



# Keeping Your Electric Service Reliable

Your guide to understanding power outages, troubleshooting issues,  
protecting your appliances and more.



# Who Turned Off the Lights?

Florida Power & Light Company (FPL) understands that any power outage is an inconvenience. That's why we continually invest in strengthening our infrastructure, use smart technology to prevent outages, and proactively clear vegetation from power lines.

Each year we proactively clear tree branches from more than 15,000 miles of power lines across Florida and inspect more than 140,000 utility poles. At our Reliability Assurance Center, we simulate lightning strikes on our equipment to identify the best ways to prevent lightning from causing flickers in your home or business. These everyday initiatives are paying off by reducing outages and flickers.

Despite our best efforts, no utility can ever be completely interruption-proof. Many forces can cause an outage, a flicker or changes in voltage. If you experience an outage or recurring power problems, call FPL and we'll investigate to get your power problems resolved.



## Those Annoying Electric Disturbances

Electric disturbances can appear in different forms. Some aren't even noticeable but may leave signs such as a shrunken picture on your TV or computer screen.

### Brief Power Interruptions (Flickers)

When your digital clock or DVD player blinks or your lights go off for a few seconds, you've experienced the most common power disturbance problem, a flicker. Flickers can be caused by:

- » Lightning strikes
- » Tree branches making contact with power lines
- » Vehicle accidents involving electrical equipment
- » Construction accidents involving power lines
- » Salt spray affecting FPL equipment
- » Damage to underground equipment

Flickers are usually harmless and resolve themselves quickly. Here's an example of how a flicker occurs: A palm tree frond comes into contact with a power line. FPL's system automatically switches off electricity to give the frond time to clear the line. Once the frond is clear of power lines, FPL's system resets itself.

By switching off electricity for a few seconds, FPL prevents a full power outage.

### Surges and Spikes

Unexpected burdens on the electric system, often from lightning, can cause a brief but intense increase in the amount of electricity in your home. Though they usually last less than a second, these surges and spikes can affect sensitive electronic equipment.

Find out how to best protect your electronic devices on the "Protect Your Home or Business Against Power Disturbances" page.

### Partial Power Outages

Sometimes, the power goes out in only part of your home or business. A partial power outage may be caused by a tripped circuit breaker, a blown fuse or a broken connector or wire at one of the service leads to the home or business.

### Sags and Swells

Occasionally, the amount of voltage delivered to your home or business may briefly rise above or drop below normal. These variations are known as sags and swells and may cause shrunken displays on your TV or computer monitor.

Identify Your Power Problem	
Symptom	Possible Causes
Flickering lights	Sag, Swell or Flicker
Electrical equipment issues	Surge or Spike
Air conditioning interruption	Sag, Swell or Flicker
Shrunken computer or TV picture	Sag
Computer turning off and on	Flicker
Blinking digital display	Flicker
No electricity in the entire home or business	Power Outage
No electricity in one room	Partial Power Outage

**FPL delivers more than 99.98 percent service reliability at prices well below the national average.**

# Investigating Your Power Disturbance

## Clues to Help Get to the Bottom of a Power Disturbance

Troubleshooting	Solution
Are your neighbors or other businesses in your area affected?	If not, check your circuit breaker and main breaker before calling an electrician or FPL. If you live in an apartment building or business complex and only you are out of power, call your building's maintenance person for assistance. If your entire complex is experiencing power problems, call FPL at 1-800-4OUTAGE (1-800-468-8243) or report the problem online at <a href="http://www.FPL.com/outage">www.FPL.com/outage</a> .
Does the problem come and go? Being aware of patterns can be helpful to you, an electrician or FPL in finding the cause and solution for your power disturbances.	Look for patterns. It's likely something has interfered to cause your power interruptions. Note the following when looking for patterns: <ul style="list-style-type: none"><li>» Does the problem occur at the same time of day?</li><li>» Are the interruptions caused by the same device or appliance?</li><li>» Is construction work going on in your area?</li><li>» What was the weather like when the problem occurred?</li><li>» Did you notice any loud noises outside near the time of the power interruption?</li><li>» Have you recently added any new appliances to your home or business?</li></ul>
Are two or more appliances or pieces of equipment running at the same time?	Find out if sensitive equipment is sharing an electrical circuit with larger appliances or equipment such as motorized items.
Has work recently been done on your home or business electrical system?	Check any relevant installation manuals or troubleshooting guides, or call the electrician who did the work so that any incorrect installation, grounding or wiring can be corrected.
Have you recently added new appliances to your home or business? Is the problem occurring in only one appliance or piece of equipment?	Make sure the item is plugged in. Review the appliance instruction manual's troubleshooting section. Contact the manufacturer for assistance, as needed.
Are lights in your home or business going dim or bright and staying that way for an extended period of time?	When lights in your home or business stay dim for an extended period, turn off major appliances and equipment and call FPL immediately.

