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### **b) IMMEDIATE MEASURES TO BE ATTENDED AT SIREN ACTIVATION**

1. Rush to the fence and check for any attempts for trespass. If YES, alert the security personnel.
2. Check the fence for any attempts of tampering such as
  - a) Breaking the anti-climb insulators
    - If YES, replace the broken insulator with new insulator
  - b) Cutting the fence strings
    - If YES, disarm the system rejoin the strings. Make sure that the fence strings should not get contact with the ground or the fence pole.
  - c) Fall of any power conducting material over the fence strings
    - If YES, switch off the controller, remove the foreign material and switch on the controller.
  - d) Knotting the fence strings with any power conducting wires
    - If YES, switch off the controller, remove the foreign material and switch on the controller.
3. If the above 1&2 are not noticed, check for the vegetation, which may be discharging the power from the fence. If so, switch off the controller, clear all the vegetation under and closer to the fence immediately, and switch on the controller.
4. Check for any water logging locations under the fence strings, which may be immersing in the water. If so, switch off the controller, clear the water & switch on the controller.
5. Check for the battery discharge, if any. See that the battery contains the sufficient fluid and not so, switch off the controller, remove the main connection, top-up with distilled water, clean the terminals as explained in the manual and connect the mains, switch on the controller.

**NOTE: DISARM THE CONTROLLER AT HEAVY RAINS**

# Single Zone Model

## **II. MAINTENANCE MANUAL FOR SINGLE CHANNEL SECURITY POWER FENCE SYSTEM**

### **1) Batteries**

1. The distilled water level in the battery should be maintained above the minimum level.
2. Check the levels periodically and top up the levels whenever required.
3. The Battery terminals [ '+ve & -ve ' ] should be clean.
4. Apply the petroleum jelly to the terminals periodically.
5. Keep all the contacts firmly at terminals points.
6. See that the battery is always on wooden plank or any non-conducting material.

### **2) Super Earth Kits**

7. All the provided Super Earth kits should be in moisture condition. Apply water to the Super Earth Kits periodically i.e., at least once for every four days.
8. Check all the connections to the Super Earth Kits are firm in condition.

### **3) Fence**

1. The fence should be free from all the obstacles such as creepers, branches and other foreign particles.
2. There should not be any overlapping or close contact of AC powered wires to the fence wires.
3. All the contacts on fence should be firm by all means.
4. All fence strings are to be in firm condition.

**Caution: Switch off the System during heavy rainfall**



#### 4) Preliminary Measures for fault detection

Check the performance of the fence with 'Fence Neon Tester'. The performance can be read as under:

All Five glows	-	Excellent condition
Four glows	-	Good condition
Three glows	-	Fair condition
Two glows	-	Poor condition
Single glow	-	Very poor condition

The fence from 'Fair Condition' to 'Very Poor condition' is meant to be serviced or to be checked as under.

##### **Fence**

- a) Check all around the fence for any obstacles such as creepers, branches or foreign particles which may be the reason for the discharge of fence voltage

Remedy – clear the obstacles and switch “on” system and check the performance with Neon Tester.

- b) Check the insulators which are discharging the fence voltage because of natural breakage over a period of time, normally there will be a pulse rated spark or noise at these insulators.

Remedy – replace the defective insulator or provide extra insulation.

- c) Check the moisture condition of the Super Earth Kits which may be in total dry condition.

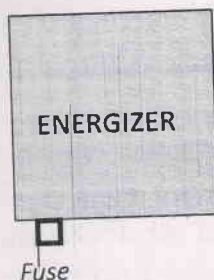
Remedy – Apply the sufficient water to all the Super Earth Kits

### System

Check the condition of the control unit thoroughly as under :

#### **Energizers (in control unit)**

- Check the provided fuse for any failure. Check for any loose contacts of all the connected cables from the battery to the energizer.



**Remedy** – Replace the fuse if failed. Re-fix the cable connections properly.

### Batteries

– Check the condition of the battery as under :

- Distilled water level – Fill the distilled water if shows less than minimum level mark
- Battery terminals – Clean thoroughly, apply the petroleum jelly and re-fix all the connections firmly.
- Battery Voltage – Check for the minimum 12V at the battery terminal point, recharge the battery on AC charge unit if the voltage drops abnormally.

