

SurgeShield

Section A: What is SurgeShield?

1. What is SurgeShield?

SurgeShield is a whole-house surge protection program administered by FPL Energy Services, Inc (“FPLES”). The SurgeShield device is a meter-based (or hard-wired for some applications) U.L Listed surge protector which is installed at the electric meter by a licensed independent electrical contractor.

2. What does SurgeShield provide?

FPL Energy Services’ SurgeShield program provides participating customers with protection for their home’s major motor-driven appliances, such as the A/C, refrigerator, washer, dryer, well and pool pumps (within 4 feet of your home), dishwasher, ovens/range, hot water heater and ceiling fans, from damaging power surges that can enter through the incoming electrical service.

3. Why should someone enroll in SurgeShield?

Florida is the lightning capital of the United States. Lightning and power surges in general are unpredictable and can produce significant damage to a home's motor-driven equipment and appliances. For customers who enroll, FPL Energy Services will install a SurgeShield device to protect against power surges that can enter the home through the electric line, providing participating customers with peace of mind that their home’s major motor-driven appliances are protected.

4. Where is SurgeShield installed and how long does it take?

SurgeShield is installed between the electric meter and the meter can/box on the outside of the house and generally takes between 10 and 25 minutes to install. A simple pigtail ground wire is attached and the device is snapped into place. The cover and meter are repositioned and sealed. If this type unit is unable to be installed on your home, a hard-wired unit with identical protection levels can also be installed in much the same manner.

5. How long must I remain on the program? Is there a contract term?

SurgeShield is a voluntary program. You can stay on the program as long as or as short as you wish. You may terminate your program at anytime and the monthly charges on your electric bill will stop on your next billing cycle; however, we encourage customers to try the program for at least 12 months and experience the benefits year round.

6. How does FPL Energy Services market its services?

FPL Energy Services’ SurgeShield program is marketed using many different marketing methods such as through direct mail and bill inserts in FPL’s electric bills. FPL Energy Services and other companies who advertise in FPL’s bill insert pay for the advertising space.

7. Who owns the SurgeShield Device?

The device is owned by FPL Energy Services and is provided to SurgeShield customers according to the terms and conditions delivered at installation, and shown on our website at www.SurgeShield.com. FPL Energy Services will remove the device when a customer terminates their participation in the program.

8. I want to file a claim because my appliance(s) was affected by a surge. How do I do that?

Go to www.SurgeShield.com and click on “Manufacturer’s Claim Form.” This form is available for you to document and submit details of what happened. It will then be passed on to Meter-Treater, Inc., the device manufacturer, for consideration under their manufacturer’s warranty. (Note that the manufacturer’s warranty is also available on the SurgeShield website)

9. I heard about SurgeShield from my neighbor. Where can I get more information?

Go to www.SurgeShield.com. All the program information is there, and we even have an “Enroll Now” option to sign up right on the web.

10. How does the billing for this service work?

You are billed the program services and applicable tax on a monthly basis. For your convenience, we have made arrangements with FPL to include this monthly service charge on your FPL bill statement effective on the date of installation. If you have questions about specific SurgeShield charges, call FPL Energy Services at 1-866-289-8136 and we will help answer any questions you have.

11. When does my protection begin?

As soon as the device is installed, your SurgeShield protection will be activated and will remain activated for as long as you are enrolled in the program. Installation occurs in approx 3-6 weeks from when you enroll in the program.

12. Who does the installation?

FPL Energy Services hires licensed electrical contractors to install SurgeShield and stands behind their installation services.

13. Do I have to be home for the installation?

You only need to be home if your electric meter is not accessible or if you need to be present when the power is temporarily turned off during the installation process. The installation process takes approximately 15 minutes to complete.

14. Is SurgeShield the only protection I need for my home?

No. Because a voltage surge could enter your home via cable, telephone, satellite, Internet, or other connections and because SurgeShield only provides coverage for a home’s major motor-driven appliances, plug-in surge suppressors should also be used where electronics, computers, and the like are used in the home.

15. If I already have plug-in surge protectors in my home, do I really need SurgeShield?

The combination of a meter-based device, such as SurgeShield, and plug-in suppressors provide exceptional benefits to homes that experience surges that pass through the electric lines. SurgeShield will handle surges up to 100 times greater than plug-in suppressors, and acts instantaneously to

reduce, if not eliminate, the amount of surge entering the home. It is the plug-in suppressors that handle the reduced levels that also affect electronics.

