

10

Steps To Fencing Success

1

Understand how an electric fence works

Learn how an electric pulse moves and shocks through the fence circuit.

2

Different fences for different animals?

The hardest animal to fence determines the style of fence used.

3

Know the types of electrifiable fence

Temporary, Semi-permanent and Permanent designs for containment.

4

What type of fence do I need?

For portable and semi-permanent options, netting and multistrand are the solutions. Find out the different uses of each style.

5

How do I estimate my fence needs?

The benefit of portable electric fence is its ability to conform to any pasture size or shape. Diagrams designed to help users determine their fence needs by length.

6

Energizer in's and out's

The right energizer leads to an effective fence experience, the wrong energizer results in escaped animals.

7

Do I need ground rods?

Yes! They complete the electric fence circuit (energizer, fence, animal, ground rods, energizer). If not enough ground rods are used, or it's too dry, the ability for the pulse to complete the circuit is lessened.

8

How do I install fencing?

Learn the basics of preparing and installing electrifiable netting and multistrand fence.

9

Testing your fence

Fence testers are used to check and troubleshoot fence performance. If buying a fence for the first time, be sure to add a fence tester to your cart.

10

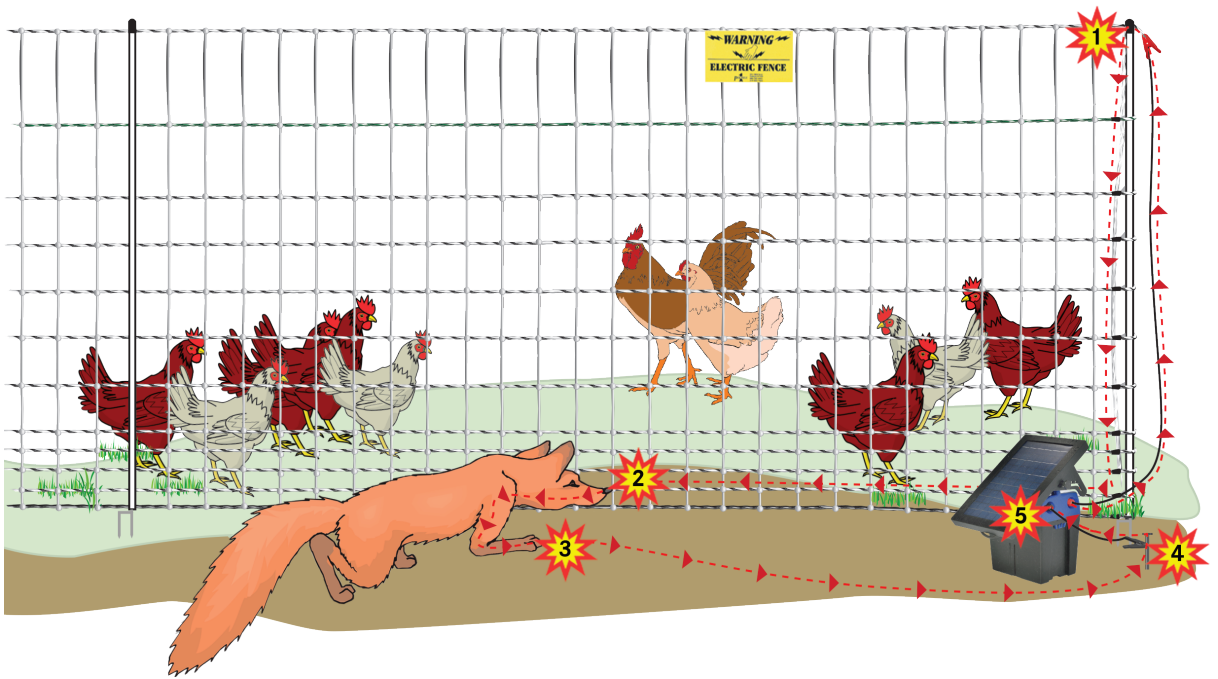
Troubleshooting

Did we mention troubleshooting? Tips, advice and what to do when your fence isn't performing as expected. Covers both energizer and fenceline problems/solutions.



STEP

1 How Electric Fence Works



When animals or predators touch a fence...

1

The energizer sends an electric pulse to the fence's conductors.

2

The pulse travels through the fence until it contacts an animal.

3

The pulse then travels into the soil when an animal touches a conductor.

4

The pulse travels through soil, to energizer's ground rod.

5

The circuit is completed when the pulse returns to the energizer, shocking animal.

A properly electrified fence measures at least 3000V

MORE ELECTRIC FENCE FAQs, HOW-TO'S IN-USE PHOTOS AND VIDEOS!



SCAN ME

Will the shock hurt my animals?

No! The pulse lasts less than 3 milliseconds—which is too brief to cause harm. It's startling and only briefly painful to the animal, producing no damage or injury.

Do I really need a fence energizer?

Yes! In order for an electric fence to keep livestock in and predators out, it must be connected to a fence energizer. Using netting or other electric fences without a suitable energizer will result in escaped livestock and predator attacks.

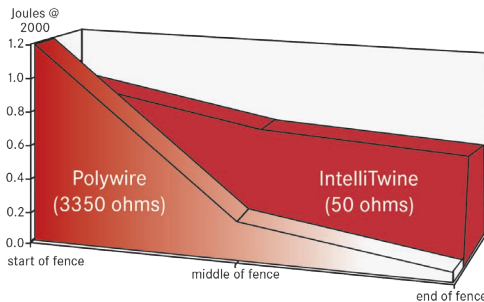
Why conductivity & resistance matter

High conductivity (low ohms/ft) enables the pulse energy and voltage to remain high all the way to the far end of the fence.