### Solar PV Modules(if provided)

– Check the voltage with a multi-meter during the sunny day at cable end points (contacts at battery) by disconnecting the battery. See for the voltage more than 12V. If the out put voltage is less than 12V, the reason can be because of dust formation on the Solar PV Module. Check for any damages in the cable.

**Remedy** – Clean the Panel with dry and wet cloth and recheck the performance at end points with multi-meter.

### Super Earth kits

- See whether all the provided Super Earth kits are in moisture condition or not. Check whether connected cables are firm or not.

**Remedy** – If not apply the water to all the earth kits, re-fix all the connected cables and wait for 30minutes for performance test.

## 7) Fault finding

The purpose of this section is to provide the field technician with a means of isolating the nature and approximate location of a fault within the security system.

A hit and miss approach to problem solving can be very frustrating and very expensive. It is better if the technician take a systematic approach based on an understanding of the system and how it fits together. In general two techniques should be used in problem solving – isolation and substitution.

Isolation – establishing stage-by-stage which parts are working correctly and which are not, and so isolate the cause of the problem.

Substitution - replace suspected faulty parts with a spare, which is known to be good. If there is little change in the behavior, then the original part was probably working correctly. A technician should always carry one spare of everything. **Only an Authorised Alliance Security Systems service representative must do the substitution for faultfinding. Warranty is void if any un-authorized person tampers with the control unit.**

The following obvious faults are to be checked:

1. All screw terminal wiring has been made correctly.
2. All fuses are intact- **Alliance Security Systems representative should carry out this test.**
3. All plugs are pressed firmly into their sockets.  
All integrated circuit chips are pressed firmly into their sockets- **Alliance Security Systems representative should carry out this test.**
4. All configuration and programming has been carried out – **Alliance Security Systems service Representative should carry out this test Power.**

If the board does not appear to have any power.

1. Check if the control Unit is ticking
2. Check mains Supply.
3. If mains supply is faulty, check battery
4. If both mains supply and battery are faulty, call Alliance Security Systems Phone 040-66610622



## 8) Fence Detection

Check voltage – using Neon Tester in all fence channels between the ground and all fence connectors.

Fault is either with the Energizer or on fence. If the fault is on the fence, check for shorting – a wire piece may be on the fence wire or a fence wire may be snapped. If so remove the faults and check the voltage on the fence.

If the problem exists, contact M/s Alliance Security Systems, Hyderabad, Phone: 040-66610622.

## 9) Maintenance

The entire fence line must be free from vegetative growth and ensure that weeds/ creepers do not climb on the wall both from within and outside of the perimeter. The Service road along the wall inside the perimeter must be kept clean for easy perambulation and keep the bottom area of the wall free of vegetation.

In case of trees next to the perimeter wall, it is important that the user trims the branches once in 15 days to avoid leaves/ branches touching / failing on the fence.

Any broken insulators must be replaced immediately. It is important the customer keeps adequate spares of the insulators.

Any undue sag in the fence lines must be corrected by proper tensioning. Customer can insist upon this during the maintenance visits.

### **Routine Checks to be carried out by the maintenance personnel**

1. Check and record the Power Fence Channel voltage with the Neon Tester.
2. Surprise check by shorting the fence to ensure proper response is available in Alarm situations.
3. Broken Kiwitah insulators are replaced immediately.
4. Check the ticking of the Control unit. There should be one pulse every 1.2 seconds.
5. Check the Live Lite flashes. If the flash interval increases or decreases, call the Alliance Security Systems Service representative.



