the wooden / plastic board via epoxy adhesive or small screws. The contact X and Y from the sensor may be obtained by small crocodile clips or you may use screws.



4- A simple electronic buzzer دائرة جرس إليكترونى

دائرة بسيطة تتكون من الدائرة المتكاملة NE 555 حيث تعمل كمذبذب ومقاومتين ومكثفين . التردد الذي تنتجه ال ٥٥٥ يمكن تغييره بتغيير قيمة المقاومة 10k . التردد الناتج 1Khz والذي يعطي صوت الجرس عند غلق المفتاح .

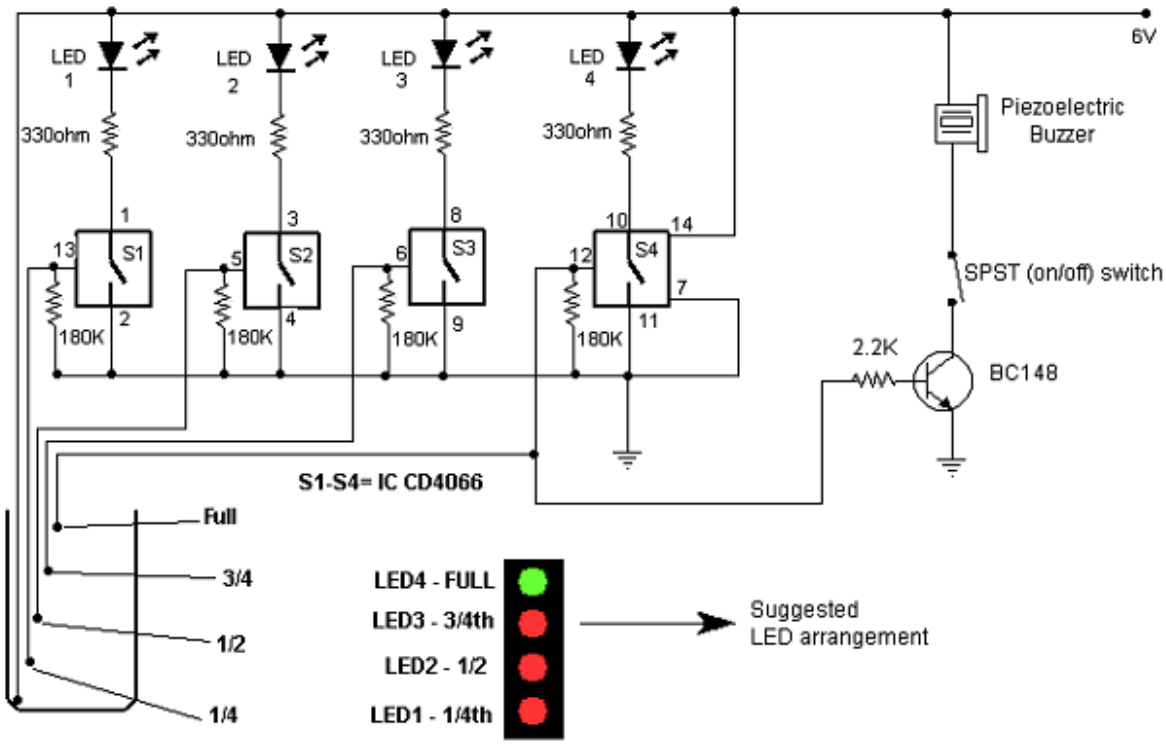
This very simple circuit just uses a couple of resistors, a capacitor and the easily available 555 timer IC.
The 555 is setup as an astable multi-vibrator operating at a frequency of about 1kHz that produces a shrill noise when switched on. The frequency can be changed by varying the 10K resistor.



5-Water Level Indicator with alarm دائرة توضيح مستوى الماء

هذه الدائرة لا تشير فقط إلى مستوى الماء في الإناء الحاوي له ولكن أيضا تعطي إنذار عند امتلاء هذا الإناء. في هذه الدائرة نستخدم الدائرة المتكاملة **CD4066** واسعة الانتشار كمفتاح ثنائي الاتجاه لتوضيح مستوى الماء من خلال **LEDs** . في حالة عدم وجود ماء في الإناء فأن السلكيين الموضوعين فيه يكونا دائرة مفتوحة و لا تعمل الدائرة ولكن في حالة وجود الماء فأن الماء يوصل بين طرفي السلك و تبدأ الدائرة بإضاءة ال **LED** الأول وكلما أرتفع مستوى الماء كلما أضاء ال **LED** التالي إلى أن يمتلئ الإناء فيكون الترانزيستور **BC148** في حالة تشبع ويطلق الإنذار .

