BILL'S HOME TECH
Home & Small Business Tech Solutions

BILL'S COMPLETE MANUALS

Surge Protectors & Battery Backups

Protecting your electronics, and keeping the lights on — explained in plain English, one step at a time

A plain-English guide for every household

Take your time — you can't break it

Written for you by Bill — Bill's Home Tech

(330) 200-8042 · BillsHomeTech.com

For surge strips, whole-home protection & battery backups · facts current November 2026

What's Inside

This is your guide to protecting the electronics in your home and keeping the important things running when the power goes out. Read it in any order and at your own pace — there is no test, and you can't fall behind. Every gadget comes with what it actually does *for you*, and slow, step-by-step directions anyone can follow. Brands and models change often, so this guide teaches you what to look for on any box, rather than telling you which one to buy.

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PART 1

Getting Started

What a power surge really is, and the three gadgets people mix up: the power strip, the surge protector, and the battery backup. Start here.

CHAPTER 1

A Note from Bill

Hello, and welcome. If you've ever stood in the store aisle staring at a wall of power strips, wondering why one costs eight dollars and the one next to it costs sixty — this guide is for **you**. And if you've ever lost your internet, your phone, or a computer to a storm or an outage, it's for you too.

I'm Bill. I've spent more than 30 years working with technology, and these days I help folks here in Portage County feel at home with theirs. I wrote this guide the way I'd explain it sitting at your kitchen table: patiently, in plain English, and without trying to sell you anything. When I use a word like "joule" or "UPS," I'll stop and explain it right then.

What this guide will do for you

- Help you tell a plain power strip from a real surge protector in about ten seconds.
- Show you how to read the numbers on the box, so you buy the right thing once.
- Explain battery backups (often called a **UPS**) and how one can keep your internet, your home phone, or your computer going through a short outage.
- Walk you through the safety side: overloaded strips, generators and carbon monoxide, and medical equipment that needs power.
- Point out the scams that tend to show up right after storms and outages.

The big promise: you can't break anything by reading

Most of what's in here is about *choosing* and *plugging in* — things you can do slowly and carefully, and undo if you change your mind. The few jobs that truly are dangerous, like work inside your electrical panel, I'll mark clearly as jobs for a licensed electrician. I'm a technology helper, not an electrician, and I'll always tell you honestly which is which.

WHAT THIS DOES FOR YOU

Why this matters

A good surge protector costs far less than a new TV or computer, and a small battery backup can keep your Wi-Fi and phone working long enough to check on family, see the news, or call for help during an outage. A little knowledge here protects both your belongings and your peace of mind.

And I'm only a phone call away

If anything in this guide leaves you unsure, call me at **(330) 200-8042**. There's no such thing as a silly question — especially about electricity, where it's always smarter to ask first.

So let's start with the simplest question of all: what *is* a power surge?

— Bill

CHAPTER 2

What a Power Surge Really Is

The outlets in your walls deliver electricity at about **120 volts**. Think of voltage as water pressure in a garden hose. Your electronics are built to handle that normal pressure all day long. A **power surge** is a sudden, very brief jump in that pressure — far higher than normal, lasting a tiny fraction of a second.

Where surges come from

Most people picture lightning, and lightning certainly can cause big surges. But the companies that make surge protectors point out something surprising: **most surges start inside your own home**. Every time a large appliance — an air conditioner, a refrigerator, a furnace blower, a power tool — switches on or off, it can send a small jolt back through your wiring.

- Large appliances cycling on and off (the most common source).
- The power coming back on after an outage.
- Problems on the utility's lines, such as a downed line or a car hitting a pole.
- Nearby lightning strikes.
- Tripped breakers or wiring faults.

Why it matters to your electronics

Anything with a tiny computer chip inside — a TV, a computer, a router, a microwave with a digital display, a garage door opener — is sensitive to surges. A big surge can ruin a device instantly. Smaller, repeated surges can wear its parts down slowly, so it just "dies early" one day without any obvious reason.

GOOD TO KNOW

A surge is not the same as an outage

An **outage** (or blackout) is when the power goes away. A **surge** is when there's suddenly too much of it. A **brownout** is when the voltage sags lower than normal for a while — the lights dim. Different problems need different gadgets, which is exactly what the next chapter sorts out.

TIP

Circuit breakers don't stop surges

Your breakers and fuses protect your wiring from carrying too much *current* — too many things running on one circuit. They don't react to a quick voltage spike. That's why a breaker panel alone isn't surge protection.

CHAPTER 3

Three Gadgets People Mix Up

In the store, three very different things can look almost identical: a long plastic bar with a row of outlets and a cord. Here's how to tell them apart.

1. The plain power strip

A **power strip** just turns one outlet into several. That's all. Many have an on/off switch and a little circuit breaker, but there is nothing inside to absorb a surge. They're fine for a lamp and a phone charger. They are *not* protection for a TV or computer.

2. The surge protector

A **surge protector** (sometimes called a surge suppressor) also gives you extra outlets, but inside are parts that soak up and divert a surge before it reaches your devices. A real one says so on its label and lists a **joule rating** and a **voltage protection rating**. Chapter 4 explains both.

3. The battery backup (UPS)

A **battery backup**, usually called a **UPS** (uninterruptible power supply), is a heavier box with a battery inside. When the power goes out, it keeps the devices plugged into its battery outlets running for a while — minutes to an hour or more, depending on how much you plug in. Most also include surge protection.

	Power strip	Surge protector	Battery backup (UPS)
Adds outlets	Yes	Yes	Yes
Absorbs surges	No	Yes	Yes, on most models
Keeps things running in an outage	No	No	Yes, for a limited time
Typical use	Lamps, chargers	TV, computer, router	Computer, modem & router, home phone base
Rough price (Nov. 2026)	Usually under $20	Roughly $15–$80	Roughly $80–$300 for home sizes

TIP

The ten-second test in the store

Turn the box over. A real surge protector names itself a **surge protector** or **surge protective device**, and lists a joule rating and a UL 1449 voltage rating. If you can't find any of those numbers, it's a plain power strip, no matter how sturdy it looks.

HEADS UP

Prices are a rough guide

The prices above are typical ranges seen at stores and online in November 2026. They change often, and a higher price doesn't always mean better protection. The numbers on the label tell you far more than the price tag does.

WHAT THIS DOES FOR YOU

What this does for you

Once you can tell these three apart, you stop wasting money on the wrong one — and you stop trusting a seven-dollar strip to protect a seven-hundred-dollar television.

PART 2

Surge Protectors

Reading the box, choosing the right one for each room, plugging it in safely, and knowing when it's worn out and needs replacing.

CHAPTER 4

Reading the Box: Joules, Volts & UL 1449

Surge protector boxes are covered in numbers. Only a few of them really matter, and once you know what they mean, choosing one takes a minute instead of an hour.