6. Logbook should be checked and attested at least once a fort night and all Service reports given by the Alliance Security Systems service representative attending any Breakdown calls, maintenance checks or audits by Maintenance personnel designated for the power Fence.
7. Maintenance Contract agreement is in place with Alliance Security Systems For annual maintenance of the Power Fence.
8. Adequate spares for the controller and fence accessories have been procured and are available with the stores for maintenance purposes.
9. Contact M/S Alliance Security Systems in case of trouble :

# 301, Kaizen Imperial Heights, Street No-2, Uma Nagar, Kundan Bagh  
Begumpet, HYDERABAD -500016  
ANDHRA PRADESH

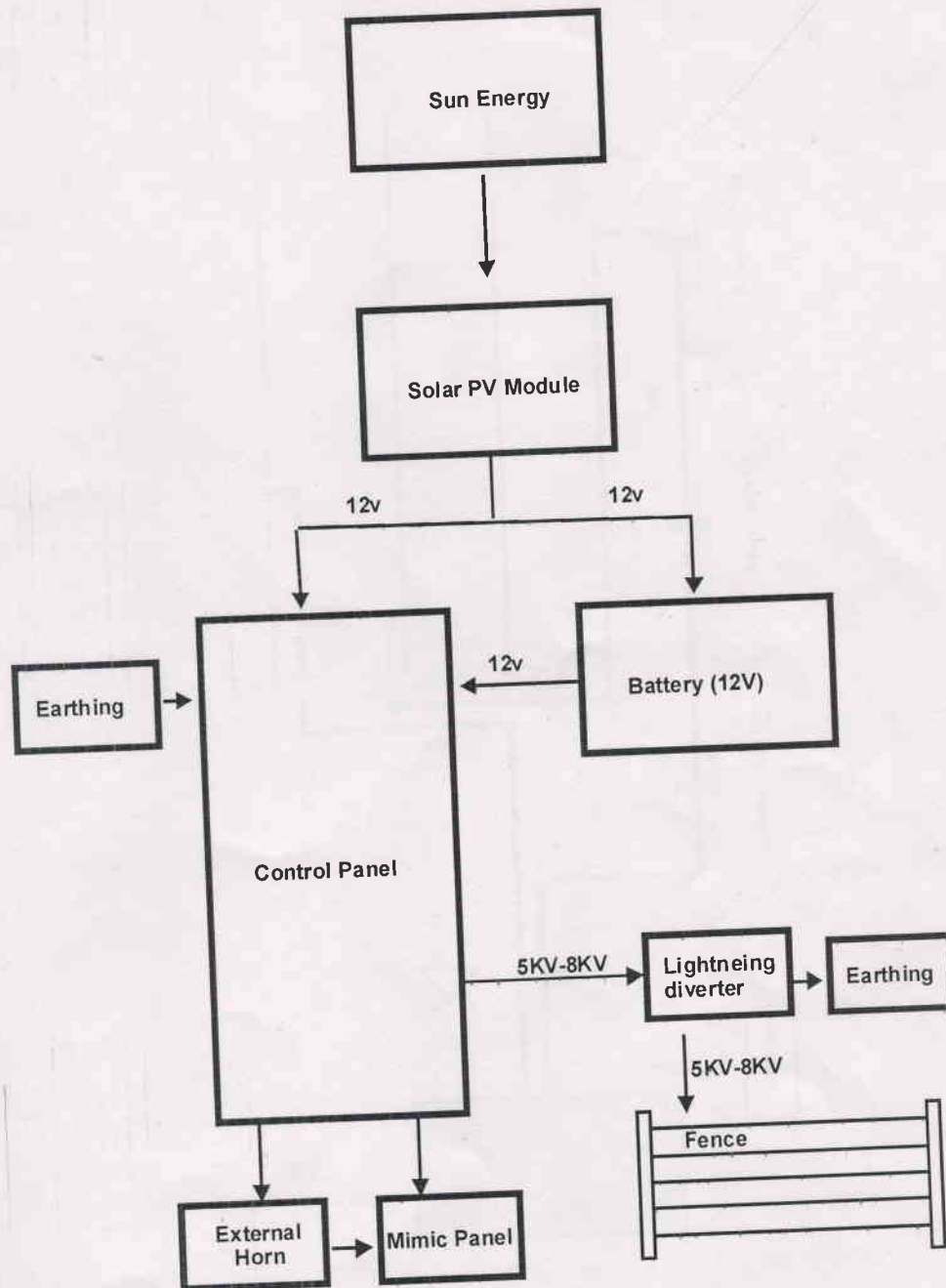
E-Mail: [info@alliancesecuritysystems.com](mailto:info@alliancesecuritysystems.com)  
[alliance\\_powerfence@hotmail.com](mailto:alliance_powerfence@hotmail.com)