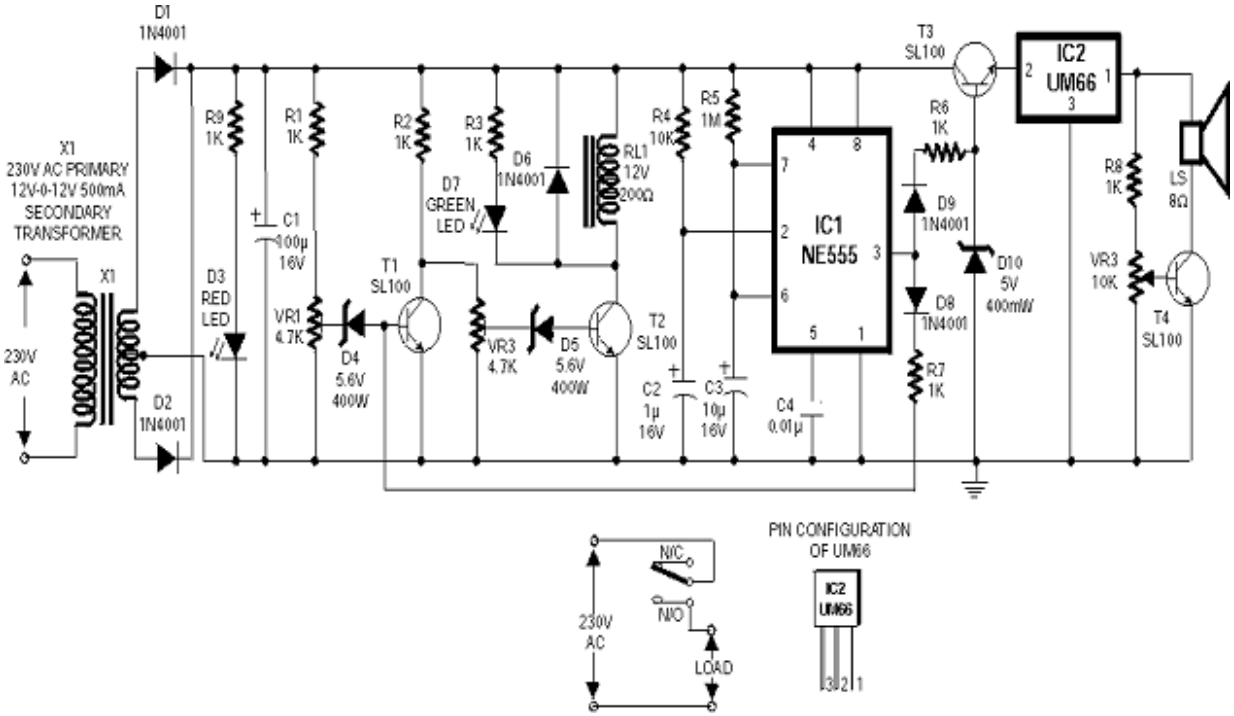
This circuit not only indicates the amount of water present in the overhead tank but also gives an alarm when the tank is full. The circuit uses the widely available CD4066, bilateral switch CMOS IC to indicate the water level through LEDs. When the water is empty the wires in the tank are open circuited and the 180K resistors pulls the switch low hence opening the switch and LEDs are OFF. As the water starts filling up, first the wire in the tank connected to S1 and the + supply are shorted by water. This closes the switch S1 and turns the LED1 ON. As the water continues to fill the tank, the LEDs2 , 3 and 4 light up gradually. The no. of levels of indication can be increased to 8 if 2 CD4066 ICs are used in a similar fashion. When the water is full, the base of the transistor BC148 is pulled high by the water and this saturates the transistor, turning the buzzer ON. The SPST switch has to be opened to turn the buzzer OFF. Remember to turn the switch ON while pumping water otherwise the buzzer will not sound!