16. Why do I need outlet protectors in addition to the residential SurgeShield device? What is the "Two Stage Approach"?

Surges can be generated internally (when large appliances like air conditioners and refrigerator motors turn on and off) or can enter your home through other connections such as Cable TV, Telephone lines, etc., that are not protected by SurgeShield. Outlet (plug-in) protectors provide protections against damages that could be caused by surges to electronics such as computers, stereos, DVD players, etc. This two-stage approach is assurance that surge energy levels stay well below the upset or destruction levels of such electronics.

17. Do surge suppressors protect against direct lightning strikes?

No. There is nothing that can protect against a direct lightning strike. However, about 95 percent of lightning-related damage to customer equipment is from "indirect" lightning strikes. Quality surge protection equipment is designed to block indirect strikes. SurgeShield is designed to stop power surges from lightning that strikes the electrical system and passes through the transformer and the meter.

18. I get aggravated having to reset clocks during power interruptions – will this product help?

No. SurgeShield provides surge protection, not battery backup or prevention of momentary power outages.

19. Will SurgeShield protect my entertainment center or computer?

No. The SurgeShield suppressor is intended to protect major motor-driven home appliances and we recommended that sensitive electronics are plugged into a quality plug-in surge suppressor.

20. I have a pool or well pump that gets damaged during some weather storms. Will SurgeShield safeguard this pump?

Yes, as long as the pump is located within 4 feet of the home

21. How can I know if SurgeShield is working?

SurgeShield has two red external light emitting diodes, or LEDs, that are visible at day or night. When they are both on, SurgeShield is working.

22. How much energy does the red light on SurgeShield consume?

75 milliamps each, or less than about 15 cents per year.

23. Is SurgeShield certified?

Yes, the SurgeShield device is listed to UL 1449 3rd Edition 2009 standards.

24. Is SurgeShield under warranty?

Yes, every SurgeShield device comes with a 15-year manufacturer's warranty for the device. Should the SurgeShield device fail to work according to specifications, the manufacturer's warranty also

provides for limited reimbursement for damages to a home's major motor-driven appliances. The manufacturer's warranty is limited to residential applications. See warranty on this web site for details.

25. Do you pay for claims?

Meter-Treater, Inc., the SurgeShield manufacturer provides the warranty for the device and is responsible for the reimbursement of some damages incurred to a home's major motor-driven appliances if the SurgeShield device fails to work according to specifications. See www.SurgeShield.com for exact manufacturer warranty details. It is important to note that SurgeShield is not an insurance program. Because it is a surge *prevention* device, its real value is keeping the damage from occurring in the first place.

26. Can SurgeShield help me to conserve energy?

No, surge protectors cannot conserve energy. The FTC has warned internet marketers about making misleading claims of energy savings from surge protection devices.

27. Will a poor ground affect the SurgeShield?

Possibly. MOVs (Metal Oxide Varistor – the key component in any device like SurgeShield) create an alternative low impedance path to ground which limits the electrical surges which enters your home. The less attractive that alternative path is due to a poor ground (higher impedance), the higher the probability that a portion of the 'surge pulse' will not follow that alternate path. Therefore, a poor ground at a customer's service entrance would prevent the device from creating a more attractive alternative path to ground for the surge current.

28. I never heard of SurgeShield. Is SurgeShield a new technology?

The meter-based surge protection device that FPL Energy Services uses for SurgeShield has been in the field since 1987. The SurgeShield program was started in 2003.

29. I'm a snowbird. Can I get SurgeShield for only part of the year?

Power surges don't care whether you are home, or if an appliance is operating or not. If the appliance is plugged in, then it is vulnerable to power surges. We recommend customers stay enrolled in SurgeShield year-round. Having protection for your major appliances, like your A/C, while you're away can give you peace of mind that you won't have to worry about a major unexpected expense when you return.

30. How long will SurgeShield last?

The device has been tested and shown at MTBF (meantime between failure) of approximately 17 – 20 years. The device includes a manufacturer's warranty for 15 years.

31. Can I buy SurgeShield directly and install it myself?

No. SurgeShield is only available commercially and must be installed by a licensed contractor hired by FPL Energy Services.

32. Can't I just buy a surge protector for the circuit panel?

Yes you could – and this is certainly better than no protection at all. It is important to note that these devices, including the cost of a licensed electrician to install, can be expensive. That is why FPL Energy Services offers SurgeShield for a flat, low monthly fee without a separate installation charge.

