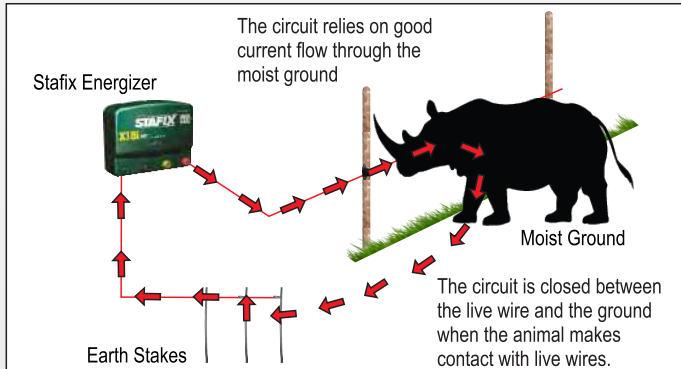


GETTING DOWN TO BASICS

Basic Circuits and Wiring Configurations for an Electric Fence

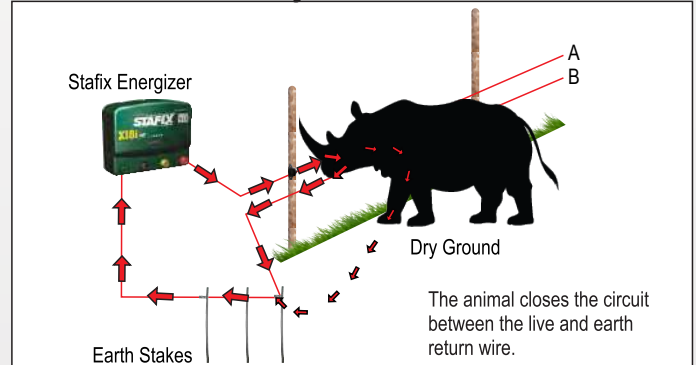
For an electric fence system to work effectively one has to understand and correctly apply certain basic principles. An electric fencing system comprises of three components: the energizer, the earthing system and the fence line itself. Link the three together and one has an electric fence. Close the circuit between the live wire/s and the ground or earth return wire/s and one has a circuit through which electrons (electricity) can flow thereby delivering the shock. If one, or more, of these three components is faulty, the whole system will be faulty.

Basic Circuit for Moist Conditions



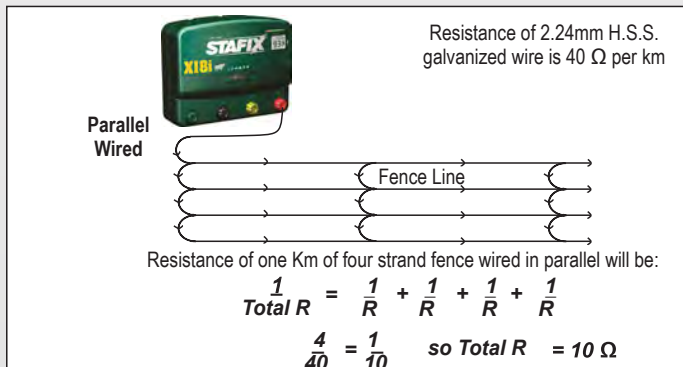
Moist ground is a good conductor of electricity, so in this circuit the electricity will flow from the Energizer, along the wire, through the animal closing the circuit, back through the ground to the earth electrodes and on up into the energizer thereby completing the circuit and delivering the shock.

Basic Circuit for Dry Land Conditions

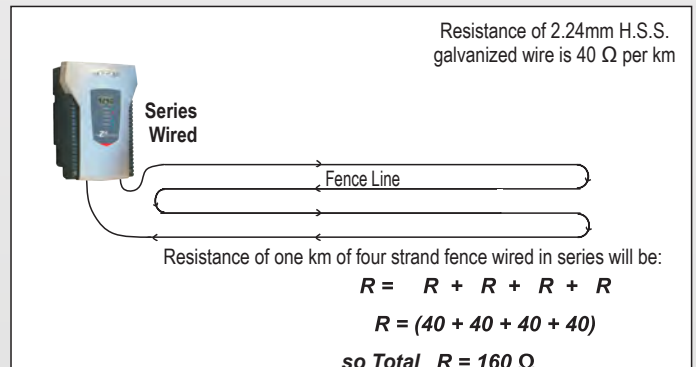


Dry ground is a poor conductor of electricity. In this circuit one adds an earth return wire (B) to the fence. The animal now closes the circuit between the live wire (A) and earth return wire (B) and so one does not rely on the poorly conductive dry ground to close the circuit.

Parallel vs Series Wired Circuits



Parallel wiring reduces the resistance of the fence line thereby enabling it to deliver a more powerful shock but it is less sensitive to shorting. This makes it more suitable for livestock control but is less suitable for security fences.



Series wiring results in one long wire thereby increasing the resistance of the fence. This circuit is generally used for security fencing. Short out any wire and the monitor will trigger an alarm.

The Earthing System

We cannot stress enough the importance of good earthing. A poor earth system will greatly reduce the effectiveness of your electric fence.

Do's and Don'ts of Earthing

DO:

- Insert at least three 1,2m long earth stakes at the energizer
- Place the earth electrodes 1,2m apart
- Connect the earth stakes together by using a single length of underground cable
- Keep earth stakes at least 2m away from any mains power
- In an urban area install additional earth stakes every 30m
- In rural areas install additional earth electrodes every 100m.

DON'T:

- Connect more than one energizer to an earth stake
- Connect your energizer earth to ESKOM or TELKOM's earth stakes
- Allow the earth system to touch any part of a building
- Connect the earthing system to water pipes
- Insert earth spikes where they can be tripped over
- Use unlike metals e.g. Copper to Galvanized, as this will cause electrolysis.