

**PAGING AND ALARM SYSTEM  
BY  
CODED RADIO SIGNAL**

**MODEL : K -400**

# **INSTRUCTION MANUAL**

## K-400 MODEL

### The Paging and Alarm System by Individually Coded Radio Signal with the Maximum Power Allowed by FCC.

The paging and alarm system is a coded radio frequency transmitter and receiver. It is designed to ALERT ONLY YOU.

4 watts power is the maximum allowed by Federal Communication Commission, and the system can reach up to a range of 4 miles depending on terrain and atmospheric conditions.

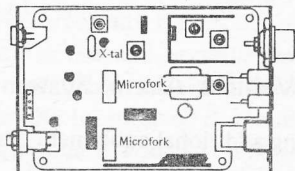
K-400 is equipped with a voltage drop sensor or/and direct contact closure switches to trigger its transmitter.

It can be easily installed in a vehicle, home, office, school, etc. There is no limit to its application. Use it as personal pager or personal alarm system. K-400 can be added to just about any existing alarm system. The transmitter operates on a 12 volts DC power, and the receiver operates on 2.6 volts DC batteries. The original batteries are mercury batteries in two 1.35 volt pieces, and the approximate life of the batteries are 1000 hours.

K-400 requires approximately 1.5 AMPS during transmission and 50 milli-AMPS during reset stage.

Additional transmitter or receiver can be made to match to the existing system. Such orders should be directed to your local dealer or factory. K-400 uses a crystal for the carrier frequency. Your system will have any one of the following frequencies. 26,995 MHz, 27,045 MHz, 27,145 MHz, 27,195 MHz, 27,255 MHz. It also has two tone generating reeds, called MICROFORKS. The frequency numbers are shown on the top of each MICROFORK. You must provide us these three sets of numbers when ordering. See the diagram of the transmitter for their locations.

FIG. 1



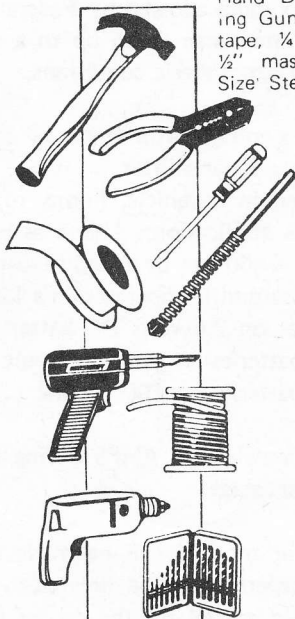
This instruction manual is divided into 3 major applications. Please read it through before installation.

1. **Installation for use in your vehicle as an alarm system.**
2. **Installation for use as a paging system.**
3. **Installation for use as a paging and alarm system.**

Tools Required:

**Tools Required:** Screwdriver, Wire Strippers, Hand Drill, Hammer, Soldering Gun and Solder, Electric tape, ¼" masonry drill bit, ½" masonry drill bit, Misc. Size Steel Drill Bits.

FIG. 2



K-400 Package includes the followings:

1. Transmitter
2. Receiver
3. Two 1.35 volt batteries for receiver.
4. Mounting bracket with screws for transmitter.
5. Power plug with wires.
6. One Coax cable

### **Application #1 — Vehicle Alarm System**

You need the following additional equipment and supplies.

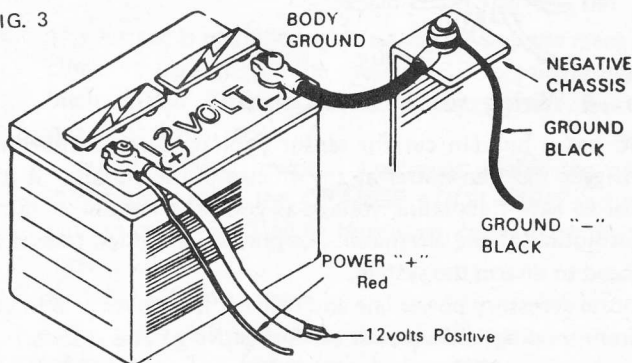
1. K-400 Package.

