



## **SELECTING AN ENERGIZER:**

Selecting the Most Effective Electric Fence Charger  
for Your Farming Needs

## Power Wizard Mission Statement

We believe in providing the best possible quality products and customer service for cattlemen, ranchers and weekend farmers. We strive to be the leading provider of fence chargers and fence energizer accessories so that our customers can consistently protect their dairy cows, cattle and other livestock without worrying about their safety.

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*“Selecting the Most Effective Fence Charger for Your Farming Needs” is brought to you by Power Wizard electric fence energizers.*

For more information about Power Wizard electric fence energizers, visit [www.PowerWizardInc.com](http://www.PowerWizardInc.com) or call customer service at 1-800-866-2161.



***“The heart of an electric fence is your energizer and selecting the right one is crucial for an effective fence.”***

## WHY IS IT IMPORTANT TO HAVE THE RIGHT ELECTRIC FENCE CHARGER?

Farmers and ranchers have selected the electric fence solution when it comes to containing their cows, horses and other livestock because it is an affordable and safe alternative to barbed wire. Fence chargers are also used to keep animals, like rabbits, deer and raccoons, out of fenced areas such as a vegetable or flower garden. The short pulse of electric current that is delivered when the cow or cattle contacts the electric wire is just enough to keep them from trying to break through the fence.

Farmers need to select a fence charger that will deliver enough power to consistently provide the electric pulse necessary regardless of the size of the fenced area, the type of cow or cattle or the ground conditions surrounding the fence. Installing the wrong type of fence charger can lead to:

- Inconsistent delivery of electric shock.
- Inadequate strength of the electric shock that is delivered.
- Injury of livestock.
- Cows, cattle and other livestock damaging the fence.
- Lack of electrical current in an area with heavy weeds or consistent power outages.

### Select the Right Fence Charger to Effectively Contain Your Cows, Cattle, Horses and Other Livestock

Of all the methods available for safely keeping cows, cattle and other livestock contained, farmers agree that an electric fence is an affordable and effective solution. An electric fence charger provides a single pulse of electrical current per second when your dairy cows, beef cattle or other livestock encounter the fence wire. The electrical shock provided by the charger is harmless yet effective and serves as a psychological message to your cows that reminds them to stay clear of the fence.

The question is, "How do you know which fence charger is the right one for your farming or ranching needs?"



Selecting the Most Effective Fence Charger for Your Farming Needs

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## Different Types of Electric Fence Chargers

The market place is filled with fence chargers offering a wide array of solutions. Consider these facts when selecting the right fence charger to adequately and safely contain your cows, cattle and other livestock.

- Different **power source options** offer a variety of fence chargers to choose from based on whether you will use a plug-in, battery-operated or solar-powered fence charger.
- **Strength** of the fence charger is different based on the size of the fenced property and the type of livestock that will be contained or deterred.
- **Impedance technology** offers additional choices based on the ground and weather conditions of the property.

Not all fence chargers are made the same or offer the same consistent electric current depending on the conditions around and under the fence. You need to consider several different elements when selecting the right fence charger for your electric fencing needs.

## SUGGESTED ENERGIZER RANGE Fence Charger Models and Acres

The Power Wizard electric fence charger models are available in a variety of sizes to power from one acre to 2,400 acres.

110V Plug-In Energizers	
MODEL	ACRES
PW50	0 to 1
PW100	1 to 3
PW200	1 to 5
PW300	1 to 30
PW500	1 to 50
PW750	1 to 75
PW1000	1 to 100
PW1500	1 to 150
PW2000	1 to 200
PW3000	1 to 300
PW6000	1 to 600
PW9000	1 to 900
PW12000	1 to 1,200
PW18000	1 to 1,800
PW24000	1 to 2,400

12V Battery Energizers	
MODEL	ACRES
PW250B	1 to 25
PW500B	1 to 50
PW1000B	1 to 100
PW2000B	1 to 200
D-CELL /12V BATTERY	
PW350B	1 to 35
PW350B+	1 to 35

12V Solar Energizers	
MODEL	ACRES
PW100S	1 to 25
PW200S	1 to 50
PW500S	1 to 100

## THINGS TO CONSIDER WHEN SELECTING AN ELECTRIC FENCE CHARGER

There are several critical facts to consider when selecting the proper fence charger for your specific electric fence needs.