Joules: how much it can absorb

A **joule** is a unit of energy. A surge protector's **joule rating** tells you roughly how much surge energy it can soak up before it wears out. Higher is better. Think of it as the size of a sponge: a bigger sponge can soak up more spills before it's used up.

What you're protecting	Joule rating the maker suggests
Lamps, clocks, small kitchen gadgets	Up to about 1,000 joules is adequate
Printers, routers, modems, office gear	About 1,000 to 2,000 joules
TVs, home theater, game consoles, computers with important photos and files	2,000 joules and up

Voltage protection rating: how much gets through

No surge protector stops a surge completely. It "clamps" it down to a lower level. The **voltage protection rating** (often printed as **VPR**, or called the **clamping voltage** or **let-through voltage**) is the most voltage that gets through to your devices during the standard UL test. Here, **lower is better**.

You'll usually see one of these numbers: **330**, **400**, **500** or **600 volts**. A 330-volt rating is the strongest of the common ones.

UL 1449: the safety standard to look for

UL 1449 is the safety standard surge protectors are tested to in the United States. A plug-in surge protector is listed as a "Type 3" surge protective device under that standard. When you see "UL 1449" and a voltage protection rating on the label, it means an independent lab tested how it handles surges. A plain power strip is tested to a different standard (UL 1363) and doesn't have to absorb surges at all.

GOOD TO KNOW

"UL" isn't the only lab

Other nationally recognized testing labs, such as ETL (Intertek) and CSA, test to the same standards. A mark from any of them is fine. What you want to avoid is a product with no testing mark at all — common with very cheap online sellers.

Other things on the box worth a glance

- **Protected / Grounded lights** — little indicator lights that tell you the protection is still working and the outlet is properly grounded. Very useful; see Chapter 8.
- **Amps (A)** — most home surge protectors are rated for 15 amps, the same as a typical wall outlet.
- **Cord length** — buy one long enough to reach the wall without an extension cord.
- **Outlet spacing** — a few widely spaced outlets for chunky power adapters.
- **Coax, phone or Ethernet jacks** — protection for the cable and network lines too (Chapter 9).
- **Connected-equipment warranty** — a promise to pay for damaged devices. Read the fine print; these usually require registration and proof, and can have many exclusions.

TIP

Write the numbers down

Before you throw the box away, write the joule rating and the date you bought it on a piece of tape stuck to the bottom of the surge protector. Years later, you'll know exactly how old it is.

WHAT THIS DOES FOR YOU

What this does for you

With just two numbers — joules (higher is better) and voltage protection rating (lower is better) — you can compare any two surge protectors in any store, without needing a salesperson.

CHAPTER 5

The Right Surge Protector for Each Room

You don't need the same thing everywhere. Here's a simple room-by-room way to think about it.

The TV and entertainment area

A TV, a streaming box, a soundbar and maybe a game console add up to a lot of money. This is the spot for a well-rated surge protector — 2,000 joules or more, with a 330 or 400 volt protection rating. If your TV gets its signal from a cable or antenna, choose one with **coax** jacks so that line is protected too.

The computer desk

A desktop computer holds your photos, files and records, and it's sensitive to sudden power loss. Here a **battery backup** (Part 4) is often the better choice, because it protects against surges *and* lets the computer shut down properly if the power goes out. A laptop runs on its own battery, so a good surge protector is usually enough.

The internet corner: modem and router

Your modem and Wi-Fi router are small, but they're what everything else depends on. At minimum, plug them into a surge protector. Better still, put them on a small battery backup so your Wi-Fi and internet phone keep working during short outages (see Chapter 17).

Bedroom and living room odds and ends

Lamps, phone chargers, a clock radio and an electric blanket don't need high-end protection. A modest surge protector or a plain power strip is fine for most of these. One exception: **space heaters never go on a power strip or surge protector** — always straight into the wall (Chapter 7).

The kitchen

Most countertop appliances should plug straight into the wall outlets, which in kitchens are usually GFCI outlets (the kind with Test and Reset buttons). Heat-making appliances like toasters, coffee makers and microwaves draw a lot of power and shouldn't share a strip. If you do use a surge protector for one, give that appliance a strip all to itself, and keep it away from the sink.

Spot	What to use	What to look for
TV & entertainment	Surge protector	2,000+ joules, 330–400 V rating, coax jacks
Desktop computer	Battery backup (UPS)	Pure sine wave if the computer is newer (Chapter 13)
Modem & router	Small battery backup, or surge protector	Enough battery outlets for both boxes
Lamps & chargers	Basic surge protector or power strip	Long enough cord to reach the wall
Space heater	Nothing — wall outlet only	Its own outlet, cord in the open
Kitchen	Wall outlets (GFCI)	One heat appliance per strip, if any

HEADS UP

Outdoors is different

Indoor surge protectors aren't made for porches, decks or garages where they can get wet. Use only products labeled for outdoor use outside, plugged into a GFCI outlet.

WHAT THIS DOES FOR YOU

What this does for you

You spend your money where it counts — on the TV, the computer and the internet corner — instead of buying expensive protection for a lamp.

CHAPTER 6

Setting One Up the Right Way

A surge protector only works well when it's plugged in properly. This takes about five minutes.

To set up a new surge protector

1. Pick a **three-prong, grounded wall outlet** close to the devices. Surge protectors send the extra energy to the ground wire, so they need that round third prong to work.
2. Plug the surge protector **directly into the wall** — not into an extension cord or another strip.
3. Turn its switch on, if it has one. Look for the **Protected** light (and a **Grounded** light, if your model has one). Both should glow.
4. Turn off the devices you'll be moving. Unplug each from its old outlet and plug it into the surge protector. Put the most valuable things (TV, computer) on the surge-protected outlets — some strips have a few outlets that are not protected, and the label will say so.
5. If it has coax or phone jacks, run the cable from the wall into the surge protector's **IN** jack, and a short cable from its **OUT** jack to your device.
6. Lay the cord where nobody will trip on it, and where it won't be pinched by furniture or covered by a rug.
7. Turn your devices back on and make sure everything works.

HEADS UP

If the Grounded light stays off

If the surge protector's **Grounded** or **Wiring OK** light won't come on, the outlet may not be grounded properly — common in older homes with two-prong outlets that were swapped for three-prong ones without adding a ground. The surge protector can't do its job there. Try another outlet, and have an electrician check the wiring.

STAY SAFE

Never cut off or bend the third prong

Don't use a "cheater" adapter or snap off the round grounding prong to fit an old two-slot outlet. That removes the protection you just paid for and creates a shock risk.

Keep it cool and in the open

- Leave some air around it — not buried under blankets, papers or carpet.
- Keep it away from space heaters, radiators and other heat sources.
- Mount it on the back of the desk or the wall with the screw slots on the back, if you'd like it off the floor. That also keeps it away from mopping water and pets.