6- Melody generator for greeting cards دائرة مولد نغمات لبطاقات التهنئة

هذه الدائرة الصغيرة تحتوي على الدائرة المتكاملة UM66 ولها ثلاثة أطراف. ومن الممكن أن تكون الدائرة حجمها صغير وتوضع داخل بطاقة التهنئة . وتعمل ببطارية مسطحة ٣ فولت. الخرج من UM66 يدخل إلى الترانزيستور للتكبير ثم إلى السماعة ويمكن أن نستخدم سماعة ٤ اوم أو السماعة المسطحة .

This tiny circuit comprising of a single 3 terminal IC UM66 can be built small enough to be placed inside a greeting card and operated off a single 3V flat button cell.
There is not much to the circuit. The UM66 is connected to its supply and its output fed to a transistor for amplification. You can either use a 4ohm speaker or a " flat" piezoelectric tweeter like the one found in alarm wrist watches.
If you use the piezo, then it can be connected directly between the output pin 1 and ground pin 3 without the transistor.
The UM66 looks like a transistor with 3 terminals. It is a complete miniature tone generator with a ROM of 64 notes, oscillator and a preamplifier. When it first came into market, it was programmed for the "Jingle bells" tune. Now they come with a wide variety of different tunes.



7- 4 in 1 Burglar Alarm دائرة إنذار سرقة ٤ في ١

سوف تقوم الدائرة بإطلاق الإنذار في أربعة حالات مختلفة وهي

١- عند سقوط ضوء على LDR1

٢- عندما ينقطع الضوء الساقط على LDR2

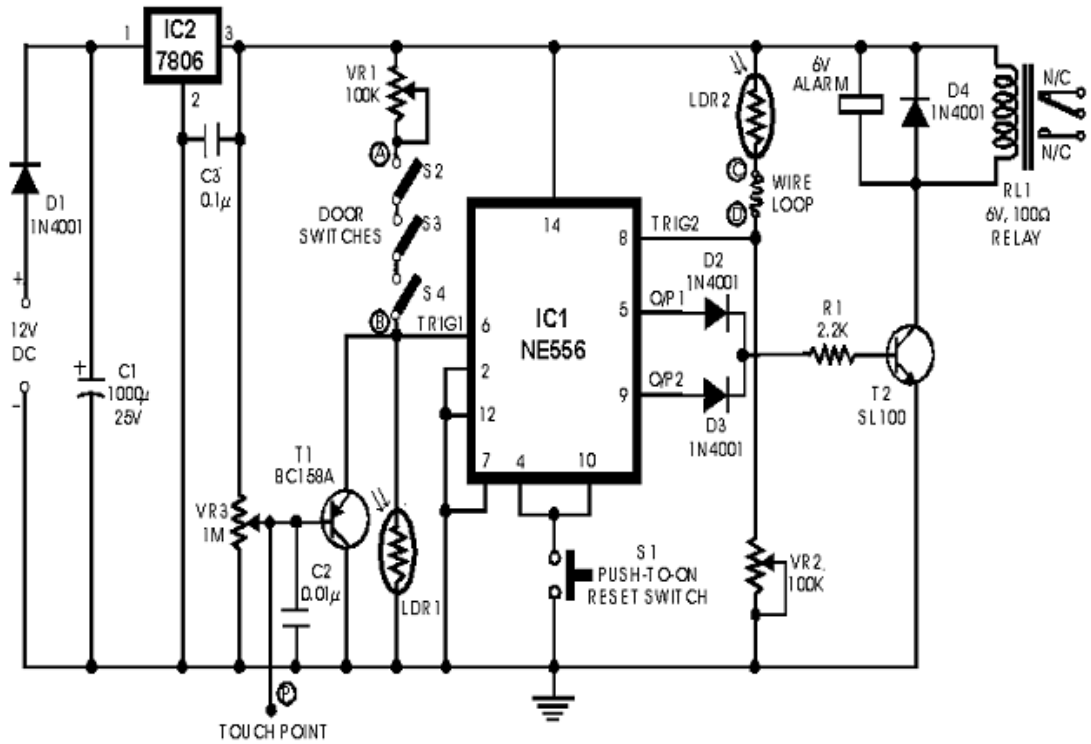
٣- عند فتح مفتاح الباب أو قطع السلك .