Poor conductivity does the opposite, as you can see in graph below.

1. We installed two 1500 ft fences side by side.
2. One fence used a good conductor (IntelliTwine). The other fence used polywire with only stainless steel filaments.
3. We allowed grass to grow and contact the far 50% (750 ft) of each fence.
4. We then measured available joules at the points shown (same energizer for each).

Conclusion: One will allow animals through the fence at the far end. The other won't.



Farmstore Polywire

Resistance is 65 times higher—3300 Ω per 1500 ft. So its conductivity is much lower than IntelliTwine. The difference? It has only stainless steel filaments in it.

Premier's IntelliTwine

Resistance is 50 ohms (Ω) per 1500 ft. Why? Because it has both stainless steel and tinned copper filaments.

STEP

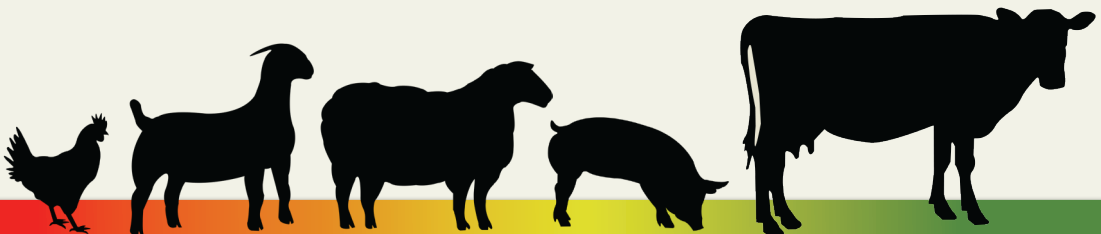
2

Do Different Animals Need Different Fences?

Yes & No! Fencing for the hardest animal or species to contain will work for the easiest to contain.

Example 1: Chickens and goats—fence for the chickens.

Example 2: Goats, pigs and cows—fence for the goats.



HARDEST

EASIEST

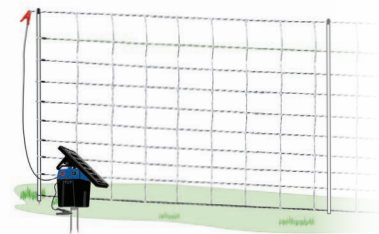
3 Fence Types

Ask yourself, what type of electric fence do I need?

1. TEMPORARY / PORTABLE

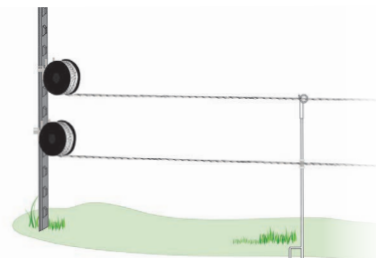
Moved daily/weekly

For temporary/portable fence—this is your best choice! Speedy rotational grazing set-ups and other situations when you need to frequently move the fence. Temporary electric fences are quick and easy to install or remove.



Netting

Having more conductors and visible material, it's our preferred fence for all species. Best for areas where no perimeter fencing currently exists.



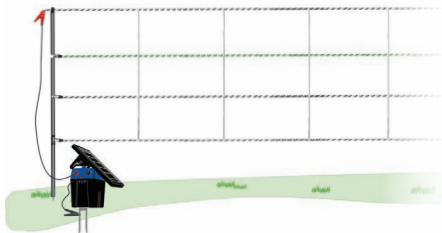
Multistrand with Reels

Less cost per foot of fence used, but more time to install. Better suited for animals that have an existing respect for electrified fences.

2. SEMI-PERMANENT

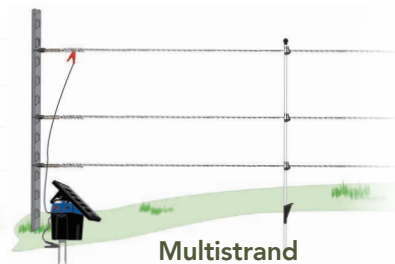
Moved seasonally

Use a semi-permanent fence when you don't need to move it as often. Electric netting or a series of conductors under low tension, supported by stronger/thicker posts than temporary/portable fences.



Netting

QuikFences offer more conductors and visibility for added security. Their thick posts reduce sagging over lengthy grazing seasons.



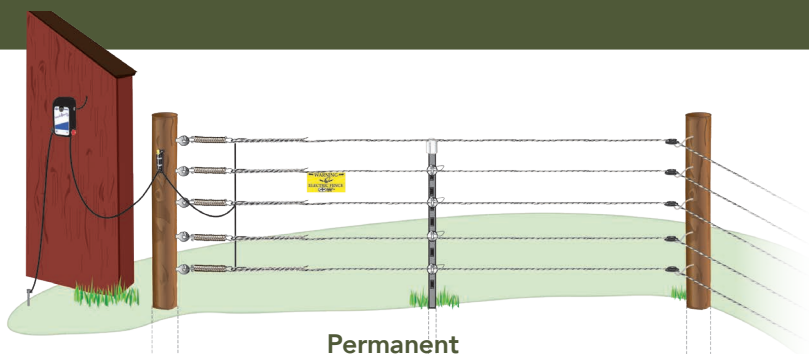
Multistrand

Steel or heavy-duty plastic/fiberglass posts subdivide pastures for the season. Use within permanent fence setups (not as secure as netting).