If the problem persists after you have completed the recommended steps, contact FPL at **1-800-4OUTAGE (1-800-468-8243)** or report your power interruption online at [www.FPL.com/outage](http://www.FPL.com/outage).

## When Simple Solutions Don't Work

If these solutions don't work, or if you suspect you have other electrical problems at your home or business, contact a qualified electrical contractor, licensed electrician or your building's maintenance staff. Visit [www.FPL.com/powerquality](http://www.FPL.com/powerquality) for more information and tips.

# Protect Your Home or Business Against Power Disturbances

## FPL's Top Tips for Power Disturbance Protection

Anything that plugs in at your home or business can be affected by a disturbance in the electricity entering the structure. More sophisticated equipment such as computers and security systems are the most sensitive to changes in electricity. Fortunately, you can take simple steps to prevent problems when a power disturbance occurs.

### Step 1: Back It Up – Back It Up – Back It Up

- » Purchase equipment with built-in backup protection, such as batteries that allow devices to remember clock and alarm settings after a power disturbance.
- » Purchase UPS devices. These switch your computer or other equipment to battery backup during a power loss, giving you time to save data.
- » Regularly back up computer data.
- » Protect your equipment with inside or outside surge protection—or for your best protection, use both.

### Step 2: Conduct an Electrical Checkup

- » Repair or replace damaged and loose wires, outlets and plugs.
- » Never plug computers and sensitive electronics into outlets also being used for motor-driven equipment, such as:
  - Photocopiers
  - Ventilators
  - Air conditioners/heating and cooling equipment
  - Furnaces
  - Refrigerators and freezers
  - Vacuum cleaners
  - Dishwashers
  - Air compressors
  - Irrigation pumps
- » Check your breaker box to make sure sensitive equipment, such as computers, doesn't share circuits with energy-hungry equipment such as air conditioners, refrigerators, washers, dryers and microwaves. Relocate equipment to other circuits or have an electrician make needed changes.
- » Plant trees away from power lines and keep branches trimmed. FPL recommends using a qualified contractor.

Branches touching lines may cause brief power interruptions. Visit [www.FPL.com/trees](http://www.FPL.com/trees) for more information, including a "Caring for Your Trees and Service" brochure.

- » Equip your air conditioner with a time-delay relay if it doesn't already have one. This prevents the unit from restarting for about three to five minutes, minimizing the possibility of damage to your air conditioner's compressor.
- » Follow manufacturers' instructions for setting up all appliances and equipment.

### Step 3: Use Surge Protectors

- » Use of surge protectors prevents damage to your electrical equipment and appliances. The most obvious problems occur when lightning travels down electric, telephone or cable lines and affects computers and other electronics. However, the effects of surges can cause less noticeable damage over time as electronic components gradually break down. Because microchips are used in most major appliances, even this kind of equipment is vulnerable to surges and spikes.
- » Surge protectors act like electrical sponges, absorbing excess energy and preventing most of it from reaching your equipment. And, like sponges, surge protectors have a limited ability to absorb energy. That's why it's important to select a surge protector with the right features and ratings to match the equipment you want to protect. FPL recommends whole-house protection through a combination of inside and outside protection products.

*See a guide to selecting surge protection devices on the back page of this brochure.*



# Fix That Power Problem

## Troubleshooting Power Disturbances

The lights are flickering. Your alarm clock is flashing. You're experiencing a power disturbance. Before you call FPL or an electrician, you can troubleshoot—and possibly fix your power problem, yourself!

Sometimes solving a power problem is as easy as keeping track of when problems occur and what equipment in your home or business is affected. Start by knowing the electrical equipment in your home.