2. 1/4" drill bit.
3. Spool of 16/18 gauge wire.
4. KA-1, Interior CB Antenna (Optional) or CB antenna. You may wish to utilize AM/FM radio antenna, if already equipped with, however there may be some loss in AM reception sensitivity, and you may hear some ignition noise or statics. (very limited range in some).

## Step 1 — Paging and Alarm for Your Vehicle

Before starting with your installation, FIRST, determine whether your vehicle has a negative or positive ground. (most U.S. Cars are negative ground) Examine the BATTERY. . . . If the terminal marked with a minus (—) sign has a heavy piece of metal braid or ground cable connecting it to the metal frame or chassis, the electrical system has a (—) NEGATIVE GROUND. If the positive (+) terminal is connected to the frame, the electrical system has a POSITIVE GROUND (+)... (See Figure 3).

FIG. 3



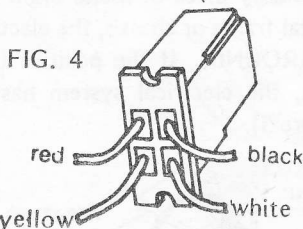
## Step — 2 Install Transmitter

1. Select a space to which you can mount the bracket for the transmitter. The transmitter does not need grounding, but a solid base such as fire wall or metal floor is recommended. KA-1 Antenna has a long coaxial cable to reach any where in most cars, so the location of the transmitter may be anywhere in the car, but if you plan to use the AM/FM radio antenna, mount the bracket under the dashboard on fire

- wall close enough to the radio so that the coaxial cable provided in the package may reach from the transmitter to the radio.
2. Mark locations under the dashboard where the bracket holes will be drilled. Be careful that area to be drilled is free wiring and other obstructions.
  3. Drill holes at your location marks. Affix bracket with screws provided. Tighten screws securely.

### Step — 3 Wiring for Power Source (Negative Ground Car)

1. **RED WIRE FROM PLUG:** Connect it to a constant positive side or fuse terminal or battery terminal.(+)
2. **BLACK WIRE(LONG BLACK WIRE):** Connect it to the chassis or battery terminal.(—)



### Step —4 Wiring for System Control

K-400 has a build-in current sensor (Voltage Drop Sensor) which will trigger the transmitter at any change in the voltage. It is very normal to have fluctuating voltage as you drive because of the varying revolution of the alternator. To prevent unwanted transmission, you need to disarm the system.

1. Locate accessory power line and connect this power line to yellow wire from plug. (When your car is negative ground system.)

**IMPORTANT:** If the car is positive ground system, connect accessory power line to white wire instead of yellow wire.

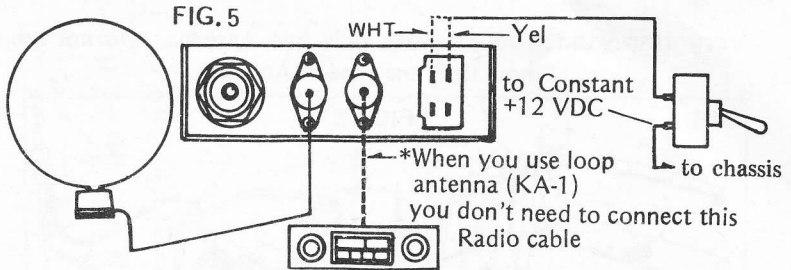
### 2. Alternate Wiring for Systems Control:

If your vehicle is not equipped with an accessory fuse terminal or if you wish to have a toggle switch to control "ARMING and DIS-ARMING", install a toggle switch in a inconspicuous but accessible place.

- a) <sup>ATTACCARE uno dei fili</sup> Connect one of the wire from toggle switch to chassis.
- b) Connect the other wire from toggle switch to white wire from plug when your car is negative ground system.

**IMPORTANT:** If your car is positive ground system, yellow wire from plug must be connected to toggle switch wire instead of white wire.

c) To disarm turn the switch on. To arm turn the switch off.



Basic wiring is done at this point if your vehicle is equipped with a dome light, optional PIEZO ELECTRIC SENSOR is not desire. Tape up the Short black wires and proceed to the antenna connection.

**Note:** If your car is equipped with electrically wound mechanical clock, it may trigger the system. To eliminate this problem, install a clock filter or replace your clock with quartz or digital clock.