٤- الإظلام عند القفل أو مقبض الباب .

المقاومة المعتمدة على الضوء LDR1 يجب أن توضع في الظلام عند مقبض الباب أو المفتاح بحيث إذا قام اللص بإشعال كشافه يسقط الضوء عليها فيقل فرق الجهد بين طرفيها وبالتالي الجهد المطبق على IC1 مما يجعل الترانزيستور T2 في الانحياز الأمامي ويقوم بتشغيل RL1 الذي يقوم بتشغيل الإنذار . حساسية LDR1 من الممكن التحكم فيها بواسطة المقاومة المتغيرة VR1 . من الممكن وضع LDR2 في ناحية من الممر بحيث يسقط عليها شعاع ضوء من مصدر الضوء و عند قطع اللص لهذا الشعاع ينتج فرق جهد على LDR2 مما يزيد من فرق الجهد المطبق على IC1 ويتم تشغيل الإنذار. ومن الممكن التحكم في حساسية LDR2 عن طريق المقاومة المتغيرة VR2 . ويوصل سلك طويل ولكن رفيع جدا بين النقطتين A و B أو النقطتين C و D ويوضع السلك بعرض الباب أو النافذة حيث إذا قام أي شخص بقطع السلك يتم تشغيل الإنذار .

I n this circuit, the alarm will be switched on under the following four different conditions: 1. When light falls on LDR1 (at the entry to the premises). 2. When light falling on LDR2 is obstructed. 3. When door switches are opened or a wire is broken. 4. When a handle is touched. The light dependent resistor LDR1 should be placed in darkness near the door lock or handle etc. If an intruder flashes his torch, its light will fall on LDR1, reducing the voltage drop across it and so also the voltage applied to trigger 1 (pin 6) of IC1. Thus transistor T2 will get forward biased and relay RL1 energize and operate the alarm. Sensitivity of LDR1 can be adjusted by varying preset VR1. LDR2 may be placed on one side of a corridor such that the beam of light from a light source always falls on it. When an intruder passes through the corridor, his shadow falls on LDR2. As a result voltage drop across LDR2 increases and pin 8 of IC1 goes low while output pin 9 of IC1 goes high. Transistor T2 gets switched on and the relay operates to

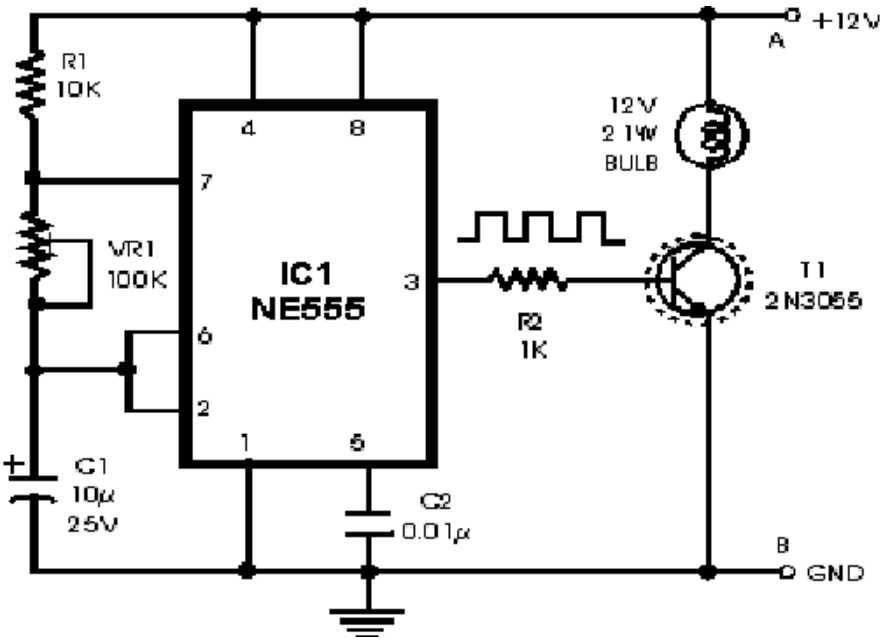
set the alarm. The sensitivity of LDR2 can be adjusted by varying potentiometer VR2. A long but very thin wire may be connected between the points A and B or C and D across a window or a door. This long wire may even be used to lock or tie something. If anyone cuts or breaks this wire, the alarm will be switched on as pin 8 or 6 will go low. In place of the wire between points A and B or C and D door switches can be connected. These switches should be fixed on the door in such a way that when the door is closed the switch gets closed and when the door is open the switch remains open. If the switches or wire, are not used between these points, the points should be shorted. With the help of a wire, connect the touch point (P) with the handle of a door or some other suitable object made of conducting material. When one touches this handle or the other connected object, pin 6 of IC1 goes 'low'. So the alarm and the relay gets switched on. Remember that the object connected to this touch point should be well insulated from ground. For good touch action, potentiometer VR3 should be properly adjusted. If potentiometer VR3 tapping is held more towards ground, the alarm will get switched on even without touching. In such a situation, the tapping should be raised. But the tapping point should not be raised too much as the touch action would then vanish. When you vary potentiometer VR1, re-adjust the sensitivity of the touch point with the help of potentiometer VR3 properly. If the alarm has a voltage rating of other than 6V (more than 6V), or if it draws a high current (more than 150 mA), connect it through the relay points as shown by the dotted lines. As a burglar alarm, battery backup is necessary for this circuit. Note: Electric sparking in the vicinity of this circuit may cause false triggering of the circuit. To avoid this adjust potentiometer VR3 properly.