33. I keep having power surge problems and losing electronic equipment. Will SurgeShield guarantee that this stops?

No, SurgeShield is only designed to provide protection against surges that can cause damage to a home’s major motor-driven appliances. Also, surges can be generated internally or can enter through other connections such as cable TV, telephone lines etc. Therefore, outlet (plug-in) protectors are particularly important to provide protections against damages to sensitive electronics such as computers, TVs, stereos, DVD players, etc., and to provide protections from surges generated internally or entering the home through other connections.

34. Why is there a charge for SurgeShield? Shouldn’t FPL pay for it?

Utilities take steps to reduce power surges by installing lightning arrestors across their power system. However, it simply is cost prohibitive for any utility to provide complete surge protection while keeping electric rates as low as possible. FPL Energy Services has made SurgeShield available on a voluntary basis to the many customers who need or desire this greater level of surge protection.

35. Can I get a discount on my homeowners insurance?

Possibly, but you would need to check with your insurance carrier.

36. Is SurgeShield approved by FPL?

SurgeShield is offered and provided by FPL Energy Service, Inc. which is a subsidiary of NextEra Energy, Inc. and an affiliate of FPL. Although SurgeShield is not being offered or provided by FPL, SurgeShield devices have been approved by FPL for use behind the FPL meter.

37. How did SurgeShield get my name for marketing?

Customer lists are purchased on the open market and available to anyone who wants to buy them. FPL Energy Services can-not and does not access the customer information of FPL for marketing.

38. I have PVs (photo voltaic) on my home and am net-metered by FPL, can I get SurgeShield?

Yes, SurgeShield is available for net-metered customers.

Section B: How does SurgeShield work (product specs)?

1. What allows the SurgeShield device to protect against power surges?

A Metal Oxide Varistor (MOV) is the key component in any device like SurgeShield. A MOV is a ceramic mass of metal oxide grains sandwiched between two metal plates (the electrodes). When a small or moderate voltage is applied across the electrodes, only a tiny current flows, but when a large voltage is applied, a large current flows. The result of this behavior is a highly-nonlinear current-voltage characteristic, in which the MOV has a high resistance at low voltages and a low resistance at high voltages. The MOV therefore acts much like a solid-state switch, creating a low impedance path to

ground. It is voltage dependent and begins to switch to the path of low impedance when voltage on one surface exceeds a given threshold.

2. What is the response time of the MOVs in SurgeShield?

Measured in nanoseconds, the SurgeShield device has an extremely fast response time of 15 - 50 nanoseconds due to the very short lengths leading up to and away from the MOV. Aside from lead lengths, all MOVs have similar response times; therefore response time is not a key evaluation criterion and is often used to mislead consumers. MOV based protectors are fast enough for most protection scenarios except for high speed communication applications. Currently, there is no accurate or economical way to measure component response times.

3. What is the clamping voltage?

Clamping voltage is the initial voltage point at which the MOV begins to conduct (switch the path of the electrical surge) at any given amperage. Manufacturers of MOVs (Metal Oxide Varistor – the key component in any device like SurgeShield), rate their components at 1 milliamp, an accepted industry standard. Clamping voltage is non-linear because it rises as amperage increases. MOVs have published clamping graphs that show their clamping voltage at any given amperage. The clamping voltage for SurgeShield at 1 milliamp is 240v. The lowest possible clamping voltage device for 120-volt residential service is around 200 volts (1 milliamp rating). Devices at this level fall under UL Standard 1449 2nd Edition.

4. What happens when the SurgeShield device fails? Will it cut off power to my house?

MOVs (Metal Oxide Varistor – the key component in any device like SurgeShield), fail in a “dead short” mode. When this happens in a SurgeShield device, the MOV ruptures and goes off line. The SurgeShield device will not cut off power to your house. Only the MOV surge circuit (the alternative path to ground) becomes inactive and no longer provides any protection against electrical surges.

5. Can it catch fire or explode?

The SurgeShield device is designed to avoid catching fire or exploding through the use of custom fuse elements. However, other surge protection products on the market may have this problem. In addition, MOV elements (Metal Oxide Varistor – the key component in any device like SurgeShield), that are too small for a given application may rupture violently under heavy surge activity. Also, hermetically sealed devices have been known to rupture violently, if not properly fused.

6. How will I know if it is still working?

The two red LED lights of the device will be on. If the lights are out, the unit needs to be replaced. Because it takes such a high-energy pulse for the SurgeShield to fail, chances are the homeowner will have other indications that a significant surge event has taken place. If you notice that these LED lights are out, call us at 1-800-NO SURGE.

7. The lights on my SurgeShield are not red. Is it still working?

Maybe not. Please call us right away at 1-800-NO SURGE and we will send an electrical contractor out to service your device.