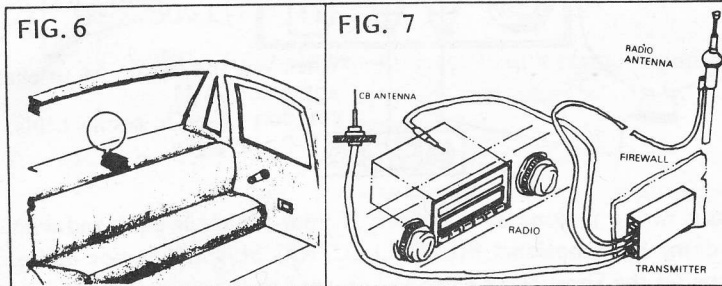
There is another option. You may disable the current sensor by cutting the ORANGE LOOP WIRE and install pin switches. See Step 8. Have your dealer order the clock filter.

### Step 5 Antenna Connection

1. For the best result and convenience, install KA-1 Interior CB Antenna. The installation instructions are enclosed in the package. Have your dealer order one for you.
2. You may use any one of many CB radio antennas in the market. See fig. 9.
3. If you wish to utilize the existing AM/FM radio antenna, disconnect the coaxial wire from the radio and plug into antenna receptacle of the transmitter.  
Plug in one end of enclosed coaxial wire to the receptacle marked RADIO and in the other end to the radio antenna receptacle.

**Note:** The proper antenna is very important for any radio transmission. This system is no exception. Certain AM radio antennas such as wind shield antenna may not give you sufficient range. Furthermore, your AM radio performance may deteriorate.

**Very Important:** You can have only one Antenna. Do not use more than one type of Antenna.



### Step – 6 Final Connection

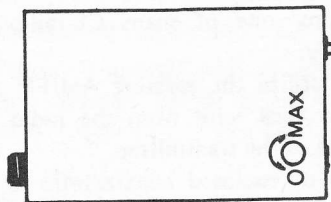
When all connections, RED, BLACK, YELLOW (or white if positive ground system) wires are connected, insert the plug into transmitter socket.

### Step – 7 Optional Piezo Electric Sensor

K-400 can be activated by a mechanical shock to the car if Piezo Electric Sensor is installed properly. Install the Sensor near the entry point and connect to the YELLOW receptacle on rear side AND SHORT BLACK wires. The input signal voltage must be at least 10mV.

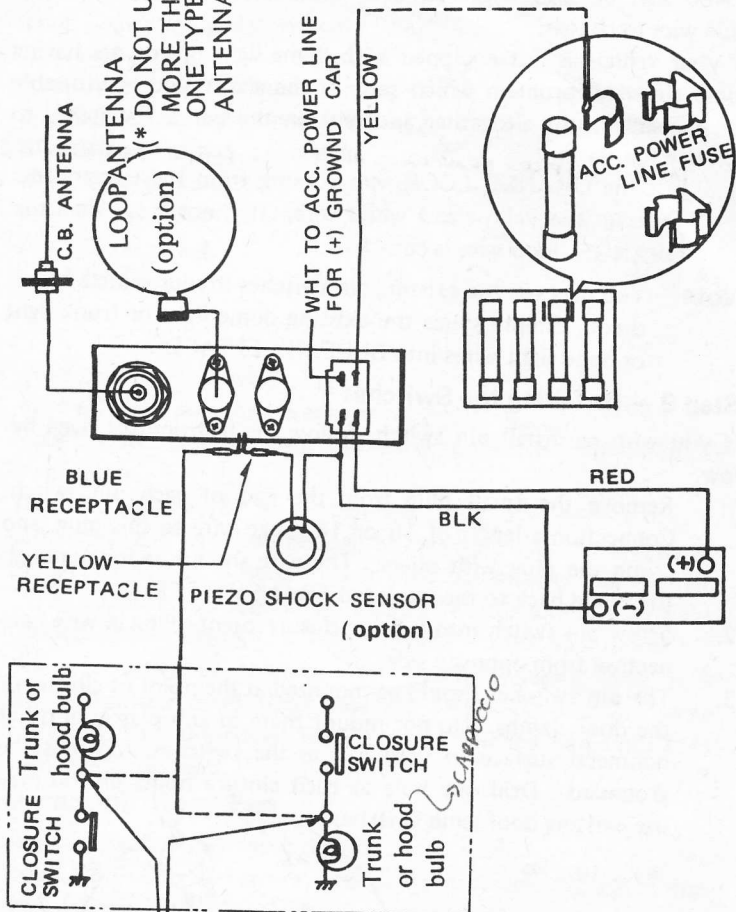
The input sensitivity can be adjusted by POTENTIOMETER. (see fig. 8)

FIG. 8



# The Complete System Diagram for Most Automobiles

(FIG. 9)



CONNECT BLUE RECEPTACLE TO ONE OF THIS POINT FOR INSTANT TRIGGERING.