8- Brake light Flasher دائرة فلاشر

هذه الدائرة مصممة على فتح وغلق الصمام بدلا من ال LED . ونستخدم فيها الدائرة المتكاملة NE 555 كمذبذب ويمكن التحكم في التردد الذي تنتجه أي في سرعة فتح وغلق الصمام من خلال المقاومة المتغيرة VR1 .

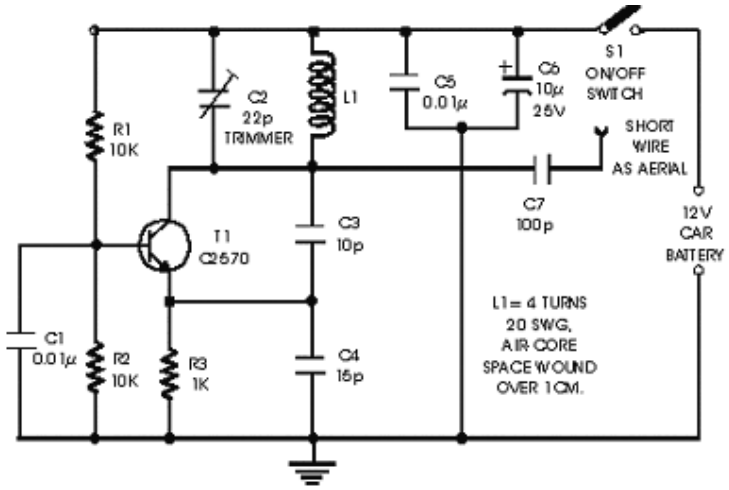
This is basically a flasher circuit modified to turn on and off a bulb instead of a LED. It uses a 555 timer IC working as an astable multi-vibrator. The flashing rate can be varied from very fast to a maximum of once in 1.5 sec by varying the preset VR1.The ON time of the circuit is given by: TON= 0.69xC1x(R1 + VR1) second and the OFF time is:TOFF= 0.69xC1xVR1 second You can increase the value of C1 to 100uF to get a slower flashing rate of up to once in 10 sec.

