

DESCRIPTION OF SECURITY FENCING AND ITS WORKING IN GENERAL

Security Fencing is the modern day's alternative to the conventional type of perimeter protection. These are active fences and punish the unwelcome intruder the moment they touches the fence or try to tamper the fence. The conventional types of fences are only passive fences and cannot resist the intruder if they try to forcibly intrude into the protected area. The Security Fence gives a sharp, short but a safe shock and creates psychological fear. Against any tampering the alarm incorporated in the system gets activated and alerts the inmates of the protected area, which facilitates them to counter the unwelcome intruders.

The Security Fence is scientific fence and works on Energy with backup facility to run uninterruptedly during the nights as well as cloudy days. The whole system can be derived into two segments, one is the Basic system with CS 250 Unit (Without keypad) and the other one is the Fence.

CS 250 Unit takes 12V supply as input and energizes the same into high volt pulses in the range of about 7000 Volts. These pulses will travel through the fencing wires at regular interval of 1.2 second and the duration of each pulse will be 0.03 seconds.

The fence part is a scientific type of layout in which multi strands at 4 inches gap will run through the insulators, which are pre-fixed to MS galvanized posts. The height of the fence above the compound wall will be 4 feet. The posts are arranged at 3 meter gaps with perfect supporting to the corner poles. Proper earthing in the mode of Super Earth Kits which is a composite Mixture of different minerals helps the fence to have a perfect earthing system as solar fencing requires good earthing for effective working.

There is a provision for restricting the intrusion through the gate as well as over the gate (Optional). The spring loaded barricades arranged to the gate will electrify the gate and activates the alarm when somebody tries to open the gate forcibly. Pulses travels through the springs arranged on the gate and give the shock to the trespassers / intruder.

GENERAL DESCRIPTION

When properly designed and installed, an electric security fence is the *least* expensive, *safest*, and most *secure* method for securing property and lives when compared to walls, other types of fences, human guards, and watchdogs. The fence does NOT sleep. The fence CANNOT be bribed. The fence does NOT require food or water. A well-designed electric fence has more deterrence value than a guard with a sawed off shotgun or a snarling pit bull.

If you have security guards, you can pay for and justify the fence by reducing at least half of your guard force and still maintain a much higher security level. The remaining guards can respond quickly before an intruder even enters onto the property. You will find that an electric fence is the best security investment that you have ever made.

An Electric Security Fence is designed to keep out predators, thieves, trespassers, vandals and disease. If you also employ security guards, they will complement the security that is provided by a well-designed high voltage electric fence.

An electric fence design to keep livestock penned in (or out) is no different. A simple wire or tape around the pasture or livestock enclosure is only done for a temporary enclosure. A more permanent enclosure requires the same design considerations as you would for security. Security for your expensive livestock should be a prime consideration.

An Electric Security Fence is designed to protect property, livestock, production, manufacturing, and lives. Every situation is different, but there are also some considerations that are the same, no matter who, what, or where. The components of the system shall be installed and mounted inside a metallic enclosure and very near to the fence and LOCKED out of reach from unauthorized people.

We recommend that you check your fence at least once a week. Plant foliage, or branches or fronds laying across the high tensile wire might not reduce the voltage on the meter when dry, but foliage becomes a conductor when wet and might easily short out your system completely reducing the fence voltage to almost zero when soaked from rain.

Technical Details

- The system will be a Non-Lethal Security system.
- The system will operate as a Psychological and physical Barrier.
- The system will alert any kind of intrusion through an audio alarm System that can be in the vicinity of more than 300 meters, within a second.
- The security fence system will produce a high voltage at an energy output of 2.5 Joules, which will act as an active deterrent, a physical barrier and a reliable detection system.
- The security fence system produces a high voltage in the range of 6.0 kV to 9.9 kV (No load)_to deter, detect and deny physical intrusion by giving the intruder a short, sharp and painful shock.
- The Energizer will be able to check the fence around 50 times a minute and the instant the pulsated wires are cut or tampered, a built-in-alarm will immediately alert the monitoring personnel and the security authorities, along with the zone of attempted break-in (Optional).
- External Alarm will be activated within a second. As a precautionary means an internal alarm is provided as a substitute in case of failure of external alarm.
- The Lead Acid Battery (Reputed Make) along with electronic system will be concealed in a Metal box. A Live light fixed on the fence will indicate the activeness of the power fence system.
- Auxiliary supply of 230V AC to be provided by the Customer.