THESE CLOSURE SWITCHES AND BULBS ARE ALREADY INSTALLED AT CAR MANUFACTURER'S

ATTACARE  
IL FILLO BLU  
IN 1 di QUESTA  
PUNTI



## Step 8 — Alternate Triggering with Contact Switches

K-400 can be also triggered with mechanical contact with the blue wire to chassis.

If your vehicle is not equipped with dome light or you are having some electrical problem which sets off the alarm, you may disable the current sensor altogether and rely on the contact switches to activate the alarm.

1. Cut the ORANGE LOOP wire coming from the transmitter. *TAGLIA GIÙ IL FILO ARANCIO ARRIVO PER IL TRASMETTITORE*
2. Tape up the yellow and white wire. It is not used when the ORANGE loop wire is cut.

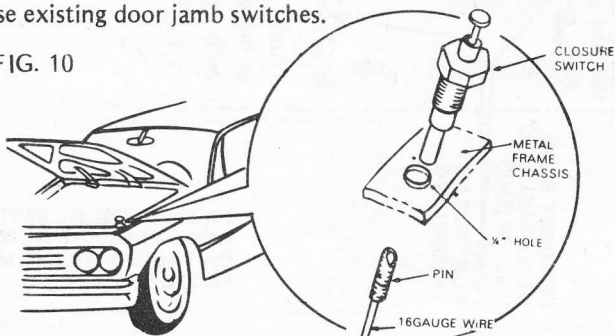
**Note:** You may use the existing pin switches if your vehicle has them. Simply splice the existing dome light or trunk light or hood light wires into BLUE RECEPTACLE.

## Step 9 — Installing the Switches

If you wish to install pin switch, follow the instructions given below.

1. Remove the small plug from the end of each pin switch. Connection a length of 16 or 18 gauge wire to this plug, and crimp the plug with pliers. The wire should be long enough to extend back to the mounted TRANSMITTER.
2. Screw pin switch into hole at closure point. Plug in wire connection from opposite side.
3. The pin switches should be mounted at the point of closure or the door jams. Do not mount them in any plastic or other nonmetal surface in your car, as the switches, too must be grounded. Drill one hole at each closure point or you may use existing door jamb switches.

FIG. 10



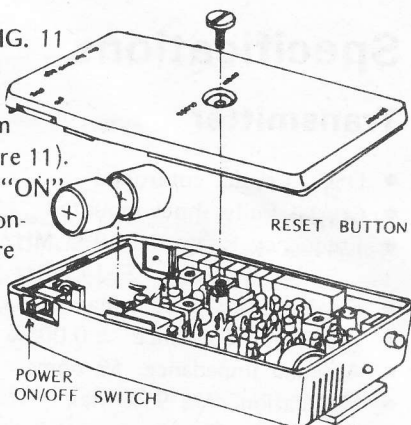
## The Receiver

FIG. 11

1. Insert the batteries provided.  
Your paging and alarm system is now operational (See Figure 11).

2. Press the "ON-OFF" switch to "ON"

The receiver should emit a continuous beep sound. If there is no beep response, check to see if the batteries are properly installed.



3. While the receiver is beeping in the "ON" position, press the "RESET" button.  
Your receiver is now armed and ready to receive a signal from the transmitter.
4. Test the switches to be certain that they have been properly connected and are operational by opening and closing each switch connected closure. Each time the receiver beeps, wait 15/20 seconds, then press the "RESET" button and test the next closure. Your paging and alarm system is now operational.
5. The receiver will continue to beep after it receives a signal from the transmitter until you press the "RESET" button. Once activated, the continuous beep tone is "latched" on until it is turned off, or reset.