WHAT THIS DOES FOR YOU

What this does for you

A few minutes of care at setup means the protection actually works on the day a surge comes — and the strip itself never becomes the hazard.

CHAPTER 7

Daisy Chains, Overloads & Other Fire Risks

Power strips and surge protectors are safe when used as intended. Most problems come from asking them to do too much. Here are the habits that matter.

Don't plug one strip into another

Plugging a power strip or surge protector into another one is called **daisy-chaining**. It's tempting when you run out of outlets, but it's unsafe: it makes overloading much more likely, can overheat the cords and the wall outlet, and can start a fire. Surge protector makers also say it voids the warranty. The same goes for plugging a surge protector into an extension cord, or an extension cord into a surge protector.

TIP

Out of outlets? Do this instead

Buy one surge protector with enough outlets and a long enough cord for the job. If you truly need more outlets in a room, that's a job for an electrician to add a new wall outlet — not for a chain of strips.

Don't overload it

Most home surge protectors are rated for **15 amps**. Eaton, which makes Tripp Lite surge protectors, suggests staying about 20% below the limit — so no more than about **12 amps** on a 15-amp strip. You don't need to do math for TVs, chargers and computers; together they rarely come close. The things that eat up a strip's capacity are appliances that make heat.

Things that should go straight into the wall

- **Space heaters** — always into a wall outlet, never a power strip, and never with the cord under a rug. Federal safety officials repeat this every winter.
- **Hair dryers, curling irons and toasters** — high-power heat appliances.
- **Microwaves, refrigerators and window air conditioners** — follow the maker's instructions, which usually call for a wall outlet.
- **Medical equipment** — follow the equipment supplier's instructions (Chapter 20).

STAY SAFE

Warning signs to act on right away

Unplug a surge protector or power strip immediately and replace it if it feels hot, smells like burning plastic, buzzes, sparks, or looks discolored, cracked or melted. A buzzing surge protector may be damaged; if the problem continues after you replace it, have an electrician look at the outlet.

Gentle cord habits

- Pull a plug out by its plug, not by yanking the cord.
- Don't run cords under rugs, through doorways, or where furniture legs sit on them.
- Don't use a surge protector as a footrest, and keep drinks off of it.
- Replace any cord with cracked insulation or bent prongs.

WHAT THIS DOES FOR YOU

What this does for you

These few habits turn a power strip from a hidden fire risk into the safe, handy tool it's meant to be. They're worth sharing with anyone else in the house, too.

CHAPTER 8

When to Replace a Surge Protector

Here's something many people don't know: **surge protectors wear out**. Every surge they absorb, big or small, uses up a little of their capacity. Eventually there's none left — and many will keep passing power to your devices long after the protection is gone.

Check the Protected light

Most good surge protectors have a small light labeled **Protected** (sometimes a shield icon). When it's lit, the protection circuit is still working. When it goes dark, the protection is used up — even if your TV still turns on.

A quick yearly check

1. Pick an easy date to remember, like a birthday or the day the clocks change.
2. Use a flashlight to look behind the TV stand and under the desk at each surge protector.
3. Look for the **Protected** light. If it's out, replace that surge protector.
4. While you're there, feel the strip (it should be cool or barely warm) and look for any discoloration, cracks or melting.
5. Check the date you wrote on the bottom (Chapter 4).

Other times to replace one

- The **Protected** light is off, or the strip has shut itself off and won't give power anymore.
- After a big electrical event, such as a nearby lightning strike that knocked out the power.
- Any sign of heat damage: discoloration, melting, cracks, a burning smell or buzzing.
- It has no indicator light and you don't know how old it is.

GOOD TO KNOW

There's no magic number of years

Eaton says there's no set lifespan for a surge protector; it depends on how many surges it's taken and how big its joule rating is. That's why the indicator light matters so much. If you're buying new, choose a model that has one.

TIP

Check the warranty before you toss it

Some makers replace a worn-out surge protector under their own warranty. Eaton, for example, says its Tripp Lite series surge protectors are covered by a limited lifetime warranty. It's worth a look before you buy a new one.

WHAT THIS DOES FOR YOU

What this does for you

A two-minute look each year makes sure the protection you're counting on is really there.

CHAPTER 9

Protecting the Cable, Phone & Network Lines

Surges don't only travel through power cords. They can also come in through the **coaxial cable** (the round cable with a screw-on end that brings cable TV and cable internet), a **phone line**, or an **Ethernet** network cable. If a surge comes in that way, a power-only surge protector won't stop it.

Surge protectors with data jacks

Many surge protectors include extra jacks marked **Coax**, **Tel** or **Phone**, or **Ethernet** / **Network**. Each pair is labeled **IN** and **OUT**. The line from the wall goes into IN; a short cable runs from OUT to your device.

To protect your cable modem's coax line

1. Choose a surge protector with coax jacks, and have a short coax cable handy (they often come in the box).
2. Unplug the modem's power cord.
3. Unscrew the coax cable from the back of the modem.
4. Screw that cable onto the surge protector's coax **IN** jack.
5. Screw the short cable onto the coax **OUT** jack, and its other end onto the modem.
6. Plug the modem's power into the same surge protector, then wait two or three minutes for its lights to settle.

TIP

Keep it all on the same surge protector

Run a device's power cord and its data cable through the same surge protector. That way both paths into the device are protected in one place, which is how these combined jacks are meant to be used.

GOOD TO KNOW

Fiber internet is a little different

If your internet comes in on a thin fiber-optic cable, the fiber itself doesn't carry electricity. The box it plugs into (often called an ONT) still runs on power, though, so give its power adapter a surge protector or battery backup like any other device.

HEADS UP

Every connection adds a little signal loss

Adding extra jacks and cables can slightly weaken a cable signal. If your internet or TV picture gets worse after adding coax protection, check that every connector is snug, and try a better-quality short cable. If it's still worse, call your provider or me.

WHAT THIS DOES FOR YOU

What this does for you

Closing the "back doors" protects the modem and router that the whole house depends on — and saves you a service call and an equipment fee if a storm comes through.

PART 3

Whole-Home Protection

A surge protector at the electrical panel, what it can and can't do, and the honest truth about lightning storms.

CHAPTER 10

Whole-Home Surge Protection at the Panel

Besides the surge protectors you plug in, there's another kind: a **whole-home surge protector**, a device mounted at (or right next to) your home's main electrical panel. It's sometimes called a Type 1 or Type 2 surge protective device, or an SPD.

What it does

A whole-home surge protector stands guard where electricity enters your house. It's designed to stop large surges coming in from outside — from the utility lines or nearby lightning — before they reach your wiring. That protects things you can't plug into a strip: the furnace and air conditioner controls, the refrigerator, the washer and dryer, the garage door opener, smoke detectors, and the electronics in newer stoves and dishwashers.