8. What are joules, and why is the rating on SurgeShield so high?

Joules are a measurement unit of energy and the rating in joules represents the amount of energy that the device can handle without device failure. The SurgeShield rating is high due to the large MOV (Metal Oxide Varistor – the key component in any device like SurgeShield), component used. In theory, the more MOV mass the more joules the device can absorb but is not a good way to compare one device with another.

9. What doesn't SurgeShield protect from?

Surges beyond its capability (60,000 amps per phase), sustained over-voltages, open-neutrals, voltage sags (commonly known as brownouts) and momentary power outages. In addition, sensitive electronics, like TVs, computers, etc., require a second level of protection from quality plug-in surge strips.

10. Will it remove electrical "Noise"?

No. There are no RFI or EMI components incorporated in the SurgeShield devices.

11. Is it possible to install a lower clamping voltage, something closer to the 120 volts serving my home?

No. In order to achieve 120 volts clamping, an MOV with a 95 volt maximum continuous operating voltage (RMS) rating would be required. Placement of such a device at the 120-volt electrical service entry into a home would cause violent and immediate component destruction. The 150-volt MOV in SurgeShield is the lowest possible clamping component safe for use at the electric service entrance location of a home.

12. Will it cause the voltage to rise in my house or will it create an electromagnetic field (EMF)?

No. SurgeShield is not a source of energy. The device is passive and surge components are in parallel with the lines, not series.

13. Will these devices work on my older two wire service; my outlets don't have the third grounding prong? What are 'modes of protection'?

Yes it will work on the older two wire home electrical systems; however, the most effective surge suppression provides a low resistance path to ground. Since this system has no ground at the outlet, surges must travel back through the neutral wire, which subjects every appliances and electronic device to the surge. By placing a meter-based surge arrester on a two wire home, surges will be intercepted before they enter the home, all the more reason to put one on a two-wire house. We do recommend that highly sensitive electronics in such a house be provided with a three prong, grounded outlet, tied back to a proper ground point at the building's electrical service entrance. We recommend using outlet protectors that provide all mode protection.

14. Does it limit the voltage in my house to no more than 240 volts?

No. The characteristics of MOVs (Metal Oxide Varistor – the key component in any device like SurgeShield), allow a non-linear let-through of voltage. There is a misconception by some consumers, created by misleading manufacturer information, that surge protectors limit the amount of voltage to

its design point. However, such a device would be considerably more complicated in design and very expensive.

15. Will it protect me against continuous high voltage by high line drops, open neutrals or other system problems?

No. MOVs (Metal Oxide Varistor – the key component in any device like SurgeShield), are not designed to handle sustained, continuous over-voltage that exceed their maximum continuous operating voltage rating. It would require a very large mechanism to divert the high voltage and high amperage associated with these conditions. MOVs are designed for very rapid, short duration surge activity.

16. Why do I need protection for simple appliances?

We know that, over time, the internal working of simple appliances (motor windings) can break down. Because the quality of some appliances has diminished and others have incorporated more sensitive and sophisticated circuitry, the need for surge protection is even greater. The cost to repair even a simple appliance in many cases exceeds the cost to completely replace it.

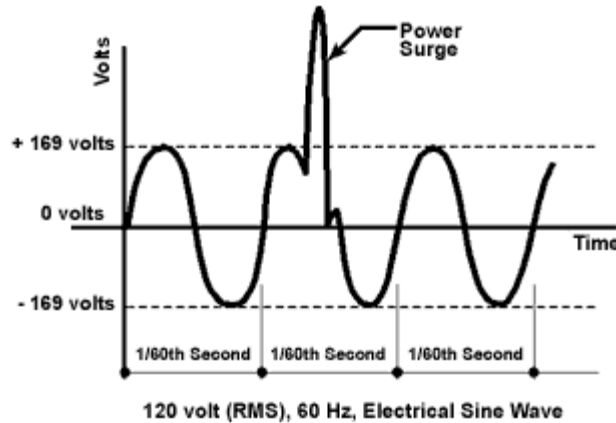
17. What makes the SurgeShield device better than other devices I can buy? What is current sharing?

The SurgeShield device is better because of its unique patented design, which incorporates a heavy duty 40mm MOV block (not small circuit board components) per phase. In addition, SurgeShield’s custom balanced fuses eliminate thermal runaway and fire commonly associated with smaller circuit board mounted MOVs. Other features are a UL listed container and the manufacturer’s in-field experience since 1987. One large MOV is superior to many paralleled smaller MOVs because smaller MOVs do not share current evenly. There is a 10% clamping deviation potential from one MOV to the next. SurgeShield eliminates the current sharing issue since there is only one large MOV per phase.