### Transmission Range Test:

1. Have someone open your vehicle door while you are in your house, office or wherever you want coverage, to assure that you are receiving a signal for your particular application.
2. Each time a switch closure is opened the transmitter will send a continuous beeping signal.
3. Wait 15/20 seconds before you press the "RESET" button. Each time your receiver beeps so as to re-arm it for future use.
4. Transmission range is usually more than 4 miles, however it can vary depending upon terrain and atmospheric conditions, etc.

# Specifications

## Transmitter

- OSC: Crystal controlled
- Crystal Fully shock-mounted
- Frequency Range: 26,995 MHz 27,045MHz 27,095MHz  
27,145MHz 27,195MHz 27,255MHz
- Final output: 4 watt Max at 13.6 nominal
- Frequency Tolerance:  $\pm 0.005\%$
- Antenna Impedance: 50 ohms
- Modulation: AM 95% Max
- Time interval: Sequential 2 tons  
Rise Time 550-900 MS  
1st tone 850-1200 MS 2nd tone 850-1200 MS
- Call Time: 2 times minimum
- Rise Time: 1.0 sec
- Power Supply Voltage: 13.6 V Nominal
- MIN: 11VDC MAX: 14.5VDC
- Operating Temp Range:  $-30^{\circ}\text{C} - + 60^{\circ}\text{C}$
- SIZE: 97W x 146D x 30H
- WEIGHT: 550 grams

## Receiver

- Frequency: 26,995MHz 27,045MHz 27,095MHz 27,145MHz  
27,195MHz 27,255 MHz
- PAGING Sensitivity: 30 micro V permeter
- Decoding System
- 60,000 different tone codes
- Receiver will beep until manually re-set even after transmitter is shut off
- Superheterodyne narrow band receiver minimizes interference from co-channel and adjacent channel users
- Power Source: Mercury battery (2.8V) About 1,000 hours
- All transistors solid state
- High reliability
- New high impact plastic case

- Easy serviceability
- 2 tone sequential tone coding prevents false calling.
- SIZE: 56W x 104 H x 23D
- WEIGHT: 130 grams (included Battery)

## **Batteries**

Batteries in the receiver should last for 1,000 hours. The battery life may be extended if you will turn the receiver off when it is not in use. Battery replacements are available at most electronic parts stores. A 2.6 Volt, 1¼" battery or two 1.3 Volt batteries are suggested.

✱ OPTIONAL RECHARGEABLE NI-CAD BATTERY AND CHARGER ARE AVAILABLE

## **WARNING:**

All controls on the outside of this set may be operated by any person who is the holder of a CB license, and such adjustments will in no way violate any of the FCC Rules and Regulations or Communications Act of 1934 as amended:

Any adjustments inside this transmitter may be performed only by, or under the immediate supervision of, a person holding a commercial first or second class FCC operator's license:

Substitution of crystals, transistors, or any other components which could cause any violation of the technical regulations, FCC part 95, or the type acceptance requirements of FCC Rules & Regulations Part 2, is prohibited by such Parts: The operation of the transmitter of this unit which will cause radiation of signals may not be performed by any person without a CB license issued by the FCC: an application may be obtained from many dealers or the Field Officers of the FCC: the application with appropriate fee must be forwarded to: Federal Communications Commission, Gettysburg, Pa. 17325:

Any person found guilty of violating any provisions of the Communications Act of 1934 as amended or any of the FCC Rules & Regulations, may be subject to the Penalty provisions contained therein.

- Easy serviceability
- 2 tone sequential tone coding prevents false calling.
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## **Application 2—Paging System.**

How to install for use as a Paging System. . . . OFFICE, HOME, FACTORY, APARTMENT, HOTEL, MOTEL, SCHOOL, HOSPITAL, etc. etc. . . . .

