

Solar Energizer FAQs

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 and from a recharger.
4. They're larger in physical size than 110 volt energizers—because of the solar panel, the battery and the case.

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.

If they cost more to buy or use—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 the 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 wire fence.
4. Turn it on.
5. Check the fence for voltage.

Compare this to buying and installing a plug-in unit:

1. Before you purchase, identify the unit's location—because you need accessories to connect energizer to ground rod and the fence.

It needs to be:

- a. Near an 110/220v AC receptacle.
- b. Located inside a building (if possible).
- c. Close to the end of the fence to be electrified. Why? Because you need to run double-insulated wire from energizer to the fence. If there



is a gateway between energizer and fence, you need to bury it or suspend it out of the way.

- d. Determine the location of the ground rod(s). Then measure the length of insulated cable needed to connect ground rods to energizer.
2. When you have all the parts and pieces, hang the energizer; strip the 2 insulated wire ends; connect them to the energizer, fence and ground rod.

How do solar energizers differ from one another?

- Input needs (milliamperes per hour).
- Pulse energy output (joules).
- **They rarely differ much in volts even when pulse energy is 5 times greater.**
- Pulse rate per minute.
- Size of battery (in amp hours).
- Size of solar panel (in watts and volts).
- Number of days the battery will last on its own without sunlight.
- Cost/joule of output and durability.



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.



Solar Energizer Systems

So how do Premier solar energizers differ from farmstore energizers?

1. Higher output. Farmstore solar units vary from 0.04 to 0.17 joules—enough to stop a mature horse or dairy cow but not enough for sheep, goats, poultry, wildlife or any fence that will experience weed contact.

Our solar units are much larger.

- They vary from 0.25 to 6.0 joules.
2. We 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 ground (summer) or hung from a post (winter).

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

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

How do solar energizers cope with sunlight variations?

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

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:

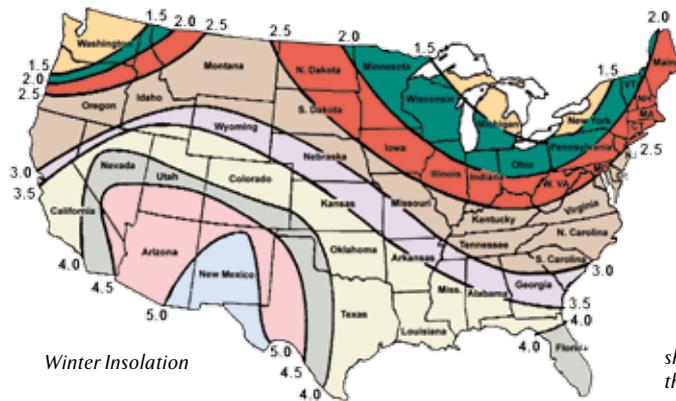
1. The summer insolation hours (at right) for all areas are much higher than winter hours. For southeast Iowa it's 6 hours in summer and less than 3 in the winter.
2. The hours available are very different depending on where you live. Michigan in summer has 5 hours vs 7.5 in Arizona!

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

It suits mass manufacturers to keep things simple. Yes, the panel and battery are too small for Michigan (except 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 may damage the battery in the summer by overcharging it.

Winter sunlight—available per average day

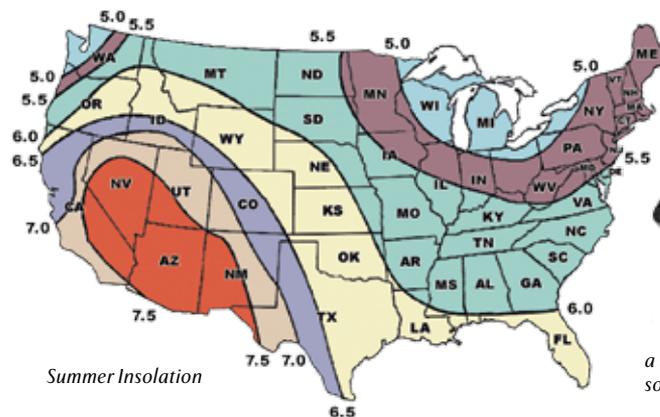


Winter Insolation



When used in winter, a PRS should be closer to vertical than in the summer—to keep it perpendicular to the sun's rays at 12 noon.

Summer sunlight—available per average day



Summer Insolation



During the summer months a PRS can be tilted toward the south to catch available sunlight.

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.**