### Power Source

The first consideration when selecting a fence charger should be the source of power that will be used to energize the unit. There are three basic choices:

**Plug-in.** The most consistent, effective and cost effective power source is a 110V plug-in outlet. If the fenced area is close enough to access an electrical outlet, you will want to consider a plug-in fence charger. The Power Wizard plug-in electric fence charger models are available in a wide range of power sizes up to 2,400 acres.

**Battery-operated.** If the fenced area is away from easy access to an electric source, but close enough for frequent monitoring, battery-operated fence chargers offer a viable solution. Keep in mind that battery-operated fence chargers require frequent battery changes, in some cases on a weekly basis. It is recommended that when using a battery-operated fence charger, you have at least one back up, rechargeable 12V battery to ensure consistent electrical current throughout the length of the fence. When using a battery-operated fence charger, you will also need to check the power levels more frequently than with a plug-in model. Battery-operated fence chargers will effectively provide an electrical current for fenced areas up to 200 acres.

**Solar-powered.** The solar powered models offer consistent electrical power for remote fenced areas without the same continual maintenance of a battery-operated fence charger. Solar-powered fence chargers are an effective solution for remote fenced areas. Place the solar-powered fence charger on a section of the fence that receives 4-6 hours of sunlight each day and won't be damaged by curious livestock. Solar-powered fence chargers store energy from the sun to provide an electrical current throughout the fenced area, even over a series of cloudy days, without needing an alternate source of power. Although somewhat more expensive than a battery-operated fence charger, the solar-powered fence chargers are more ecologically-friendly and will provide effective electrical current for fenced areas up to 100 acres.

Once you have determined the power source for your fence charger, you will need to consider the types and sizes of the horses, cows, pigs, and other animals that will be corralled in the pasture.

## SUGGESTED ENERGY RANGE

### Joule Output and Animal Size

The size of the animal(s) will determine the amount of joules required by your electric fence charger. A joule is a unit of energy. It refers to the energy level of the fence charger and the amount of electricity felt in the single pulse per second generated when the animal encounters the fence.

Joule Range	Animal
.05 - .5	
.05 - .5	
.3 - 12	
.5 - 24	
.75 - 24	
2 - 24	
2 - 24	
3 - 24	
6 - 24	

## Type of Cows, Cattle, Horses, Sheep, and Other Animals to be Contained

Whether you are keeping livestock in or predators out, the size of the horses, cattle or sheep will determine the type of fence charger that will be necessary. The larger the animal and the tougher their hide, the more energy will be required to effectively produce a consistent single pulse of electrical current.

Consider not only the cows, cattle and other livestock being contained within your ranch or pasture area, but also predators such as feral pigs, rabbits or deer. The height and size of the livestock being contained or deterred also has a bearing when determining the height and number of rows of wire that will be connected to the fence charger.

Larger, stronger livestock with a tough hide require a stronger shock to be effectively trained to stay away from the wire fence. Ranchers that pasture stallions, bulls or livestock with thick hooves and foot pads should consider a more powerful fence charger for their electric fence to be effective.

### Size of the Area

When selecting the proper fence charger, the number of acres or miles of wire needs to be taken into consideration.

You will need to consider the size and shape of your farm. A square acre requires less miles of wire than a rectangular area of fencing. Additionally, the fence will contain multiple rows of wire, which can add to the confusion when selecting an electric fence charger that will provide enough power to effectively contain the cows, horses and other livestock. Using the acreage of the pasture is the most effective number to consider when selecting an electric fence charger.

[The Power Wizard Fence Energizer Selection Guide](#) provides a range of acres for each model of fence charger. Since the pasture or acreage being fenced isn't an exact square or rectangle, it is recommended that you select a fence charger powerful enough to effectively provide electrical current to your specific fenced area.

### Possibility of Expansion

Another fact to consider when selecting a fence charger is whether or not your fenced area will expand or change in size and/or location over time. In particular, if you have a remote, fenced pasture that is moved from season-to-season or may be expanded at a later date to accommodate a growing herd, that should be taken into consideration when selecting a fence charger.

It is unsafe to have more than one fence charger on an electrical fence; therefore, if there is a possibility of your pasture size changing, you may want to opt for a larger model.