What it doesn't do

Remember that most surges start *inside* the home, when appliances switch on and off. A whole-home device at the panel doesn't stop those small internal surges. That's why it's wise to use both: the whole-home device for big outside surges, and plug-in surge protectors at your most valuable electronics.

> GOOD TO KNOW
>
> **Newer electrical codes require one**
>
> The 2020 edition of the National Electrical Code added a requirement for surge protection on the electrical service of homes, including when the service equipment is replaced. Whether and how that applies to your house depends on the code your area has adopted and on the work being done, so ask the electrician and your local building department.

This is a job for a licensed electrician

I want to be completely plain about this: **installing a whole-home surge protector means working inside your electrical panel, and that's a job for a licensed electrician.** It isn't a do-it-yourself project, and it isn't something I do. I'm glad to help you understand your options, look over the electronics side, and make sure your plug-in protection and battery backups are set up well — but the panel work belongs to a licensed professional who can pull any needed permit.

Questions to ask an electrician

- Is a Type 1 or Type 2 device the right fit for my panel?
- Will it be installed in the panel or right next to it, and is my grounding in good shape?
- Does it have an indicator light so I can tell it's still working, and will you show me where it is?
- Does this work need a permit and inspection where I live?
- Can you protect the cable and phone lines where they enter the house, too?
- What's the total installed price, and what warranty comes with it?

HEADS UP

What it might cost

National cost guides put a typical installed whole-home surge protector in the range of roughly **$200 to $800**, with many jobs landing in the few-hundred-dollar range. The real number depends on your panel and local labor rates. Get a written quote from a licensed electrician; it's the only figure that counts.

WHAT THIS DOES FOR YOU

What this does for you

A whole-home device protects the expensive built-in appliances that a plug-in strip can't reach. Paired with good surge protectors at the TV and computer, it gives you layered protection.

CHAPTER 11

Lightning Storms: What Actually Helps

Northeast Ohio gets its share of summer thunderstorms. Here's the honest picture of what protection can and can't do when lightning is close.

What surge protectors can do

When lightning strikes near power lines, the utility's equipment carries away most of the energy, but some can still reach your house. A good surge protector on a properly grounded outlet can divert much of that leftover energy away from your electronics. A whole-home device adds another layer.

What nothing can promise

No surge protector can guarantee protection from a direct or very close lightning strike. The surest protection during a severe storm is simply **unplugging** your most valuable electronics — and that includes the cable or antenna line, not just the power cord.

When a big storm is on its way

1. Save your work and shut down the desktop computer the normal way.
2. Unplug the computer's power cord, or unplug its surge protector or battery backup from the wall.
3. Unplug the TV, or its surge protector, from the wall. Unscrew the cable or antenna wire too, if it's easy to reach.
4. Leave the modem and router plugged in only if you need them during the storm and they're on a surge protector or battery backup.
5. Charge your cell phone while you still have power.
6. After the storm passes, plug everything back in and check that the Protected lights are still on.

STAY SAFE

Never unplug things during lightning

Do your unplugging *before* the storm arrives. Once thunder is close, stay away from corded electrical equipment, plumbing and windows, and leave things as they are until it passes.

TIP

After a close strike, check everything

If lightning struck nearby and the power went out, look at each surge protector's Protected light once the power returns. A strip that took a big hit may have used up its protection and should be replaced (Chapter 8).

GOOD TO KNOW

If something is damaged in a storm

FirstEnergy says it does not reimburse customers for equipment damaged during a weather-related outage, and suggests checking with your homeowner's or renter's insurance. Take photos of anything damaged and keep receipts. If your surge protector came with a connected-equipment warranty, check its claim steps too.

WHAT THIS DOES FOR YOU

What this does for you

A five-minute storm routine protects the things that matter most, without worrying about every gadget in the house.

PART 4

Battery Backups (UPS)

What a battery backup does, the three kinds, how to size one without a headache, setting one up for a computer, and what all the beeping means.

CHAPTER 12

What a Battery Backup Does

A **battery backup** — the industry calls it a **UPS**, short for *uninterruptible power supply* — is a box with a rechargeable battery inside and outlets on the back. You plug it into the wall, and you plug your important devices into it.

In everyday life, it does three things

1. **Keeps devices running when the power blinks or goes out.** The switch to battery happens so fast that a computer or router usually doesn't notice.
2. **Gives you time.** A few minutes to save your work and shut a computer down properly, or long enough for the modem and router to ride out a short outage.
3. **Protects against surges.** Most UPS models include surge protection on their outlets.

GOOD TO KNOW

It's a bridge, not a generator

A home battery backup is meant to carry small electronics through a short outage — minutes to perhaps an hour or two, depending on what's plugged in. It won't run a refrigerator, a furnace or a space heater. For longer outages, see portable power stations (Chapter 21) and generators (Chapter 22).

Battery outlets and surge-only outlets

Look closely at the back of a UPS and you'll usually see two groups of outlets, labeled something like **Battery Backup + Surge** and **Surge Only**. Only the first group keeps running in an outage. Put the things that must stay on — the computer and its monitor, or the modem and router — on the battery side. Put printers, speakers and desk lamps on the surge-only side.

HEADS UP

Laser printers don't belong on the battery side

Laser printers draw a big burst of power when they warm up, which can overload a small UPS. Plug them into the surge-only outlets or a separate surge protector.

TIP

Don't plug a surge protector into a UPS

A UPS already has surge protection built in. Plugging a surge protector or power strip into it is unnecessary, raises the risk of overloading it, and can void its warranty. Plug devices straight into the UPS.

GOOD TO KNOW

Why the power "blinks"

FirstEnergy explains that a quick power blink of a few seconds happens when its system briefly shuts off a line to isolate a problem, such as a branch touching the wires, then resets itself. It can happen even on a sunny day. A UPS carries your computer and Wi-Fi right through those blinks. If your power blinks often, FirstEnergy asks you to call 1-888-544-4877 and tell them.

WHAT THIS DOES FOR YOU

What this does for you

No more losing a letter you were typing when the lights flicker, and no more waiting for the internet to restart every time the power blinks during a storm.

CHAPTER 13

Standby, Line-Interactive & Online: The Three Kinds

Battery backups come in three basic designs. The names sound technical, but the differences are simple, and for most homes only the first two matter.

Standby (also called offline)

The simplest and least expensive kind. Normally it passes wall power straight through to your devices. When the power fails, it switches to battery. It's a good, budget-friendly choice for a modem and router, or a basic home computer.

Line-interactive

One step up. It does everything a standby unit does, and it also smooths out **brownouts** and small voltage swings without using the battery, using a feature called **AVR** (automatic voltage regulation). If your lights sometimes dim when the air conditioner starts, or you live where power is a bit unsteady, this kind saves wear on its battery and your electronics. Most mid-priced home models are line-interactive.