1. K-400 Paging and Alarm System Kit
  - a. Transmitter
  - b. Receiver
  - c. White Plastic Plug Connector
  - d. Two (2) 1.3V Batteries
  - e. Bracket with Mounting Screws
  - f. Instruction Manual
  - g. Warranty Card
  - h. FCC Form 505
  - i. Transmitter ID Card
2. Citizen's band, solid state regulated 12V DC power supply unit, with recommended: In Put 120V AC, 60Hz 24W; Out Put 13.8V DC, 1.5 Amps.
3. CB Antenna
  - a. Indoor Type (KA-1 is recommended)
  - b. Outdoor Type

**IMPORTANT** — Read thru the complete instruction manual before starting with your installation.

### **Step 1 — Paging System**

#### **Locations:**

Select convenient location for your transmitter which is easily accessible for your 12 volt CB power supply and CB Antenna connecting cords.

### **Step 2 — Plastic Plug Connector**

1. Black wire : connect to negative (—) connector power supply unit.

2. Red wire : connect to positive (+) connector on power supply unit.
3. Yellow and White wires are not necessary when using K-400 for Paging System (cover wires with electrical tape).
4. Clip the orange loop wire when using K-400 for paging system.

### **Step 3 — The Antenna**

1. CB Indoor Antenna - Newly developed, will give excellent reception. (Optional (KA-1 is recommended)
2. CB Outdoor Antenna — Connection to an Exterior Antenna will give your transmitter extended transmission range.

### **Step 4 — Final Connections**

1. When Black (—) ground and Red (+) power wire leads have been connected to CB power supply unit. Insert the plug into the transmitter socket.
2. Insert CB Antenna jack into transmitter.

### **Step 5 — You Are Now Ready To Test Your Paging System.**

#### **The Receiver:**

1. Insert the batteries provided. Your paging system is now operational.
2. Press the "ON-OFF" switch to "ON" The receiver should emit a continuous beep sound.

#### **Transmission Range Test:**

1. Switch your power supply to "ON" position, and press your red call button on transmitter to assure yourself that you are receiving a signal. And the "ON AIR" lamp will be on.
2. Transmission range is usually more than 4 miles, however it can vary depending upon terrain and atmospheric conditions, etc.

## **Application 3—Paging and Alarm System.**

### **Installation 'Instructions**

How to install, for use as a Paging and Alarm System . . . . .  
OFFICE, HOME, FACTORY, APARTMENT, HOTEL, MOTEL,  
SCHOOL, HOSPITAL, etc. etc.

#### **1. K-400 Paging and Alarm Kit**

- a. Transmitter
- b. Receiver
- c. White Plastic Plug Connector
- d. Two (2) 1.3V Batteries
- e. Bracket with Mounting Screws
- f. Instruction Manual
- g. Warranty Card
- h. FCC Form 505
- i. Transmitter ID Card

2. Spool of 16/18 gauge wire (approx. 20ft for average size home).

3. Citizen's band, solid State Regulated 12V DC power supply unit, with recommended: In Put 120V AC, 60Hz 24W;  
Out Put 13.8V DC, 1.5 Amps.

4. CB Antenna    a. Indoor Type  
                    b. Outdoor Type

5. Normally closed MAGNET switches for doors and windows  
(Open circuit when magnet is moved away).

**IMPORTANT —** Read thru the complete instruction manual before  
starting with your installation.

### **Step 1 — Location**

Select Convenient Location for your:

1. Transmitter
2. Citizen's Band — 12 volt power supply unit
3. CB Antenna — Indoor or Outdoor

### **Step 2 — Plastic Plug Connector**

1. Black wire ( long ): connect to negative (—) connector on CB power supply unit.



2. Red wire : connect to positive (+) connector on CB power supply unit.

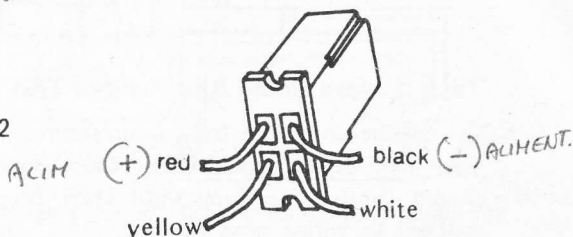
3. Blue Receptacle: <sup>FILLO BLU</sup> connected to circuit wire, for close circuit alarm system.