## Type of Wire Used

There are a number of factors to consider when selecting the proper fence wire for your electric fence. Each type of wiring offers features and benefits better suited to specific circumstances. You can obtain fence wiring in a variety of materials, gauges, and lengths depending on your specific fence needs.

Some types of wire are more resistant to the electrical current due to the diameter of the fence wire. For example, you will need a larger fence charger when energizing long distances of Polywire.

Polywire, Polyrope and Polytape wire features a mixture of tinned copper conductors and stainless steel conductors, twisted in a special UV protected polyethylene weave. The strength of the stainless steel, along with the super conductivity of tinned copper results in high voltage along the entire length of your fence.

Additionally, the height and size of your cows, cattle and other livestock will also have a determining factor in the wire used, the number of rows of wire contained in your fence, and the Power Wizard fence charger model that is installed. Visit the Power Wizard [accessories page](#) for complete details on fencing wire, such as; aluminum wire, insulated wire, steel gauge, 3-strand poly wire, heavy poly tape, underground cable, and monofil polyrope just to name a few.

## Soil, Weather and Sun Conditions

The ground conditions of the pasture that is being enclosed with an electric fence will also be a determining factor when selecting the proper fence charger.

If the ground conditions are heavily weeded or if piles of snow accumulate during the winter months, this can impact the consistency of the electric current flowing through the fence.

If selecting a solar-powered fence charger, the availability of sun exposure needs to be taken into consideration. During different seasons the pattern of sunlight will shift and could impact the amount of energy stored in the solar-powered fence charger. This will need to be considered when determining where the solar-powered fence charger is placed on the fence line or if a solar-powered fence charger is the right choice of energizer for the circumstance.

## Ground Conditions: Dry Soil versus Wet Soil

The most effective situation for an electric fence charger requires moist, rich earth so that the electric current can easily pass from the charger, through the ground system and to the cow's snout or the hide of a horse. However, ideal ground conditions are not always possible. The Power Wizard white paper, [COMPLETING THE CONNECTION: Effectively Grounding Your Electric Fence for Maximum Shock Value](#), provides the details necessary for creating a ground system regardless of the conditions of the dirt.



## Ultra Low Impedance

One big difference between Power Wizard fence chargers and the competition is their development of the *Ultra* low impedance technology. Power Wizard Ultra low impedance technology was engineered to consistently provide an electrical charge when cows, cattle and other livestock encounter the fence even if portions of the fence line are heavily impeded by vegetation, standing water, or snow.

## CLEARING UP THE MYSTERY

Comparing fence chargers from one brand to another can be a challenge. Packaging labels focus on different elements of the fence charger and can be confusing to decipher. One brand may focus on miles of wire while another will emphasize the acreage. Some brands talk about joules and others refer to volts, amps or watts.

Following are a few definitions that will help in the understanding of:

- Volts, Amps, Watts
- Joules: Output or Stored
- Miles vs. Acres
- Low Impedance vs. Ultra low impedance

### Volts, Amps and Watts

**Volts** are a unit of measure that determines the amount of electric pressure; the higher the number of volts, the more electric pressure. High volts are needed when containing larger animals with tougher hide or fur.

An **amp** measures the amount of electricity as opposed to the force of the electricity as in a volt. A larger number of amps will cause a greater sensation for the cow or cattle when they come in contact with the fence.

A **watt** is the unit of electrical power. In other words, it is the combination of the amount of electricity and the electrical pressure: **Amp x Volts = Watt**. Typically this term is not used on the packaging of fence chargers.

### Joules: Output or Stored

Joules is a term frequently used in fence charger descriptions and on the packaging of fence chargers, however, there are two measurements of joules: Output and Stored.

A joule is a unit of energy. **Watt x seconds = Joules**. It refers to the energy level of the fence charger and the amount of electricity felt in the single pulse per second generated when the cow or cattle encounters the fence. The higher the volt and amp, the higher the watt. The higher the watt, the more joules delivered per second on the fence line.

The important thing to compare when it comes to joules is whether it is output of joules or stored joules. Stored joule energy is approximately 35% less effective than the same number of output joules. When comparing fence charger brands by number of joules, make sure to compare fence chargers by the number of output joules.