Online (also called double-conversion)

The premium kind, used mostly for business servers and sensitive equipment. It runs devices from its battery circuitry all the time, so there's no switch-over at all. It costs more and is more than most homes need.

The waveform question: pure sine wave or simulated

When running on battery, a UPS makes its own electricity. Better models make a smooth "pure" sine wave, like the wall outlet. Less expensive ones make a stepped, **simulated sine wave**. Simple gadgets don't care. But many newer desktop computers have a type of power supply called **active PFC**, and CyberPower notes these can shut off when a simulated-sine UPS switches to battery — which defeats the whole purpose.

TIP

The simple rule

For a modem, router or home phone base, a simulated sine wave UPS is fine. For a desktop computer, especially a newer or energy-efficient one, choose a model that says **pure sine wave** (or just "sine wave") on the box. If you're not sure what your computer needs, I'm happy to check.

Kind	Handles outages	Smooths brownouts	Typical home use
Standby	Yes	No	Modem & router, basic computer
Line-interactive	Yes	Yes (AVR)	Home office computer, unsteady power
Online	Yes, no switch-over	Yes	Servers, special equipment

WHAT THIS DOES FOR YOU

What this does for you

Knowing the three kinds keeps you from overpaying for features you don't need — or underbuying for a computer that would shut off anyway.

CHAPTER 14

VA, Watts & Runtime Without the Headache

Every UPS box shows two numbers, such as **600VA / 330W** or **1500VA / 1000W**. Here's what they mean and how to use them — no electrical degree required.

VA and watts

Watts (W) is the actual power your devices use. **VA** (volt-amperes) is a related, larger number engineers use. The one you care about is **watts**. A UPS's watt rating is the most it can power at once; the VA number is always higher and can be misleading if you go by it alone.

Find out how many watts your devices use

1. Look at the label on each device, or on its power adapter (the "brick" on the cord).
2. If it lists **watts** (W), write that number down.
3. If it lists volts and amps instead — such as **12V** and **1.5A** — multiply them: 12 × 1.5 = **18 watts**. That's the most it can draw; most of the time it uses less.
4. Add up the watts for everything you plan to plug into the battery outlets.
5. Choose a UPS whose **watt** rating is comfortably above your total. APC suggests leaving 20–30% of headroom.

> **TIP**
>
> **A modem and router are light**
>
> Small network boxes usually run on low-power adapters, so even a small UPS can carry them for a good while. A desktop computer and monitor use much more, so the same UPS will run them for a much shorter time.

Runtime: how long it will last

Runtime is how long the battery can keep your devices going. It depends on how much you plug in: the lighter the load, the longer it lasts. Makers publish a **runtime chart** or an online **runtime calculator** for each model — you enter your watts, and it tells you the minutes.

To estimate your runtime

1. Add up your watts (above).
2. Go to the UPS maker's website and search for your model number plus "runtime."
3. Find your total watts on the chart, or type them into the calculator.
4. Read off the minutes. Treat it as an estimate — batteries lose some capacity as they age.

GOOD TO KNOW

What the big boxes cost

As of November 2026, a small 600VA standby UPS of the kind often used for a modem and router sells for roughly $80–$140, and a 1500VA pure sine wave model for a desktop computer for roughly $210–$280, depending on the store. Larger batteries and lithium models cost more.

WHAT THIS DOES FOR YOU

What this does for you

A few minutes of arithmetic means you buy a battery backup that actually lasts long enough for what you need — instead of one that's too small, or a heavy, expensive one you didn't need.

CHAPTER 15

Setting Up a Battery Backup for Your Computer

Setting up a UPS takes about twenty minutes, most of it waiting for the battery to charge.

To set up a new UPS

1. Unbox it and read the quick-start card. Some models ship with the battery disconnected for safety — the card shows how to connect it (often a tab or plug under a cover).
2. Place it on the floor or a sturdy shelf where air can flow around it, away from heaters and direct sun. Heat shortens battery life.
3. Plug the UPS **directly into a grounded wall outlet** — not an extension cord or power strip.
4. Let it charge. Many makers suggest charging for several hours before relying on it; your quick-start card gives the time for your model.
5. Shut down your computer. Plug the computer and monitor into the **battery backup** outlets. Plug printers and speakers into the **surge-only** outlets.
6. If it came with a USB cable, connect it from the UPS's data port to the computer. That lets the computer see the battery and shut itself down safely during a long outage.
7. Turn the UPS on (if it has a power button), then turn the computer on.

HEADS UP

Don't use the UPS as your on/off switch

Turn your computer on and off with its own power button, not by switching the UPS off and on. APC notes that using the UPS as a master switch can cause a premature "replace battery" warning.

Letting the computer shut itself down

With the USB cable connected, Windows and Macs can see the UPS much like a laptop battery. You can also install the UPS maker's free software, which can shut the computer down on its own when the battery gets low. CyberPower's is called **PowerPanel Personal**. APC discontinued its old PowerChute Personal Edition in January 2025; its replacement is **PowerChute Serial Shutdown**.

TIP

Download only from the maker

Get UPS software only from the maker's own website (or from Bill). Pop-up ads offering "UPS drivers" or "battery utilities" are a common way to slip unwanted programs onto a computer.

When the power goes out

1. The UPS will start beeping. That's normal — it's telling you it's on battery.
2. Save whatever you're working on right away.
3. If the power isn't back in a minute or two, shut the computer down the normal way.
4. Once the computer is off, you can turn the UPS off to stop the beeping and save its battery for the modem and router, if they're plugged into it.

WHAT THIS DOES FOR YOU

What this does for you

Your photos, documents and records stay safe, and you never again lose an hour's work to a flicker of the lights.

CHAPTER 16

Beeps, Lights & Self-Tests

Battery backups talk to you with beeps and lights. Learning the few common signals takes the worry out of them. The exact patterns vary by model, so keep the quick-start card or user manual handy (or find it on the maker's website by searching your model number).

The usual signals

What you see or hear	What it usually means
Occasional beeps, every 30 seconds or so	Running on battery. Save your work.
Fast, steady beeping	Battery is almost empty. Shut the computer down now.
A long continuous tone	An overload on some models, a battery fault on others. Check your manual, and try unplugging one thing.
"Replace Battery" light, or a distinct chirp pattern	The self-test says the battery is wearing out.
No lights at all	The UPS is off, unplugged, or the wall outlet has no power.

GOOD TO KNOW

Patterns differ between brands

For example, APC says its Back-UPS ES models signal a battery problem with a constant tone and red and green lights, while its Back-UPS Pro models chirp rapidly with a Replace Battery light. Your manual has the exact list.