**Customer Care Contact No.**

**Landline: 040 -66610622 / 23755870**

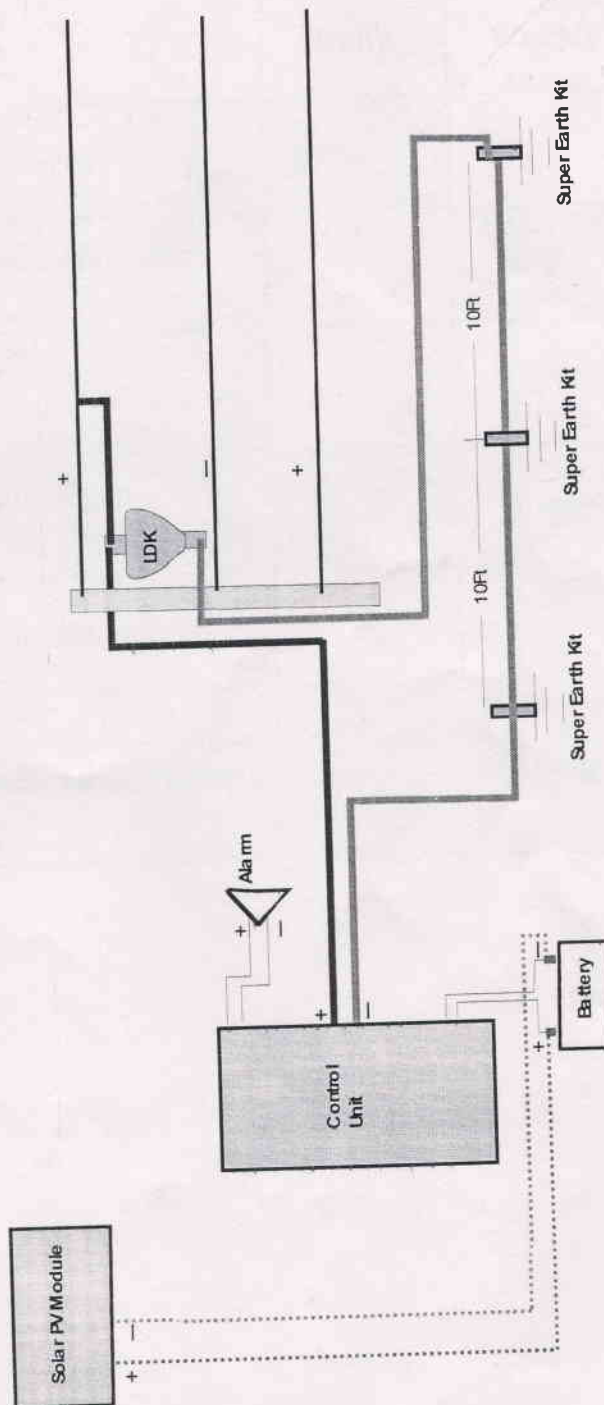
**Mobile: +91 8498099901/02**

## 10. Flow Chart of Power Fence



Note : Fence Voltage can be 5Kv to 8Kv in a pulse rate with 0.03sec duration of shock at an interval of 1.0 sec to 1.2sec

## 11. Control Panel Circuit Diagram





## Do's

### 12. Periodical Maintenance Schedules

Measure	Daily	Weekly	Monthly
Cleaning of the Solar PV Modules	✓		
Check the fence performance with Neon Tester		✓	
Clean the Battery Terminals			✓
Keep the Super Earth Kits in moisture condition	Always		
Top-up the distilled water in the battery			✓
Keep the fence in clean condition- remove the foreign obstacles such as vegetation, insects, other particles	Always		

### 13. Don'ts

- Do not keep the control panel close to the AC cables / power points
- Do not locate the control panel / battery at moisture or close to the window where the possibility of rain water can interface the control panel & Battery
- Do not avoid to provide the good ventilation to the control panel & Battery
- Do not keep the battery on direct ground
- Do not test the fence voltage with bare foot.
- Do not hold the fence wires directly unless the control panel is on "OFF" mode
- Do not tilt the control panel box / battery
- Do not short circuit the fence /system frequently to check the alarm