3. PERMANENT

Never moved

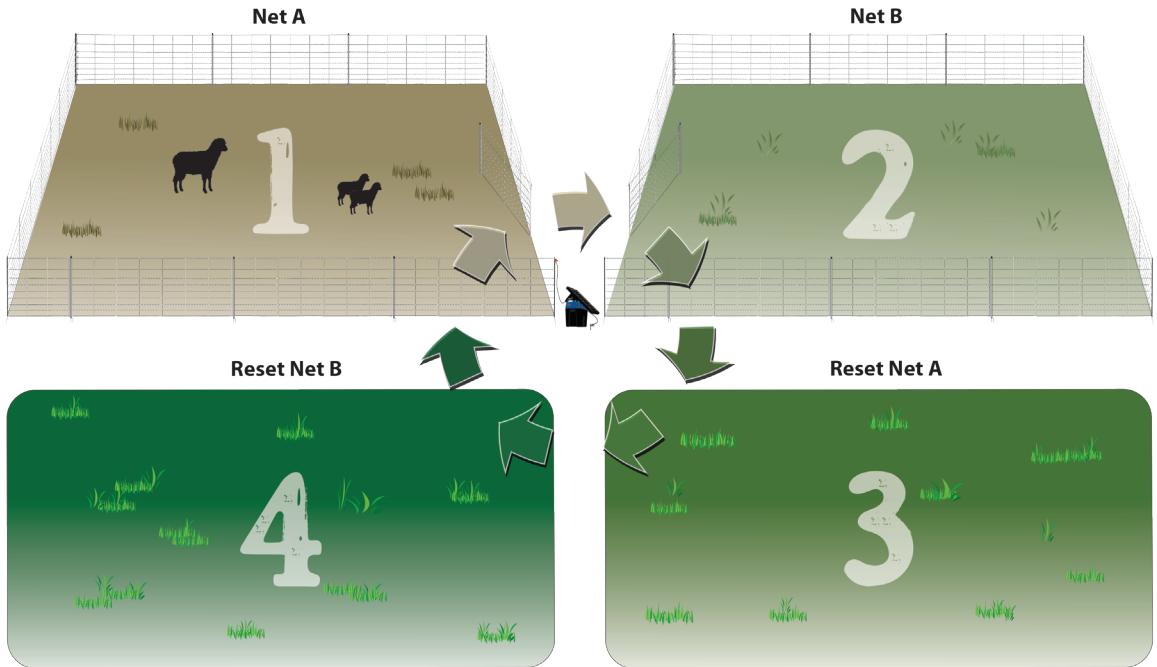
Permanent fences—more reliable than other options; more expensive and harder to install. Permanent fences require wood or steel posts to support high-tensile wires, woven wire, rope or tape.



Permanent

When you're planning to never move the fence. Best for farm or pasture perimeters. Wood and steel posts provide the long-term support. Thick, heavy conductors (6.0mm electroplastic or metal wire) carry the pulse throughout the fenceline.

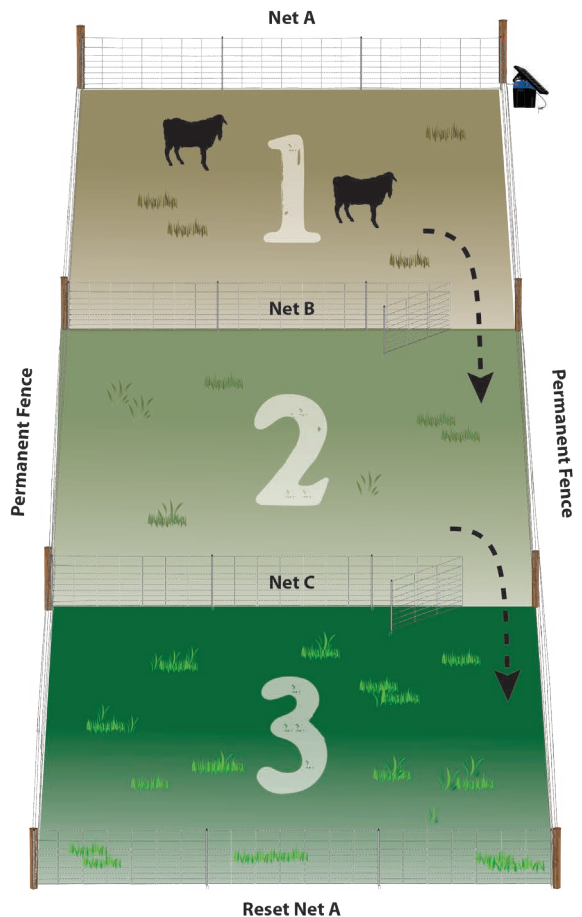
Rotational Grazing



Rotational grazing is the practice of frequently moving grazing livestock from one small pasture to another one nearby.

The majority of our fences at Premier are for rotational grazing—lightweight and easy to move so animals are frequently receiving fresh grass. The portability means paddocks can be small. Large pastures can be split into small sections for a few days of grazing. This prevents sections of the pasture from becoming overgrazed, introduces the flock or herd to fresh grazing regularly and gives pastures needed rest between bites.