The self-test

Most UPS units test their own battery automatically every so often. You can also run a test yourself. On many APC Back-UPS models, you press and hold the power button while the unit is on and plugged in, and let go after a second beep or when the light starts blinking. Check your manual — the method varies by model.

If the Replace Battery warning comes on

1. Let the UPS charge for at least four hours.
2. Run a self-test (or turn it off and back on, which on many models starts one).
3. If the warning comes back, the battery needs replacing (Chapter 23).

TIP

A safe practice run

Once a year, on a calm day, save your work and pull the UPS's plug out of the wall for a minute. Everything on the battery outlets should keep running. Plug it back in. If things shut off instantly, the battery is worn out.

WHAT THIS DOES FOR YOU

What this does for you

Instead of a mysterious beeping box, you'll have a helper whose messages you understand — and you'll know the battery works before the day you need it.

PART 5

Staying Connected in an Outage

Keeping your internet, your home phone and your cell phone working when the power goes out — and making sure you can always reach 911.

CHAPTER 17

Keeping Your Internet On When the Power Goes Out

When the power goes out, your Wi-Fi goes out too — even if the internet company's lines are still working — because your modem and router need electricity. A small battery backup can change that.

What has to stay powered

Follow the cables from the wall to your Wi-Fi. Every box with a power cord along that path needs backup power for the internet to keep working:

- **Cable internet** (such as Spectrum): the modem (or a combined modem-router "gateway") and, if separate, the Wi-Fi router.
- **Fiber internet**: the fiber box on the wall, often called an **ONT**, plus the router.
- **Mesh Wi-Fi**: the main unit at the modem. The extra satellite units around the house each need power too, or the far rooms will lose Wi-Fi.
- **Phone-line DSL**: the DSL modem and router.

> GOOD TO KNOW
>
> **Your provider needs power too**
>
> Your internet company's equipment out in the neighborhood also needs power. In a wide outage, it may run on its own backup for a while — or it may not. A battery backup at home keeps your end ready, but it can't keep the whole system up.

To put your modem and router on a battery backup

1. Choose a small UPS with at least two or three **battery** outlets, spaced to fit the power adapters (Chapter 14).
2. Plug the UPS straight into a grounded wall outlet near the modem, and let it charge.
3. Unplug the modem and router power adapters from wherever they are now.
4. Plug both into the UPS's **battery backup** outlets. If you have a fiber box (ONT) nearby, plug its adapter in too.
5. Wait two or three minutes for the lights on the modem and router to settle, then check that your phone or tablet has Wi-Fi.

6. Do a practice run: unplug the UPS from the wall. The modem and router lights should stay on. Plug it back in.

TIP

Restart order still applies

If you ever need to restart the equipment, the order is the same as always: modem first, wait for its lights to settle, then the router. Our Wi-Fi guide covers this in detail.

HEADS UP

Leave the Wi-Fi equipment where it works best

Don't move your router into a closet just to sit next to the UPS — Wi-Fi works best out in the open. Put the UPS next to the router instead, or use a UPS with a long enough cord.

WHAT THIS DOES FOR YOU

What this does for you

During a short outage, you can still check the news and weather, see your electric company's outage map, video-call family, and use an internet-based home phone. That's a real comfort on a dark evening.

CHAPTER 18

Your Home Phone & 911 in an Outage

This chapter is one of the most important in the guide. Many people assume their home phone always works when the power is out, because it used to. That's often no longer true.

Old copper lines vs. today's phone service

A traditional landline on **copper wires** gets its power from the phone company, so it usually keeps working in a power outage. But many homes now get phone service over **fiber**, **cable**, the internet (sometimes called VoIP or digital voice), or a wireless home-phone box. Those all need power in your house to work — and without backup power, **they go dead when the lights go out**, including calls to 911.

What the FCC requires of phone companies

Under FCC rules, a company providing home phone service that isn't powered by the line itself must:

- Tell new customers, when they sign up, that the phone won't work in an outage without backup power.
- Offer the option to buy a backup battery that provides at least **24 hours** of standby power.
- Explain how to use, test and maintain the battery, and what happens without one.
- Repeat that information to customers **every year**.

You don't have to buy the battery. But the FCC asks you to think about how you would call 911 during an outage — and a mobile phone needs a charged battery too.

STAY SAFE

Cordless phones don't work in an outage

A cordless phone's base plugs into the wall, so it goes dead when the power does — even on an old copper line. Keep one inexpensive **corded** phone in the house and know where it is. If your service needs backup power, the corded phone still needs that battery to be working.

To find out where you stand

1. Look at your phone bill or account to see what kind of service you have (copper landline, digital voice, fiber voice, or cable phone).
2. Call your phone company using the number on your bill and ask: "Will my home phone work in a power outage? Do I have a backup battery, and is it still good?"
3. If they offer a battery, ask what it costs, how long it lasts, and how to test it.
4. If you rely on a medical alert button or a home security system that uses the phone line, ask whether it will keep working during an outage.
5. Write the answers on your Cheat-Sheet (Chapter 26).

GOOD TO KNOW

Backup batteries for phone service wear out

Like any battery, the one that powers your phone service ages. Some kinds use a sealed rechargeable battery; some newer accessories use ordinary D-cell batteries you replace yourself. Ask your provider how to check yours, and put a yearly reminder on your calendar.

TIP

A UPS can do the job too

The FCC notes you can use another backup source, like an uninterruptible power supply, to power your home phone equipment. If your internet modem also provides your phone service, putting it on the UPS from Chapter 17 covers both.

WHAT THIS DOES FOR YOU

What this does for you

Knowing — not guessing — that you can call 911 during a storm is one of the most important things this guide can give you. It takes one phone call to find out.

CHAPTER 19

Your Cell Phone: Your Lifeline in an Outage

In a long outage, your cell phone becomes your flashlight, your radio, your news source and your way to call for help. A little preparation helps it last.

Before the storm

- Keep your phone charged when bad weather is forecast.
- Keep a charged **power bank** (a pocket battery for charging phones) in a drawer, and recharge it every few months.
- Save your electric company's outage number and text number in your contacts (for Ohio Edison and the other FirstEnergy companies, see the box below).
- Write important phone numbers on paper too, in case the phone runs flat.

Stretch the battery during an outage

On an iPhone

1. Open **Settings** and tap **Battery**.
2. Turn on **Low Power Mode**. (On some newer iPhones, it's under **Battery** > **Power Mode**.)
3. Turn the screen brightness down, and close apps you're not using.

On an Android phone

1. Open **Settings** and tap **Battery**.
2. Tap **Battery Saver** and turn it on. (Samsung phones call it **Power saving**.)
3. Turn the screen brightness down, and close apps you're not using.

GOOD TO KNOW

Report and track an outage by text

If your electric company is Ohio Edison or another FirstEnergy company, you can report an outage by texting **OUT** to **544487** once you've registered by texting **REG** to the same number, or by calling **1-888-544-4877**. Texting uses far less battery than browsing an outage map.