## Ground Fault Interrupt Circuits

Ground fault interrupt (GFI) circuits are found where water can be a threat, such as near sinks, tubs, garages and outside your home or business. The GFI outlet is designed to shut off electricity to the entire circuit, as needed, to prevent electrical shock. To restore electricity to the circuit, the GFI outlet must be reset as follows:

1. Unplug equipment from the outlets served by the GFI circuit.
2. Locate the outlet that includes the GFI reset switch.
3. Reset the switch. Make sure to press the “reset” button, not the “test” button. You should hear a click.
4. Test the outlet by plugging the appliance back in and turning it on.
5. If you still don't have power, try resetting the breaker at the breaker panel, usually located in your garage or utility space.
6. If these steps don't restore power, call 1-800-4OUTAGE (1-800-468-8243).



## Examining the Mystery of Breakers

If the power goes out in only a portion of your home or business, or if only some appliances and equipment stop working, you may have a tripped breaker. Breakers are safety devices that protect your home or business when short circuits or electrical overloads occur.

Before problems occur, it's important to know where the breaker panel is located, and to make sure you can get to it quickly.

Most can be found in the garage, a hallway, or outside near the electric meter.

A properly installed breaker is safe to operate, but remember that electricity can be dangerous, so it pays to call an electrician if you have problems with any of these steps.



## Resetting a Breaker

1. Open your breaker box and look at your breaker switches. You will know a breaker is “tripped” when the lever is halfway between the “On” and “Off” positions.
2. Reset the breaker by switching it all the way off, then back on.

**Note:** If the breaker for your air conditioner is tripped, wait five minutes before resetting it. Doing this will prevent motor damage to your air conditioning unit. If the breaker trips again, do not reset it. You may have a serious electrical problem. Contact an electrician.

## Resetting a Main Breaker

If power is completely out at your home or business, but neighbors or nearby businesses are not affected, you may have a tripped main breaker.

1. Turn off all circuit breakers inside your breaker box.
2. Find the main breaker switch, often located near the electric meter outside your home or in your breaker box.
3. Reset the switch by turning it off and on two times.
4. Turn all breakers back to “On” inside the breaker box.

# Surge Protection

## Inside Surge Protection

Inside surge protection devices are installed directly between the equipment you want to protect and the wall outlet, acting as the last line of defense against surges generated inside or outside your home or business.

Before buying surge protectors, determine how many—and what type of surge protection—you need. You can save money and space by purchasing multiple-outlet surge protectors that prevent damage to several pieces of equipment.

When protecting sensitive electronics such as computers and TVs, be sure to use a surge protector with connections for all attached cables. For example, all devices connected to a computer,

including the router or modem, should plug into the surge protector. The phone line should be routed to the modem from the surge protector.

## Outside Surge Protection

Outside surge protectors, often called surge arresters, can be installed on the electric meter or breaker box to protect telephone and cable lines from being damaged by power surges.

Protection at the meter does not protect other points of entry such as phone, cable, data lines, DSL or satellite. For full protection, also consider the options described in the table below.

Protection Needed	Equipment
Power Line Protection	Any sensitive electronic device, appliance with microchips (most modern appliances) or microprocessor, telephone answering machine, fax machine, modem, TV, DVD player, DVR
Cable Line Protection	TV, DVD player, DVR, cable modem
Whole House Surge Arrester	Main electric breaker switch
Uninterruptible Power Supply (UPS)	Computer, telephone, data line, peripheral device, other equipment
Digital Satellite Jack	Satellite TV
Telephone Line Protection	Telephone, answering machine, fax machine, modem, credit-approval system, security system

## Surge Protection Features: Know What You're Buying

When you purchase a surge protector, check for the following features:

United Laboratories (UL)-listed transient voltage surge suppressor	UL-listed surge protectors meet important industry standards.
Clamping Voltage / Let-Through Voltage	This is the amount of voltage the unit passes through to your equipment before diverting voltage to the ground. The lower the number, the better. The lowest clamping voltage recognized by UL is 330 volts, sometimes listed as .33 kilovolts.
Alarm or Light	These let you know when your surge protector no longer works.
Power Shutdown Protection	This shuts power off when the surge protector has stopped working so that no electricity can flow.
EMI/RFI Protection	This guards against data loss, audio static, video interference and possible computer memory loss from electromagnetic and radio frequency interference.
Response Time Rating	The faster the surge protector can react to high voltage, the better.