Use the diagrams on this page to visualize how to move or leap-frog fences for grazing. These are solutions for small pastures within existing fences and also for grazing where you have no preexisting fences.



What Do I Need?

Netting

us

Multistrand

It's a complete electric fence with posts already installed. It goes from a tidy roll to an installed fence within minutes—simply attach a suitable energizer to provide power. It's portable, effective and easy to use.

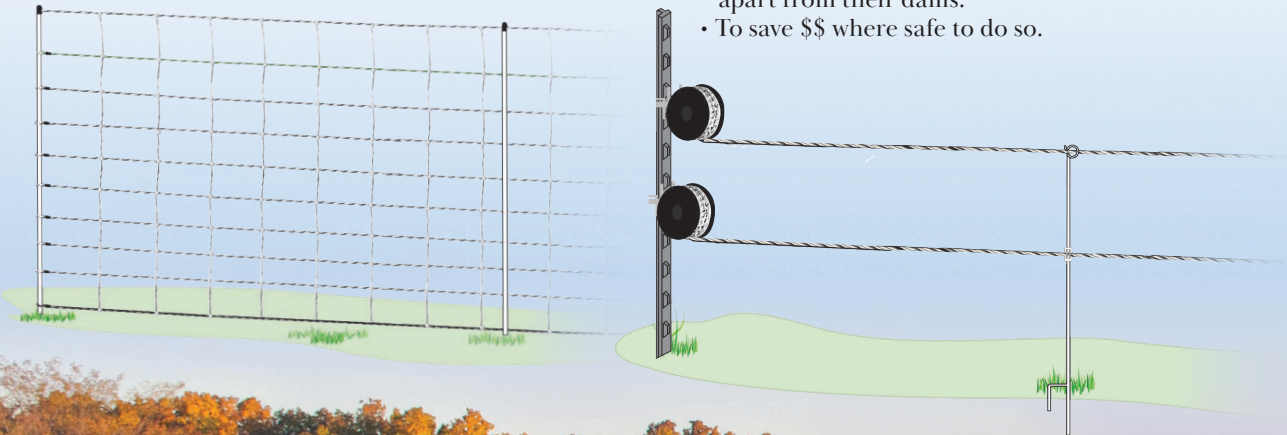
Use this type of fence...

- In areas of high predator pressure.
- As boundary/perimeter fences.
- Where escapes are costly (both loss of stock or damage caused by animals).
- To save time in building fence.

Individual conductors strung between posts. You select posts, conductors, and reels to build a fence of your design. Adjust your pasture shape and size as you rotate the flock through the field. Simply set the posts and insulators, attach the conductors, tension and finally connect to a suitable energizer. Well suited for animals already trained to electric fence.

Use this type of fence...

- To subdivide large pastures between secure perimeters.
- When young stock are allowed to go underneath the single strand and graze apart from their dams.
- To save \$\$ where safe to do so.



STEP

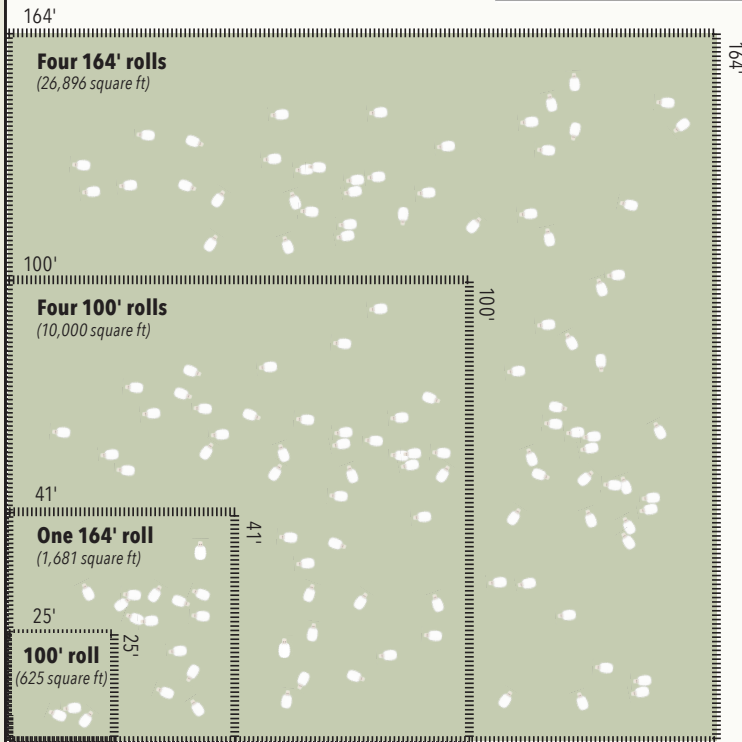
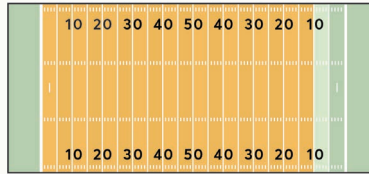
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Estimating Fence Needs

A primary benefit of netting and other portable fences—you can choose not to fence the entire acre. Instead, you can portion the acre into manageable paddocks with your choice of dimensions, moving the fence as needed.

208.71'

**ONE ACRE =
ROUGHLY THE SAME SIZE
AS A FOOTBALL FIELD**



One Square Acre =
208.71 ft per side
(43,560 square feet).

