

ElectroWire

Electrified Fence Intrusion Detection System



System Overview

Geoquip Limited introduces the latest generation of the Non-Lethal Electrified Fence. The ElectroWire System operates on dual electrifiers to enable each adjacent conductor wire to function on a different electrifier. An alarm condition is signaled under the following conditions:

- /// When any wire is grounded
- /// When wires within a group connection are cut
- /// When adjacent wires touch

ElectroWire provides independent alarm activations for each of the above conditions. The system provides a painful, but otherwise harmless electric shock to persons tampering with, cutting through, or climbing over the barrier provided by the electrified wire structure.

Features

- /// Psychologically powerful deterrent factor
- /// Latest energiser technology
- /// May be retrofitted to existing fence structures
- /// Reliable detection capability
- /// High intruder delay factor
- /// Robust and simple construction
- /// Single ended energiser connection
- /// Resistive end of line monitoring by resistors
- /// High and low voltage operating modes available

Operation

ElectroWire comprises an energiser unit, light gauge polypropylene/stainless steel electrified wires, and interconnecting high voltage cables.

The energiser unit requires a 240V ac supply and may be fitted with standby batteries to maintain operation in the event of a mains failure.

The energiser unit may be located adjacent to the fence itself, or sited remotely with high voltage interconnecting cables linking the energiser to the fence structure.

The electrified wires forming the barrier are routed through insulators fixed to galvanised steel support poles. The height of the barrier can be tailored to suit the application.

The electrified wires are naturally elastic and tension is maintained within the wires by this inherent elasticity. This feature eliminates the need for tensioner units. Stresses placed on the fence structure are minimal as the electrified wires require a very low tension to maintain the stability of the structure.

In the high voltage mode of operation, the system monitors the status of the wires between each high voltage pulse to determine whether an alarm activation should be signaled.

In the low voltage mode of operation, the system operates as described in the high voltage mode of operation with the exception that the high voltage pulses are inhibited.

In low voltage mode of operation, the power consumption of the unit is dramatically reduced.

Energiser Details

The energiser unit provides two high voltage outputs with respect to ground. One output is positive with respect to ground while the other output is negative. When the high voltage mode is operational, pulses of up to 10,000 volts are applied to the wires at a repetition rate of 1.2 seconds.

The energiser complies with the requirements of EN60335-2-76:1999 with the maximum energy delivered by the system not exceeding 5 joules.

Electrified Wires

The electrified wires used with the ElectroWire system are of composite construction with the longitudinal strength provided by polypropylene strands and the electrical path provided by stainless steel wires interwoven within the lay of the polypropylene material.

This construction offers the advantage that a very low longitudinal tension is required within the wires to maintain the stability of the structure. Furthermore, because the physical strength of the wires is lower than steel or other fully metallic wires, the system is harder to defeat by climbing over the barrier using the wires as steps.

Electrified Wire Configuration

The electrified wires are configured in a unique zig-zag arrangement designed to maximise the difficulty required to defeat the system. Actions in which the wires are spread to make a gap large enough for a body to pass through are detected through contact with adjacent wires. Placing an insulated ladder or other climbing aid will cause substantial lateral deflection of the electrified wires, also resulting in detection through contact between adjacent wires and/or the ground plane wires which form part of the barrier.

Insulators

Nylon rod insulators maintain the correct wire spacings and are designed to snap off if more than 20kgs force is placed on them. Climbing the posts using the insulators is therefore impossible. Insulators are loaded with carbon black which provides UV resistance.

Specifications

Application

To provide an electrified fence deterrent system as a new build construction or as a retrofit solution to existing fences.

Zone Length

Fully configurable up to a maximum of 5 km. Security applications are unlikely to require zones in excess of 150 m or less when used in conjunction with CCTV verification.

Fence Length

5km with 12 fence wires or 2.5km with 24 fence wires.

Energiser Dimensions

600mm (H) X 400mm (W) X 300mm (D)

Operating Temperature

-40°C to +70°C

Power Requirements

240V ac

High Voltage Characteristic

10,000 volt maximum positive or negative pulses applied at a repetition rate not greater than 1 pulse per 1.2 seconds.

Detection Capability

Grounded wires, cut or broken wires, and short-circuited wires. Alarm conditions signalled by dry relay contact outputs.

Maintenance

By regular visual inspection of barrier condition.

Warranty

12 months from date of completion of approved installation.

For further information and details of your nearest approved installer, contact:

GEOQUIP LIMITED

Kingsfield Industrial Estate, Derby Road, Wirksworth, Derbyshire, DE4 4BG, UK
Tel. :+44 1629 824 891 Fax :+44 1629 824 896

e-mail : info@geoquip.com
www.geoquip.com