STAY SAFE

Charging in the car? Never in a closed garage

If you charge your phone from the car during an outage, do it outdoors in the open. Running a car in an attached or closed garage can fill the house with deadly carbon monoxide, even with the garage door open.

WHAT THIS DOES FOR YOU

What this does for you

A charged phone and a charged power bank mean you can stay in touch with family, follow the news and call for help, no matter how long the outage lasts.

PART 6

Bigger Backup & Staying Safe

Medical equipment that needs power, portable power stations, generators and carbon monoxide, replacing and recycling batteries, and the scams that follow storms.

CHAPTER 20

Medical Equipment & Power Outages

If you or someone in your home relies on equipment that needs electricity — an oxygen concentrator, a CPAP or BiPAP machine, a nebulizer, a powered bed or lift chair, a home dialysis machine, or a refrigerated medicine — a power outage is more than an inconvenience. A plan made on a calm day makes all the difference.

STAY SAFE

If equipment keeps someone alive, call for help early

If anyone depends on a device to stay alive and the power is out, don't wait it out at home. The FDA advises seeking emergency services right away. Call 911 if it's an emergency.

Step one: talk to your equipment supplier

The company that supplies the equipment — the medical supply or oxygen company — is the right first call. Each device is different, and they know yours. The FDA suggests reading the instructions or calling the supplier to find out whether your device can run on batteries or a generator.

Questions to ask your supplier

- Can this device run on a battery? How long will it last on one charge?
- Should I have a spare battery, or backup oxygen tanks, in case the power is out for a long time?
- Can it safely run from a battery backup, a portable power station, or a generator? Which kinds and sizes are compatible?
- For a CPAP: how much longer will the battery last if I turn off the humidifier or heated tubing?
- What should I check when the power comes back on?

Step two: tell your electric company

The FDA suggests letting your electric company and fire department know that you use a medical device that needs power. For many homes in Portage County, the electric company is Ohio Edison, part of FirstEnergy (your bill shows which company serves you). FirstEnergy has a program for customers whose life-support equipment needs power, called the **Critical Customer Care Program**.

To get on FirstEnergy's critical care list

1. Call FirstEnergy at **1-800-662-3115** and say that someone in your household depends on electrically operated life-support equipment.
2. FirstEnergy mails you a form. Have the physician complete and sign it, and send it back. This has to be renewed with the physician's signature **every year**.
3. Once it's received, you're added to the critical care list. There's no charge.
4. During an outage that may last more than 24 hours, FirstEnergy uses the list to contact critical care customers by telephone. The list is also shared with county and city emergency management offices.

HEADS UP

Registering doesn't mean faster repairs

FirstEnergy says plainly that it cannot guarantee faster power restoration for customers with medical needs, and it advises life-support customers to have a backup plan, such as batteries or a generator. Registering helps the company know about you; it doesn't replace your own plan.

GOOD TO KNOW

A separate Ohio protection for bills

Ohio also has a **30-day medical certificate** that can delay a disconnection for non-payment when a licensed medical professional certifies it. It's different from the outage program above. The Ohio Consumers' Counsel explains how it works.

Step three: put the plan on paper

1. List each device, its supplier's phone number, and how long its battery lasts.
2. Keep spare batteries charged, and recharge them on a schedule.
3. Keep a flashlight or battery lantern by the bed — never candles near oxygen.
4. Decide where you'd go if the outage runs long: a family member's home, or a shelter your county opens during emergencies.
5. When the power comes back, check that the device's settings haven't reset. The FDA notes many devices return to default settings after the power is interrupted.

WHAT THIS DOES FOR YOU

What this does for you

A one-page plan, a registered account, and a conversation with the supplier turn a frightening outage into a situation you've already thought through.

CHAPTER 21

Portable Power Stations

A **portable power station** is a large rechargeable battery in a case with a handle, and household outlets and USB ports on the front. Think of it as a big, quiet battery backup you can carry from room to room. Unlike a gasoline generator, it makes no fumes, so it can be used indoors.

What one is good for

- Keeping the modem and router running for many hours.
- Charging phones, tablets, hearing aids and laptops for days.
- Running a lamp, a radio or a small fan.
- Powering a CPAP through the night, if the CPAP maker and your supplier say it's compatible.

The numbers on the box

What it says	What it means
Capacity (Wh, watt-hours)	How much energy it holds — the size of the fuel tank. Bigger lasts longer.
Output (W, watts)	The most it can power at once. Check it's above your devices' total.
Surge or peak watts	A short burst for things that start up hard, like a small refrigerator.
Battery type	LiFePO4 (lithium iron phosphate) batteries are known for lasting many charge cycles.
Charging	From a wall outlet, a car outlet, or solar panels sold separately.

A rough runtime estimate

1. Find the station's capacity in watt-hours (for example, **1,000 Wh**).
2. Add up the watts of what you'll plug in (for example, a modem and router at **25 W**).
3. Divide: 1,000 ÷ 25 = 40 hours.
4. Take a good bite off that number — some energy is lost converting the battery's power to household power — and treat the answer as a rough guide, not a promise.

GOOD TO KNOW

Look for a safety listing

Portable power stations are tested to a UL safety standard for "portable power packs" called **UL 2743**. Look for that listing from a recognized testing lab on the product or in its specifications, rather than buying an unlisted bargain.

HEADS UP

Lithium batteries deserve respect

Charge a power station on a hard surface, away from beds and curtains, and follow the maker's directions. Stop using it and unplug it if it swells, smells, gets unusually hot or makes popping sounds. Check the CPSC recall list (cpsc.gov/Recalls) for your model now and then.

TIP

Keep it charged, not forgotten

A power station that's been sitting in a closet for a year may be nearly empty on the day you need it. Put a reminder on the calendar to top it up every few months.

GOOD TO KNOW

What they cost

Prices range widely, from a couple of hundred dollars for small units to well over a thousand for large ones that can run a refrigerator for a while. Buy for what you actually need to keep running.

WHAT THIS DOES FOR YOU

What this does for you

A quiet battery you can use safely indoors keeps your phone, internet and small essentials going through a long outage — without the fumes and fuel of a generator.

CHAPTER 22

Generators & Carbon Monoxide

Gasoline and propane generators can power much more than a battery can. They also bring the most serious danger in this whole guide: **carbon monoxide** (CO), a gas you can't see or smell that can kill in minutes.

STAY SAFE

The rules that save lives

Never run a portable generator inside a home, garage, basement, crawlspace or shed — even with doors and windows open. Run it **outside only, at least 20 feet from the house**, with the exhaust pointing away from windows, doors and vents. Not on the porch, and not in the carport. The Consumer Product Safety Commission says an average of about 100 people in the U.S. die each year from CO poisoning from portable generators.