Four 164 ft Nets =
164 ft x 164 ft square
paddock, just shy
of 2/3 acre.



6 Energizer FAQs

Q. What is a fence energizer?

A. A device that takes in electrical energy from an outside source (either a battery or a 110 volt outlet). The energizer then pushes the energy out through the fence (*positive*) terminal in very brief, high voltage, high amperage pulses. The ground (*negative*) terminal's purpose is to absorb any excess pulse energy back into the energizer.

Q. What is an electric fence?

A. An extension of the 2 terminals (fence and ground/earth) of the energizer. The earth/negative terminal is extended by driving metal rods into the soil and connecting them to the ground terminal with a conductive wire. The outbound/positive/fence terminal is extended by attaching conductive wires to it. They are suspended above the soil and kept separate from the soil by insulators or non-conductive posts.

Q. How high is the voltage of a pulse?

A. Up to 14,000 volts. That sounds extreme—but static electricity is often as much as 25,000 volts.

Q. How brief is the electric pulse?

A. Less than 3/10,000 of a second.

Q. Will I feel anything if I touch an energizer's terminal?

A. **Yes & No.** You will feel nothing if you touch only the ground terminal. But if you accidentally touch both the ground and fence terminals at the same time (we strongly advise against this!) you will feel the full impact of the pulse. We never contact the terminals (on or off) without first touching both terminals with insulated metal wire (to displace the charge)!

Q. What happens when grass touches an electrified wire?

A. The fence wire is “pressurized” with excess electrons from the pulse. Green vegetation is a conductor—particularly when wet. When it contacts an energized wire, the pressurized energy (measured in volts) is pushed down through the moisture in the stem to the soil. Folks call this a “leak” (similar to a hole in a water hose) or a “short.”

Q. What happens when an animal touches energized wires?

A. The high voltage of the pulse pushes electrons through the animal's point of contact (often the nose or ears), then through the body's tissue and fluids and out through the feet/hoves/paws into the soil.

Q. Why is animal weight a factor?

A. The weight of a heavy animal compresses the soil. This reduces electrical resistance of the topsoil and

increases the joules of energy that can flow through the animal. This explains why heavy animals are more affected by electric fence and light animals less so. Weight (or the lack of it) explains why calves, lambs or goat kids seem to be less affected by a pulse than adult cattle, sheep, goats or horses.

Q. Why does grass color matter when choosing an energizer?

A. **Green grass** indicates the soil is moist, so the soil will have less resistance to a pulse.
Brown grass indicates the opposite.

Q. Which species are most affected by an electric fence pulse?

A. In order from most to least affected: pigs, horses, cattle, canines (wet noses, bare pads), raccoons, sheep, goats, deer, geese, chickens and rabbits.

This assumes adult animals are contacting the fence with their nose, beak or paw.

Q. I'm confused by all the energizers that Premier offers. Why so many?

A. Some users have strong preferences based on prior electric fence experience.

Q. Why is Premier's energizer know-how so unique?

A. Other firms may supply more units—but no one supplies more units (50,000) **direct to end-users and tracks the results.** We know what failed, when and why.

Q. How do I make the right choice?

A. If you have questions, contact Premier directly by phone or email. Our experts have years of experience and can help.

3-YEAR WARRANTY

1. If an energizer fails within 3 years of its date of purchase, we will replace the failed module or unit at our cost.

Note: Policy does not apply to failure due to abuse or neglect. Warranty does not cover the batteries.

2. Free next-day air shipment of warranty replacement energizers.

3. Five-year assurance against energizer obsolescence. Includes repair or replacement of any nonworking units for up to 5 years. During the 3-year warranty period, Premier pays for the replacement cost.

What type of energizer should I purchase?



SCAN ME



Highest portability and quickest to set up



Power more fence for less \$\$

ALL-IN-ONE SOLAR

- ✓ Very portable and quick to set up, operable in minutes.
- ✓ Popular with new electric fence users for its ease of use.
- ✓ Attached solar panel will recharge the battery on sunny days.

PLUG-IN & BATTERY

- ✓ Less cost per joule of output than all-in-one solar units.
- ✓ Best for fences that experience high weed contact.
- ✓ AC/DC combination adapts to either battery or plug-in power.

Low vs High impedance energizers

Impedance is similar to resistance. For energizers it means the level of ohms (resistance) that matches an energizer's peak output. If low ohms, then it's a low-impedance energizer, etc.

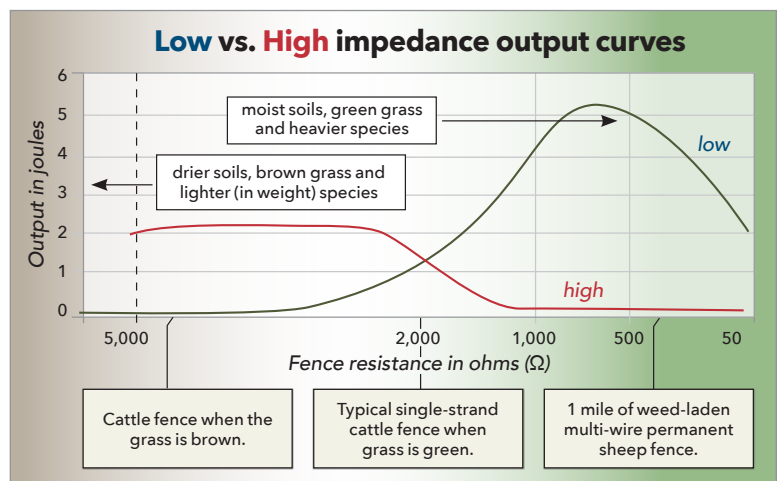
The first fence chargers (60 years ago) were high-impedance units.