### IMPORTANT SELECTION TIP

#### *Rule of Thumb:*

When selecting a fence charger to consistently contain your cows, horses and other livestock, remember that too little power is the same as no power on your fence line. Select a fence charger that has output Joules equal to the number of acres enclosed; i.e. 2 Joules for up to 200 acres. 3 Joules for 300 acres.

## For Example:

If you use one row of wire around a 640 acre pasture, you would require four miles of wire. If you use three rows of wire around a 640 acre pasture, you would require 12 miles of wire.

## NOTE:

The measurement of the number of miles around an acre varies based on the shape of the enclosed pasture. If you are unsure how many miles of wire you need, it is safest to purchase an energizer based on the number of acres.

## Miles versus Acres

Another common area of confusion when comparing fence chargers is the question of miles of fence versus acres of property. **1 square mile = 640 acres.**

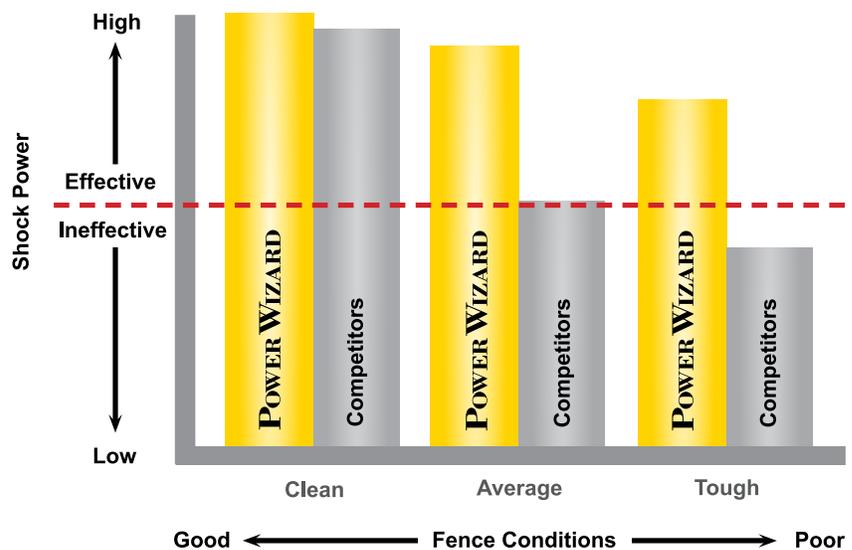
An electric fence will most likely have multiple rows of wire. This means the number of miles of wire will increase by the number of wires on the fence. Unless you are just creating a single wire of electric fence on top of an existing PVC railing fence or wooden fence, your electric fence will contain multiple rows of fencing.

## Low Impedance versus *Ultra Low Impedance*

Some fence chargers include a low impedance technology while Power Wizard fence chargers are also available with *Ultra* low impedance technology. Low impedance is the ability of the electric fence energizer to continually deliver effective shock sensations even through a small amount of vegetation or weeds that are in contact with the fence wire.

The Power Wizard electric fence chargers are designed to use *Ultra* low impedance technology, which means the fence energizers automatically adjust the electric signal, keeping it strong enough to contain your cows, cattle and other livestock even in difficult fence conditions. Our Power Wizard models perform under “real life” conditions; weather soaked ground and over grown weeds won’t impede their performance.

Most farmers and ranchers don’t want the added responsibility of monitoring the expanse of their fenced pasture areas every day and trimming back weeds to ensure their electric fence continues working. *Ultra* low impedance technology means that your fence charger will continue providing an effective level of electrical shock when your cows or cattle come in contact with the fence, regardless of the weather or ground conditions.



## POWER WIZARD® ELECTRIC FENCE ENERGIZERS

### Engineering and Technology Leaders in the Fence Energizer Industry

Power Wizard fence chargers are an environmentally safe, cattle-friendly, reliable, effective solution for energized fences. We offer a wide range of fence chargers to keep valuable livestock in and keep predators outside the fence.

Power Wizard products include plug-in, solar and battery-powered electric fence energizers. The Power Wizard brand of energizers is known for providing the longest lasting, low-impedance energizer available today. Power Wizard energizers use technology designed to set the industry standard for high performance under the toughest of conditions.

### Power Wizard Shock Technology Works for Every Farm Size

We offer over 20 different types of fence energizers, all backed with our 3-year warranty. Our fence energizers are designed to meet the varied needs from cattle ranchers, dairy farmers, small hobby farmers and those raising specialty animals, such as alpacas or llamas.