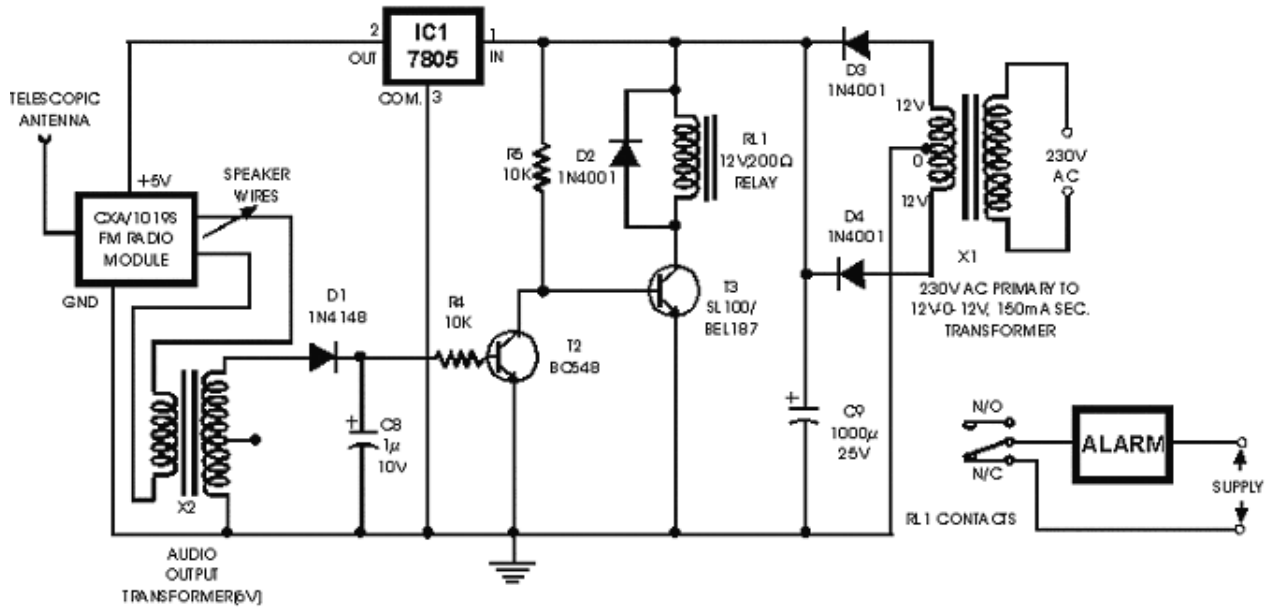


9- Car anti theft wireless alarm دائرة إنذار سيارة لاسلكى

يمكن استخدام هذه الدائرة مع أي مركبة بها مصدر جهد من ٦ فولت إلى ١٢ فولت . ونقوم بتثبيت دائرة الإرسال في السيارة ونحتفظ بدائرة الاستقبال معنا ويتم تنغيم دائرة الإرسال مع دائرة الاستقبال ويمكن استقبال دائرة الإرسال باستخدام راديو FM .

This FM radio-controlled anti- theft alarm can be used with any vehicle having 6- to 12-volt DC supply system. The mini VHF, FM transmitter is fitted in the vehicle at night when it is parked in the car porch or car park. The receiver unit with CXA1019, a single IC-based FM radio module, which is freely available in the market at reasonable rate, is kept inside. Receiver is tuned to the transmitter's frequency. When the transmitter is on and the signals are being received by FM radio receiver, no hissing noise is available at the output of receiver. Thus transistor T2 (BC548) does not conduct. This results in the relay driver transistor T3 getting its forward base bias via 10k resistor R5 and the relay gets energized. When an intruder tries to drive the car and takes it a few meters away from the car porch, the radio link between the car (transmitter) and alarm (receiver) is broken. As a result FM radio module gene-rates hissing noise. Hissing AC signals are coupled to relay switching circ- uit via audio transformer. These AC signals are rectified and filtered by diode D1 and capacitor C8, and the resulting positive DC voltage provides a forward bias to transistor T2. Thus transistor T2 conducts, and it pulls the base of relay driver transistor T3 to ground level. The relay thus gets de-activated and the alarm connected via N/C contacts of relay is switched on. If, by chance, the intruder finds out about the wireless alarm and disconnects the transmitter from battery, still remote alarm remains activated because in the absence of signal, the receiver continues to produce hissing noise at its output. So the burglar alarm is fool-proof and highly reliable.





10- Fire Alarm دائرة إنذار حريق

هذه الدائرة تقوم بإنذار مستخدمها في حالة وجود حريق وهي تدرك الدخان الناتج في حالة الحرائق فعند مرور هذا الدخان بين الصمام والمقاومة المعتمدة على الضوء LDR فان كمية الضوء الساقط على عليها تقل مما يزيد من مقاومتها ويزدد الجهد على قاعدة الترانزيستور والذي يقوم بتشغيل دائرة الإنذار.