Their maximum output occurs when the fence is weed-free. Unfortunately, they create heat when in contact with weeds, creating a burn path or melting electroplastic conductors. Too much fire risk.

Low-impedance energizers soon arrived.

They cope well with high weed contact but less so with dry soils or poor conductors.

They are very effective against low-resistance animals (cattle, horses, pigs) standing on moist soils.



Fire Risk!

Avoid “continuous current” energizers for electric fence

In 2016 a fire that burned grass, trees and a UTV was only 30 ft from a barn when emergency services arrived. The fire occurred because the property owner used netting with a “continuous current” fence energizer.

Q. What is a “continuous current” fence energizer (below)?

A. It’s a very old design that is also very cheap to manufacture—thus attractive in price to new buyers.

Unlike the great majority of energizers sold today, it does not release an intermittent pulse.

Instead, it charges the wire continuously, as the label indicates, to no more than 1200 volts. When a conductor attached to the energizer finds a conductive path to the soil (via grass, stray piece of wire), a continuous flow of electricity occurs creating a buzzing sound.

If the right conditions are present, it does not take long for the contact to create the necessary heat to ignite the combustible material.



Q. How do pulsed units work?

A. Most modern fence energizers send a very brief (less than 3/10,000 of a second), high voltage (2000-6000 volts) pulse down the conductor every 1-2 seconds. Though powerful enough to deter animals, a pulse this brief and infrequent rarely poses a fire risk when the conductor is near combustible material. There simply isn’t enough time for heat to build and allow ignition to occur.

Q. The label calls this a “low impedance” energizer. Aren’t they safe?

A. Until now that was true. This is the first time that we’ve seen “low impedance” on the same energizer label as “continuous current.” Unfortunately, this encourages folks to buy an energizer that will damage netting and is a potential fire risk.

Q. How do I make the right choice?

A. If you have questions, contact Premier directly by phone or email. Our experts have years of experience and can help.

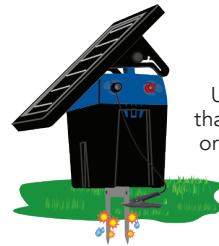
STEP 7 Ground Rods?

Yes! The ground system is an essential component of any electric fence.

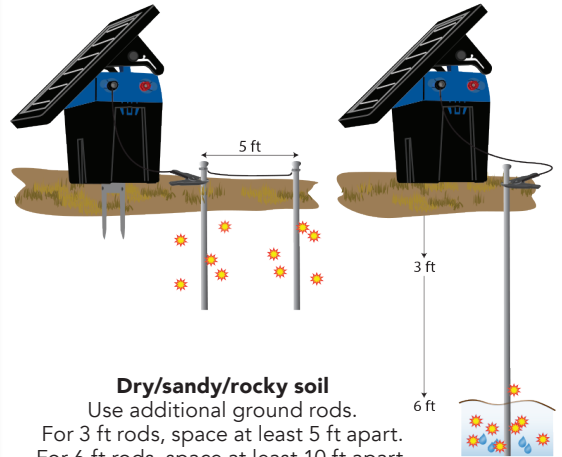
Ground rods guide the electric pulse from the soil back into the energizer, completing the fence circuit.

Moist soil—Included or standard length ground rods are all that’s needed for an effective circuit.

Dry, sandy or rocky soil—The higher the resistance of the soil, the more ground rods that are needed to return the pulse to the energizer.



Moist soil
Use the ground rod that is included in solar or plug-in/battery kits



Dry/sandy/rocky soil
Use additional ground rods.
For 3 ft rods, space at least 5 ft apart.
For 6 ft rods, space at least 10 ft apart.

Rule of thumb:

Recommendation is 3 ft of ground rod per joule of output from the energizer.

How To Install Fencing



Netting

- 1 Prepare the fenceline by mowing or trampling the grass.
- 2 Unroll and unfold the net. Lay the fence along the path.
- 3 Insert an end post and follow along the path of the fence, pulling the line posts tight and pushing them in.
- 4 Install additional support posts where needed (ends, curves, corners).
- 5 Connect energizer and check voltage with a fence tester.

Connecting multiple nets. Nets have a stainless steel clip at each end that slide into each other. Keep in mind that the number of nets you're able to connect will depend on your energizer size.

Excess net. Make a complete U-turn with the excess netting and erect it back alongside the original fenceline. The 2 nets can touch one another (unless the netting is pos/neg).

Storage. Fold the net by picking it up sequentially by the posts. Don't roll it like carpet. Use the strings to tie the net into a roll.



Multistrand

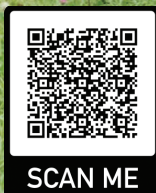
- 1 Install wood or steel T posts at ends and corners.
- 2 Place line posts every 20–35 ft throughout the fenceline. Distance depends on terrain.
- 3 String conductors onto posts via clips or insulators. One for each strand of fence.
- 4 If using reels, wind to add tension. If not, pull conductors tight and tie at the terminal insulators on end posts.
- 5 Always use an energizer to electrify the fence and a tester to check the fence voltage.

