HSB

A Munich Re company

Electric fencing

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

Equipment description

An electric fence produces a minor electric shock to animals to train them about the farm boundaries. Electric fences are mainly found on farms that raise roaming animals such as cattle, equine, goats, sheep, and pigs. Electric fencing is also used for livestock and crop protection by deterring wild predator or nuisance animals from entering the farm boundaries.

An electric fence system creates an electric current that starts at a controller, passes through wires and through an animal who brushes against the wires. The current then passes through the ground back to a driven electrode connected to the controller, completing the electric circuit. An irritating and startling electric jolt is experienced by the animal, but no serious injury occurs. Controllers can be powered by standard electric power, battery, or a battery/solar combination. Most electric fences use bare wire; however, equine farms may use white plastic-coated wire to help horses see the barrier. The controller produces pulsing electricity usually ranging from 1,000 volts for swine to 5,000 volts for predator deterrent or for managing livestock with thick coats. Voltages in the range of 2,000 to 3,000 volts are most common for cattle and equine. The electrical conducting wires are attached to posts with insulated connectors. The fence wire is usually a solid conductor. Several solid conductors may be installed at incremental heights on the posts depending on the animal height and restraint requirements.

The best source of information and directions for installation, safety, and maintenance for electric fencing is the owner manuals provided by the original equipment manufacturer (OEM). Replacements can be obtained from the OEM or the OEM website.

Maintenance tips

- Inspect insulator terminals for sun fading and cracking. Replace regularly as needed.
- Inspect ground wires and rods for corrosion. Replace as needed. Rust is not a good conductor.
- Check fence lines regularly to make sure all vegetation is trimmed back away from the conductors.
- Only use wire specifically made for electric fencing, rated to 20,000 volts or more. Ordinary cable is not sufficient for electric fences.
- Proper grounding of the fence system is very important. Use the specified hardware and ground-clamps to securely connect ground wires to ground rods. Do not use hose-clamps or wrap loose cable around the ground rod.

Failure/loss prevention tips

- Make all wire-splice repairs using properly designed splicing devices to prevent premature failures.
- Damage to fence controller from lightning is a possible failure. Reduce the chance of damage with lightning diverters and surge suppressors.
- Most property insurance carriers require that the controller be mounted outside of building. This is due to arcing that might occur if a lightning surge follows the fence back to the controller.
- Bury ground rods deep in solid earth in accordance with manufacturer's recommendations.

Energy savings/conservation tips

- It costs about $1 per month to operate a typical 10-watt electric fence controller. The cost can increase if the fence system is faulted and continuously loaded.
- Energy can be conserved by keeping vegetation away from the fence. If green vegetation contacts fence wire, the current will short to ground similar to when an animal makes contact.
- If an electric fence is used for animals in a snowy climate, keep the lowest wire above the snow line to conserve energy.
- Do not mix galvanized electrical conductors with copper or any other metal. Electrolysis will result and cause pitting of components and poor conduction.

Safety tips

- Whenever making repairs to the fence, unplug and lock-out/tag-out the controller plug.
- Make sure to only tension the fence wires according to the fence manufacturer's recommendations.
- Never use barbed wire as an electric fence. Animals or people could become entangled on the wire resulting in a continuous electric shock.
- Never work on or around electric fence when thunderstorms are in the area.

HSB
One State Street
P.O. Box 5024
Hartford, CT 06102-5024
Tel: (800) 472-1866

HSB.com

ES046 (Revised 2/21, 013)