Technical Specifications:

1. **Energizer:**
CS 250 complies with BIS 302-1-76 & IEC 60335-2-76 standards for safety.

a. Input voltage	: 12 V DC
b. Power consumption	: <17 VA
c. Output voltage	: > 7 KV
d. Pulse interval	: 1.2 second
e. Output energy	: 2.5 Joules
f. Front Panel display	: Fence ON and Pulse indication
g. Weather proof unit	: ABS body
2. **Fence Voltage Alarm (Inbuilt in Energizer):** The unit is designed to sense any type of tampering / intrusion over the fence or system and activate the audio alarm within 1.2 seconds. The unit is also having a 12V output terminal for triggering additional gadgets like CCTV, Floodlights, Computer peripherals etc.
3. **Battery (Reputed make):** 12V / 42 AH Rechargeable Maintenance free Lead Acid Battery will be used for storing the energy and to power the Fence system. Battery has more than 2 days of back up to meet any emergency breakdown.
4. **Charger:** Solar PV module (Crystalline) of 12V / 40Wp capacity will be used as a battery charger. The Solar module will be from a MNRE approved manufacturer. Charge Control unit is used to regulate the charging of the Battery to avoid deep discharge and overcharge of the Battery.
5. **Lighting Diverter:** Lighting diverter will be provided to protect the Solar security fence system from stray Lighting. The details of the same are:

Lightning can cause serious damage to the energizer. When lightning strikes close to or directly on electric fence, it causes a massive surge in voltage which flows back to the energizer to find the quickest path to earth.

Other Components: The Critical components used will be of good quality confirming to the general standards of each item will be supplied by us. Specific details of some of the Critical components are:

- a. **Insulator:**
Strain Insulators for End or Corner Posts: Made of High quality virgin plastic – Polypropylene rated for 15 KV UV Stabilized.
Reel Insulators: Made of virgin Polypropylene plastic UV stabilized rated for 15KV operation. These insulators are used to guide the fence wire along the boundary through Intermediate posts. They provide anti-climb configuration to the fence.
- b. **Permanent Wire tightner:** Made of special aluminum alloy non-rusting quality. It is used to maintain adequate tension of the fence wires along the boundary.

- c. **Earth System:** It consists of 8 mm stainless steel rods or 1 inch dia GI pipe with Galvanized clamps, 1 meter length along with a combination of chemical mixture for creating more conducive conditions for Electron flow.
- d. **Fence wire:** 2.59mm diameter, High tensile wire with minimum of 230 gms/sq.m zinc coating thickness. UTS of 140.5 Kg/sq.mm and break strength of 740 Kgs.
- e. **Joining clamps:** It is used to make joints between the fence wires or interconnection of fence wires with Double Insulated cable etc. It's a positive locking mechanism. The clamps are coated with zinc of more than 25 microns.
- f. **Warning signboards:** It is made up of Polyethylene plastic with yellow background and black letters in English or local language on the front face. It will be fixed on the fence wires at every 10 meters.
- g. **Lead out cable or Double Insulated cable:** It is made up of 12G hot dip Galvanized wire with 9mm thick insulation on it. It is used as underground cable to carry the supply from the system to the fence wire. It is also used to interconnect sections of fence length.
- h. **Fence Posts:** The prefabricated posts are used to carry the fence wires along the boundary wall to protect the premises from any type of intrusion. The posts used are MS Pre-fabricated duly galvanized to ensure protection against rusting and long life. The details of posts are as under:
 - a. Pre-fabricated Corner posts: 40mm sq. post duly galvanized of 5 feet length of which 1 foot will be grouted into the wall.
 - b. Intermediate posts: 25x25x3mm T angular duly galvanized of 5 feet length.
 - c. Support posts: 25 NB Class 'B' post for every corner post.