Section C: What are Power Surges?
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1. What are power surges?

Power surges are spikes in voltage. They are very brief, usually lasting a millionth of a second. Power surges can vary in duration and magnitude, varying from a few hundred volts to several thousand volts. No matter where you live, your home experiences power surges.



2. Are power surges harmful?

A spike in voltage can be harmful to appliances and electrical devices in your home. An increase in voltage above an appliance's normal operating voltage can cause an arc of electrical current within the appliance. The heat generated in the arc causes damage to the electronic circuit boards and other electrical components.

Smaller, repeated power surges may slowly damage your electronic equipment. Your computer or stereo may continue to function after small surges occur until the integrity of the electronic components finally erode and your electronic device mysteriously stops working. Repeated, small power surges shorten the life of appliances and electronics.

3. Where do power surges come from?

There are numerous sources of power surges, including lightning, electricity "switching" and large appliances inside customers' homes. The most common source is lightning, which strikes Florida more than any other state and is a frequent cause of power outages and flickers. A typical lightning bolt contains about 2 million volts of energy and can be very damaging to the electric grid. There were more than 190,000 lightning flashes in FPL's service area from July 2010 through July 2011.

Electric companies are sometimes required to re-route or "switch" electricity from one main power line to another which can also cause surges. Switching may be done in emergency situations to ensure the safety of employees as they work to restore power as quickly as possible during an outage, or to complete maintenance work without requiring a scheduled power outage.

Another common source of power surges is inside the home, when large appliances like air conditioners and refrigerator motors turn on and off. The SurgeShield program is designed to be the first line of defense for surges coming through the electric meter, regardless of their source.

4. Are there other ways power surges are generated?

Lightning is the most dramatic, but animals such as squirrels or large birds can get between energized electrical equipment connections. In addition, trees contacting power lines and motors that switch on

and off are other causes of surges. Surges can be developed in the home as well when appliances cycle on and off, such as a refrigerator or HVAC unit.

5. Why do I also need plug-in surge protection in addition to SurgeShield?

Today's electronic equipment contains sensitive electronic components. Almost any power disturbance can cause interruption or damage to these items. Low-level surges can cause stress on the components leading to early failure. High-level surges can result in immediate destruction of the components. In order to provide extended protection for sensitive electronics, we recommend customers also include plug-in protectors as a part of their plan. Even so, it is important to note that no plan can be guaranteed is 100% effective.

6. How can I protect my home from power surges?

Knowing that power surges can take several paths and do not have to enter through the electrical panel helps to understand some of the elements that a good surge protection system should include:

- a. Protection of the incoming electrical service – (potentially at the meter with a product like SurgeShield)
- b. Some type of protection of phone lines and cable TV lines
- c. Point-of-use surge protectors at sensitive and expensive appliances

When deciding on what type of and how much surge protection is needed, each house and its contents should be assessed individually.

7. I had an open neutral / transformer failure / line drop that destroyed many of my home appliances. Would the SurgeShield Program have saved them?

The SurgeShield meter-based surge suppressor is not designed to mask or protect against power system failures or disturbances.

8. Do my home's service entrance panel circuit breakers protect me?

No, they aren't fast enough. Circuit breakers are current limiting devices which work off of heat, and SurgeShield is voltage dependant. A heat sensitive device would not trip the circuit fast enough to protect your motor driven appliances.

9. Wouldn't lightning rods work just as well?

Devices such as lightning rods divert lightning strikes away from your home and into the ground. A meter-based surge protector such as SurgeShield is designed to divert electrical surges within the electrical delivery system that could be caused by lightning strikes that are not in the immediate vicinity of your home.

10. If power distribution systems were being built to more reliable standards today, why would I need surge protection?

Electric companies are sometimes required to re-route or "switch" electricity from one main power line to another which can cause surges. Switching may be done in emergency situations to ensure the safety of employees as they work to restore power as quickly as possible during an outage, or to complete maintenance work without requiring a scheduled power outage. Another common source of

power surges can also be generated from inside the home, when large appliances like air conditioners and refrigerator motors turn on and off.

11. Why do I need protection for motor-driven appliances?

We know that, over time, the internal working of appliances (motor windings) can break down. Since the quality of some appliances has diminished and others have incorporated more sensitive and sophisticated circuitry, the need for surge protection is even greater. The cost to repair even a simple appliance in many cases exceeds the cost to completely replace it. SurgeShield is built to provide this type of protection.