Connecting to permanent fence. Attach a conductive strand to the perimeter fence to act as a "feeder wire" to the portable fence. Connect the feeder to the multistrand fence with a PowerLink®. This eliminates the need to move an energizer with each move of the fence.

Save time with wind-up reels. Stringing conductors onto posts is made easier and faster when the rope, tape or twine is on a reel. No tangles or kinked lines. Excess material stays on the reel; no need to cut "too-long" conductors.



MORE TIPS,
PHOTOS AND
VIDEOS ON
INSTALLATION



Too much vegetation?

When touching live strands, grass drains energy from an electric fence.

Four solutions:

1. Move fence over a foot or two and mow. Return fence to mowed path (see photo above).
2. Spray grass under fenceline to control growth. Without herbicides in areas with rapid grass growth, weeds can render a fence useless.
3. Move netting or multistrand fence a foot or two over onto the closely grazed portion of pasture where the grass is shorter.
4. Buy an energizer large enough to cope with the extra weed contact.

With good planning, installing your own fence doesn't need to be intimidating.

Does the fence have to make a circle or square?

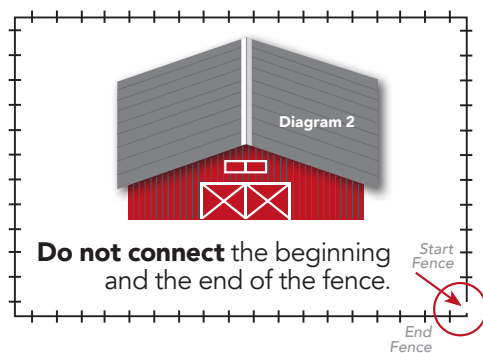
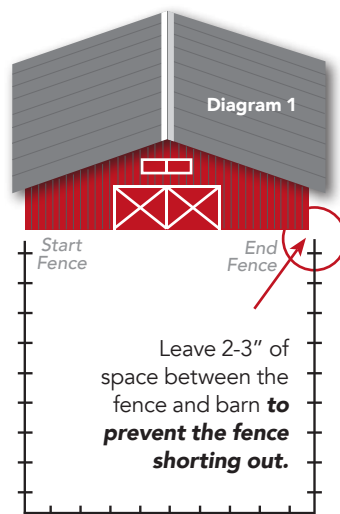
No! The pulse path is from the fence to the soil, back to the energizer.

Diagram 1

The fence doesn't have to make a loop.

Diagram 2

The fence doesn't need to **(and should not!)** "tie back in" to itself. Leave the ends unconnected.



Training animals to the fence

Train animals to electric fence by installing netting along a fence they cannot escape. Electrify. Introduce animals to net fence. After a few shocks, animals will learn to respect electric fence.

STEP 9 Test Your Fence!

Checking voltage with testers and meters

Buy a fence tester and use it!

- Not monitoring or knowing the voltage of your fence means escaped animals or predation.
- Test to ensure a min. voltage of 3000V at the end of the fence. Voltage is the force behind the pulse, joules is the size of the pulse. The higher the voltage, the more force behind the pulse.

Regularly use an electric fence tester to monitor voltage

You want at least 3000V on fence—that's enough to keep predators out and livestock in.

FENCE	ENERGIZER	BATTERY
Measure voltage at the furthest point from the energizer. You want 3000V.	Unhook the fence, measure voltage between the terminals. You want 5000V.	A battery is too low in power if a meter reads less than 12.2V.

Fence testing mistakes

- Multimeters are not able to test fences (voltages are too high).
- If receiving an inconsistent reading, check voltmeter's battery.

Tester Types

What do they do?

1. Digital Fence Testers

Checks the voltage of energizers, fences *and* batteries. Traditional fence voltmeters only check fence voltage.

Multimeters are destroyed when testing the high voltages of fences and energizers. A digital read-out accurately shows the voltage.

To use, insert ground probe into soil and touch opposite tip to fence. For batteries, touch to terminals.

- Battery reading is by 1/10s (e.g., 12.6V).
- Multiply fence/energizer reading by 1000 (5.5 is 5500V).

2. Digital Voltmeters

Digital voltmeters provide a high level of precision when compared to light up fence testers. They provide a reading to the nearest 100 volts.

Why is that useful?

If a branch falls on a fence and the voltage drops from 5500V to 4500V, a light-up tester doesn't indicate the degree of change. A digital voltmeter allows the user to identify all changes, big and small, in electric fence circuits.

Fence tester Do's & Don'ts...

- DO** buy one. A good tester tells you the status of your electric fence.
- DO** use it. Don't let your animals tell you when the fence voltage is too low.
- DO** check the voltmeter's battery if the readings are inconsistent.
- DO** test the voltage at the farthest point from the energizer on the fenceline.
- DON'T** grab the ground probe while the tester is still on the fence.
- DON'T** use a multimeter to test fences (if fence voltage is too high, they'll break).

Leave the screwdriver in the toolbox...

The pulse will arc from the conductor to the tool, letting user know the fence is on.

Don't to do this! It is not an accurate method to determine the amount of energy in the pulse.





STEP

10

Troubleshooting

Determine if the problem is with the fence or energizer

How to check...