4. Black wire short : <sup>FILLO NERO CORTO</sup> connected to other circuit wire, for close circuit alarm system.

5. <sup>NON SERVONO</sup> Yellow and white wires are not necessary in this application, <sup>TAGLIARE</sup> tape them up. (POWER PLUG)

IMPORTANT: Clip the <sup>IL FILLO ARANCIO. IN</sup> orange loop wire in this application. <sup>QUESTA APP.</sup>

FIG. 12



### Step 3 – The Antenna

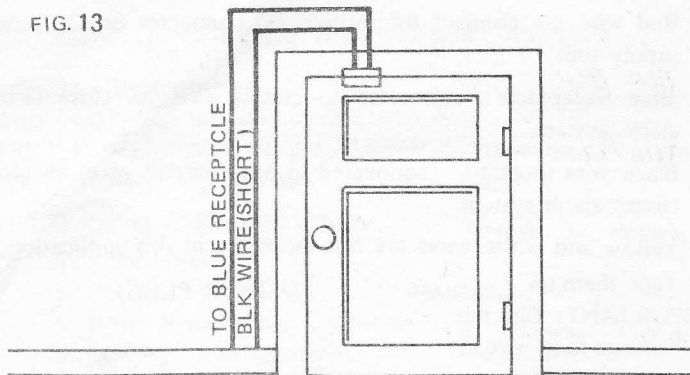
1. CB Indoor Antenna – Newly developed, will give excellent reception. (KA-1 is recommended)
2. CB Outdoor Antenna – Exterior antenna will give your transmitter extended transmission range.

### Step 4 – You Are Now Ready To Proceed With Wiring Of Your Premises:

#### 1. Positioning Of Contacts:

Main entry door locate magnetic contacts on edge of door opposite of hinges (see diagram) mount contact with terminals (switch) on door frame with terminals facing upward mount contact without terminals (magnet) on door directly below and as close as possible (no more than 1/4" space apart). Bring wires black (-) and Blue Receptacle up to two terminals at top on contact.

FIG. 13



**Test: Before Going Any Further Test As Follows:**

Go outside and close front door securely. Open front door and your Maxi Beeper should Beep. Close front door and Maxi Beeper should continue to beep until Maxi Beeper is "RESET" Then proceed to wiring next opening.

NOTE: With regard to wiring your premises, place nails between the wire and space them approximately one foot from each other.

**Step 5 — Follow These Test Procedures At The Completion Of Each Opening.**

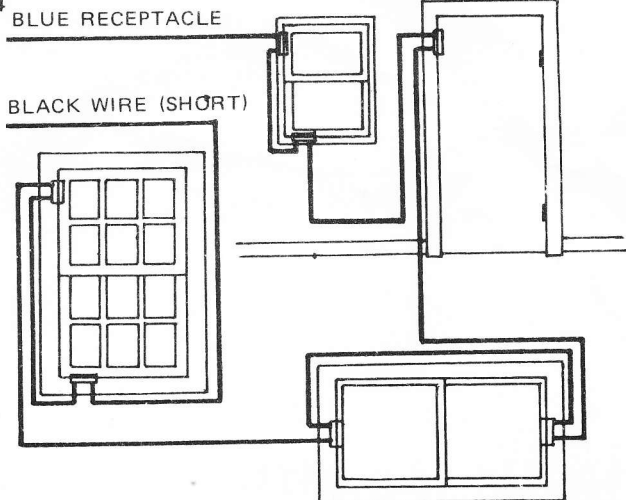
You are now ready to protect your next opening by running circuitry in such a pattern that it completely encircles the house. Refer to the following examples depending on which type of windows, doors, etc. you are protecting.

Conceal wiring as best as possible by running along frame work, behind drapes, along baseboard, etc.

When you come to the last door or window to be secured, the wires connecting these magnetic switches make a loop.

Connect both ends of this loop to the Blue Receptacle and Black wire(short) from plug respectively.

FIG. 14



**NOTE:** If window design prohibits drilling for contact mounting, any permanent bond adhesive may be substituted providing frame is cleaned thoroughly with a cleaning solution.

### Step 6 — Final Connection

1. Plug connector: Black (–) ground and Red (+) power wire leads have been connected to the CB power supply unit. Blue receptacle and Black wire (–) have been connect to circuit wires. Insert the plug into transmitter socket.
2. Insert your CB Antenna jack.

### Step 7 — Test

1. You are now ready to test your Paging and Alarm System

**NOTE:** Use the same test procedures as specified in your Paging Application.