Solar Energizer FAQs

Ours vs Theirs

Side by side comparison of Premier's PRS 50 unit (0.5 joules output) with a popular 0.15 farmstore unit. Larger units require large panels and larger batteries.

How do solar energizers compare to other fence energizers?

1. Their function is the same—a very brief high voltage pulse of energy.
2. Input source is a DC battery.
3. When the sun shines the solar panel recharges the battery—which eliminates the hassle of carrying the battery to/from a recharger.
4. They're larger in physical size than 110 volt energizers—because of the solar panel, battery and case.

How do solar energizers differ from one another?

- Input needs (milliamperes per hr).
- Pulse energy output (joules).
- Pulse rate per minute.
- Size of battery (in amp hours).
- Size of solar panel (in watts & volts).
- Number of days the battery will last on its own without sunlight.
- Cost/joule of output and durability.

What are the negatives of solar?

- Most expensive per joule of output.
- Usually lower pulse frequency than plug-in AC energizers.
- More maintenance including:
  1. Keeping the panel free of dust, snow and ice.
  2. Keeping the panel fully exposed to the sun—unshaded by trees, grass, thick fence posts or buildings.
  3. In winter the capacity of the battery goes down just when the amount of sunlight also goes down.

Are solar energizers less expensive?

No. Plug-in units cost less because they don't need a battery or a solar panel.

Are they less costly to operate?

No. The cheapest energizer to operate plugs into 110-volt AC current.

Consider—a Kube 4000 provides 10 times more pulse energy than most farmstore solar units. Yet it uses less than 70 watts/day. That's only $2.50 per year!

By comparison the battery in a typical farmstore solar fence energizer (1/10 the energy output of a Kube 4000) costs $24 and may need replacing every 2 years—an annual operating cost of $12.

How do solar energizers cope with sunlight variations?

Some regions receive much less sunlight than others. And hours of sunlight vary from winter to summer.

If they cost more to buy—why are solar energizers so popular?

Because solar energizers are so easy to set up and use.

The steps are simple and few:

1. Place unit next to the fence. Face it south at a right angle to noon sun.
2. Clip the leadout wire (included in all PRS solar units) to the fence.
3. Clip the other leadout wire to a ground rod, nonrusted steel post or grounded fence wire.
4. Turn it on.
5. Check fence for proper voltage.

So how do Premier solar energizers differ from farmstore energizers?

1. Premier's energizers have much higher pulse output—from .25 to 12 joules. Most farmstore solar units vary from .04 to .17 joules—enough to stop a mature horse or dairy cow but not enough for sheep, goats, poultry and wildlife or fences that will experience weed contact.
2. We also offer "extreme" versions of PRS units for areas with less sunlight and/or colder temperatures—and we tell you where those areas are.
3. Larger solar panels and batteries.
4. Much lower cost per joule of output.
5. Stronger case that can either be placed on the soil (summer) or hung from a post (winter).

Solar Energizer Systems

Always orient solar panels so they can receive the most available sunlight.

The maps to the right depict the differing hours of solar "insolation" for a region in winter and summer. *Solar insolation is the hours of sun available per average day that has sufficient intensity to enable a solar panel to charge a battery.*

Two very important things to note:

1. The summer insolation hours *(at right)* for all areas are much higher than winter hours. For southeast Iowa it's 6 hours in summer and less than 3 in the winter.
2. The hours available are very different depending on where you live. Michigan in summer has 5 hours vs 7.5 in Arizona!

Then why is the same solar energizer sold in both Michigan and Arizona?

It suits mass energizer suppliers to keep things simple.

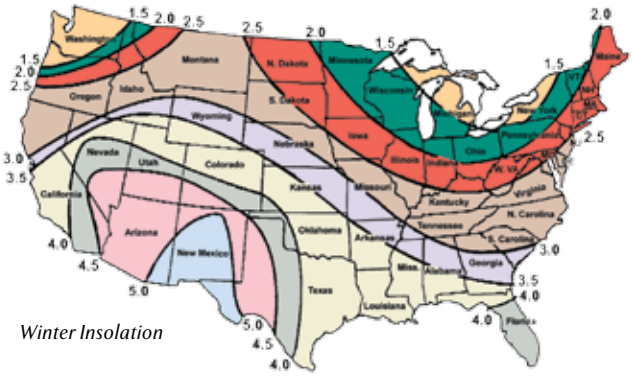
Yes, the panel and battery are too small for Michigan (except in mid-summer) and too large for Arizona (except mid-winter). That's why many farmstore solar energizers often fail in the winter.

And it's probable that the extra sunlight in the Southwest will damage the battery in the summer by overcharging it.

What powers a solar energizer at night and on cloudy days?

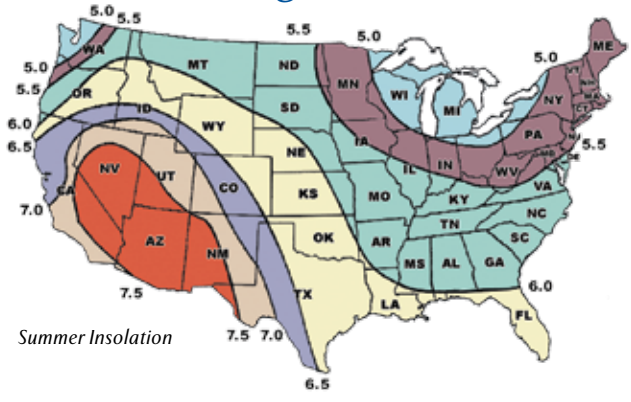
A DC battery. They all have one inside the case. The battery must be large enough to supply the energizer for several sunless days.

1. Winter sunlight—*(available per average day)*



Winter Insolation

2. Summer sunlight—*(available per average day)*



Summer Insolation

1. In the winter months—
A PRS should be close to vertical—to keep it perpendicular to the sun's rays at 12 noon.

2. During the summer—
Should be slightly tilted toward the south to catch available sunlight. We prop one edge on top of the ground rod.

Summer vs Winter sunlight

The maps above indicate the hours of summer and winter sunlight available per average day that have sufficient intensity to enable a 12v solar panel to recharge a 12v battery (defined as the hours of solar "insolation").

Why is this important?

- Because a solar energizer with the right panel and battery size for New England may overcharge a battery in Arizona unless it's equipped with a voltage regulator. We feel that all solar panels above 15 watts should be equipped with a regulator. Overcharging destroys batteries unless a regulator is used (costly for "off-the-shelf" units so it's rarely included).
- Solar panels that are right for Arizona are too small for Vermont—thus reducing battery life by undercharging.
- And a solar panel sized for summer usage may be too small for winter. Putting it simply, the same solar unit cannot fit all situations. That's why solar farmstore energizers disappoint users so often.