- 1 First, turn off the energizer.
- 2 Disconnect the wires going to the fence and ground rod system.
- 3 Turn the energizer back on.
- 4 Then measure the voltage on the energizer between the 2 terminals (fence and earth) with a digital fence voltmeter or other fence testing device. Touch one end to “-” earth terminal and the other end to “+” fence terminal. If the tester reads under 4000V, the energizer (or possibly the battery if it’s a battery/solar energizer) is the problem.
- 5 If the tester reads more than 4000 volts, the energizer is working properly and the fence is the problem.

IF THE FENCE IS AT FAULT...

How to find the fault(s)

First, re-attach the fence and ground wires to the energizer and turn it on. Then you must walk or drive along the fence looking for situations that are reducing the voltage.

1. If you have a Fault Finder, use it. The arrow will tell you which direction the energy is flowing (leaking). Follow the fence from the energizer outward. Move in the direction of the arrow, testing as you go until you arrive at the fence’s problem.

Note: A Fault Finder can tell which section of net is at fault if you touch it to the clips where two nets join. But it is not able to locate the exact location within a net because energy flows in multiple directions within a net.

2. If you don’t have a Fault Finder, but do have a voltmeter or fence tester: Walk or drive along the fence.

a. Netting—look for:

- The lowest live strand touching a post’s metal spike.
- Damaged strands touching the soil.
- Netting touching a wire or steel post.



b. Wire, twine or rope fences—look for:

- Damaged or broken insulators.
- Any point where an energized wire touches the soil, a steel or wood post or a non-energized wire. Separate them to prevent voltage loss.
- Branches lying on the fence, forcing wires together (*above*). Remove them immediately. Their weight can strain fence components.

c. Listen for snapping sounds as you walk along a fence. These occur when a conductor is close to a grounded wire, stake, tree or large green weed.

IF THE ENERGIZER IS AT FAULT...

Plug-in unit

1. Use a test light to check if the 110V outlet is working.
2. If the test light works and the energizer does not, call Premier.

DC battery unit

First determine whether it's the battery or the energizer that's not working.

1. If it's a 12V energizer, carry it to a nearby vehicle. Attach the input cords carefully to the battery.
2. If the energizer works, check the unit's battery voltage. It should measure at least 12.2V.
3. If the energizer does not work, call Premier.

Is the energizer "On"?

Push-button energizers must have their on/off switch activated.

Solar unit

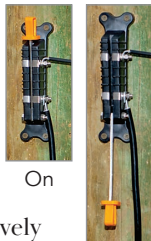
1. Disconnect energizer from the battery.
2. Carry it to a nearby vehicle. Attach the input cords carefully to the vehicle's battery.
3. If the energizer works, check the unit's battery voltage. It should measure at least 12.2V.
4. If the energizer does not work, call Premier.

Energizer testing tips

- Testers that require batteries will give no reading or a misreading if low (inconsistent pulse voltages).
- Fault finders are unable to test fence energizers.
- If a battery energizer's light is pulsing but less than 3000V is measured across the terminals, check the battery charge level (with a digital battery tester).
- **When calling to troubleshoot, be at the energizer, have a fence tester and a battery meter available.**

- d. **Separate the fence into parts**—by turning off switches if it's a HT permanent

wire fence, or by disconnecting portions of electric netting. Then progressively reconnect it, checking voltage as you do so. When the voltage drops, you've located the problem.



3. **If no faults are found** the soil may be too dry. Conventional fence systems rely on soil moisture to be effective. However, not all areas have the required moisture.

If that's the case, a **Pos/Neg fence (see at right)** can be used. These fences are wired to allow the use of every other horizontal strand as an extension of the ground terminal, eliminating the dependence on soil moisture to carry the energizer's pulse.

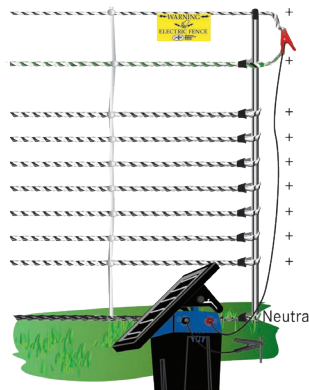
In order to receive a shock, the animal must touch both a "+" and "-" strand. Fence maintenance is very important—grass contact across both a positive and negative wire reduces voltage. Pos/Neg fences can be used as all-positive in moist conditions, if insulated and wired correctly.



(Pos/Pos)

for moist conditions

Connect both net clips together and attach energizer fence lead to net clips. Then attach energizer ground lead to ground rod.

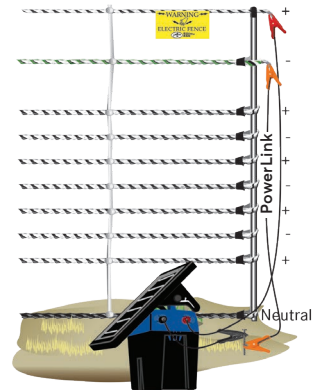


PN (Pos/Neg)

for dry conditions

Connect energizer fence lead to positive "+" net clip and energizer ground lead to ground rod. Connect a PowerLink from negative "-" net clip to ground rod.

VS



"Insulated" animals

Animals standing on dry soil or snow may not receive an adequate shock even when the fence is properly energized.

Why? Dry soil and dry snow act as insulators, reducing the ability of the energizer's electric pulse to pass through an animal. If this is the case, Pos/Neg fence systems or higher-output energizers are better adapted for such situations.