To determine which electric fence energizer is right for your needs, check out the [Energizer Selection Guide](#) at [www.PowerWizardInc.com](http://www.PowerWizardInc.com).

### Power Wizard's Warranty Speaks Volumes

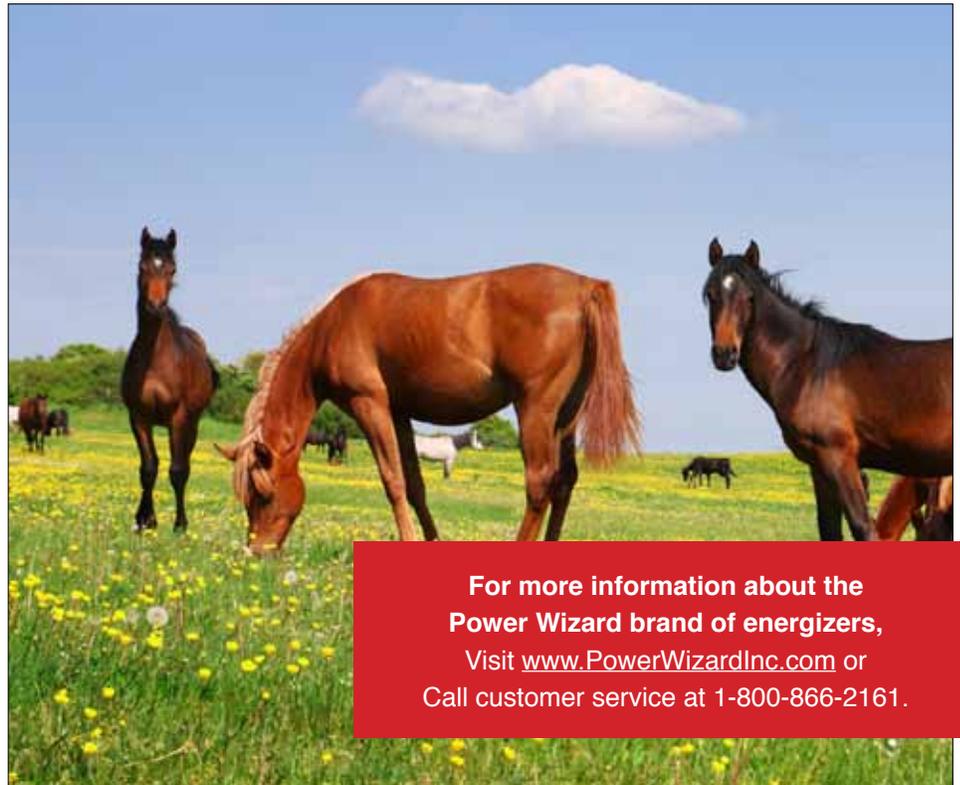
We believe in our products and we trust you will too, that's why we back all of our fence energizers with a limited THREE YEAR WARRANTY which includes protection from lightning strikes. If for some reason you are not happy with the performance of a Power Wizard energizer, simply call our Customer Service department.

## SELECTING THE BEST FENCE CHARGER

### Key Points to Remember

Selecting a fence charger can be confusing, however, if you keep in mind a few basic components, you will be able to choose the best fence charger to effectively and consistently contain your cows, horses and other livestock.

- **Power Source** – determine the power source that will be used to provide the energy necessary to operate your fence charger.
- **Livestock** – the size of the animals being contained will determine which model of fence charger will be the most effective to adequately power your electric fence. The larger the cow or cattle the more power is necessary.
- **Area** – The size of the area to be enclosed also has a bearing on selecting the appropriate fence charger.
- **Ground Conditions** – Selecting the area to enclose with an electric fence is also important. When using a solar-powered fence charger, make sure a portion of the fenced area is exposed to the sun for at least 4 to 6 hours each day on average. Weeds and vegetation growth also impact the ability of your fence charger to effectively contain cows and cattle by providing a pulse of electrical shock. Selecting a fence charger that offers *Ultra* low impedance technology may offer the best solution for areas with heavy weed cover.



For more information about the Power Wizard brand of energizers, Visit [www.PowerWizardInc.com](http://www.PowerWizardInc.com) or Call customer service at 1-800-866-2161.