Carbon monoxide alarms are a must

- Install battery-operated CO alarms, or plug-in ones with a battery backup, on every level of the home and outside sleeping areas. Interconnected alarms are best — when one sounds, they all sound.
- Test CO and smoke alarms monthly and replace batteries as needed.
- If a CO alarm sounds, **get outside immediately**, then call 911. Don't stop to turn off the generator first.

Signs of carbon monoxide poisoning

Early symptoms feel like the flu or food poisoning: headache, dizziness, nausea, weakness, shortness of breath, or fainting. If anyone in the house feels this way while a generator or fuel-burning heater is running, get everyone into fresh air and call 911.

Connecting a generator to the house

Never plug a generator into a wall outlet to power the house. This is called "backfeeding." It can start a fire, and it can electrocute a utility worker or neighbor on the same line. To run household circuits from a generator, you need a proper isolation device — a transfer switch — installed by a licensed electrician.

Everyday generator safety

- Use heavy-duty extension cords rated for outdoor use and for the wattage you're running.
- Keep the generator dry, on a dry surface, and touch it only with dry hands.
- Turn it off and let it cool before refueling. Never refuel a running generator.
- Store fuel outside the living areas, in proper labeled containers.
- When buying, look for a model with a CO shut-off feature. CPSC says models certified to the newer UL 2201 and PGMA G300-2018 standards are expected to cut CO deaths sharply.

GOOD TO KNOW

A surge protector can be used with a generator

Eaton says a surge protector can be used on generator power, but an indoor surge protector shouldn't be left outdoors unattended unless it's rated for continuous outdoor use.

WHAT THIS DOES FOR YOU

What this does for you

Following these few rules lets a generator do its job — keeping the refrigerator and furnace going — without putting anyone in the family, or the line crews, at risk.

CHAPTER 23

Batteries: Replacing & Recycling Them

Every battery backup and power station has a battery that wears out in time. Replacing it is often far cheaper than replacing the whole unit, and recycling the old one keeps everyone safe.

How long UPS batteries last

APC (Schneider Electric) says the sealed lead-acid batteries in most home UPS units last about **3 to 5 years** in good conditions, and lithium-ion UPS batteries about **8 to 10 years**. Heat shortens that a lot — a battery kept in a hot room wears out much faster. The UPS itself usually lasts around 7 to 10 years.

TIP

Battery or whole new unit?

If the UPS is more than about 8 years old and its battery is worn out, APC suggests considering a whole new UPS instead of just a battery. A new unit comes with a new warranty on both.

To replace a UPS battery

1. Find the model number on the bottom or back of the UPS.
2. On the maker's website, use its replacement-battery finder to get the exact battery for your model. Many models let you swap the battery yourself through a door on the bottom or front.
3. Save your work and shut down anything plugged into the UPS. Turn the UPS off and unplug it from the wall.
4. Follow the maker's instructions to open the battery door, disconnect the old battery and slide it out. Batteries are heavy, so lift carefully.
5. Slide the new battery in, reconnect it, close the door, plug the UPS back in and let it charge.
6. Run a self-test (Chapter 16).

HEADS UP

If your UPS doesn't have a battery door

Some small units are sealed and aren't meant to be opened. Don't pry them apart. In that case, replace the whole UPS and recycle the old one.

Recycling old batteries the safe way

- **Never put lithium-ion batteries in the household trash or curbside recycling bin.** The EPA warns they can start fires in garbage trucks and at recycling centers.
- Before dropping one off, tape over the terminals with clear tape, or put each battery in its own plastic bag.
- Take them to a battery collection site — many electronics and home-improvement stores have one — or a household hazardous waste drop-off.
- The sealed lead-acid batteries from UPS units are accepted by The Battery Network (formerly Call2Recycle). Its online locator finds drop-off sites by ZIP code.
- Both APC and Eaton describe battery recycling options for their UPS batteries on their websites.

TIP

Ordinary alkaline batteries

According to the EPA, in most communities ordinary alkaline batteries (the everyday AA, AAA, C and D kind) can go in the household trash. Button and coin batteries and lithium batteries should not.

WHAT THIS DOES FOR YOU

What this does for you

A fresh battery brings an old UPS back to life for a fraction of the cost of a new one, and safe recycling keeps a worn-out battery from becoming a fire.

CHAPTER 24

Scams That Follow Storms & Outages

Bad weather and power trouble bring out scammers, because people are worried and in a hurry. Here are the ones to watch for.

SCAM ALERT

"Pay now or your power gets shut off today"

A caller, text or email says you're behind on your electric bill and the power will be cut off within the hour unless you pay right now — often with a prepaid card, gift card or payment app. That's a scam. FirstEnergy says customers who are behind receive **written notices**, its representatives won't call or email demanding immediate payment to avoid a same-day shutoff, and it never requires a prepaid card. Hang up, and call the number on your bill.

SCAM ALERT

The fake utility worker at the door

Someone shows up saying they're from the electric company and need to come in to check your meter or "fix the surge problem." Don't let anyone in unless you scheduled the visit and they show company photo ID. FirstEnergy employees always carry photo identification. When in doubt, keep the door locked and call the company yourself.

SCAM ALERT

Plug-in "power saver" boxes

Ads promise a small box that plugs into any outlet and cuts your electric bill in half. Independent testers, including UK trading-standards officials and the consumer group Which?, found these devices don't do what they claim; some contain little more than a light. A surge protector won't lower your electric bill either. Save your money.

Other storm-season tricks

- Pop-ups that claim a surge "damaged your computer" and give a number to call. Real computers don't report surge damage that way — close the browser, and call someone you trust.
- Door-to-door sellers pushing whole-house surge protection or generators with high pressure and "today only" prices. Get written quotes from licensed electricians you contact yourself.

- Texts with links to "claim a refund" for an outage. Go to your electric company's website yourself instead of tapping the link.

TIP

The one rule that beats every scam

If anyone rushes you to pay or let them in, slow down. Hang up or close the door, and contact the company using the number on your bill or its official website.

WHAT THIS DOES FOR YOU

What this does for you

Knowing these tricks ahead of time means a storm costs you, at most, a little inconvenience — never your savings.

PART 7

When to Call Bill & Your Cheat-Sheet

An honest word about when a hand is worth it, and a one-page summary to keep by the modem.

CHAPTER 25

When to Call Bill

Most of what's in this guide you can do yourself, at your own pace. But part of being helpful is being honest about when a hand saves you time, money or worry. Here's my straight advice, with no pressure.

Times it's well worth a call

- **A walk-through of the whole house** — I'll look at every surge protector and power strip, check the Protected lights, spot any daisy chains or overloaded strips, and tell you honestly which ones need replacing and which are fine.
- **Keeping the internet and phone up in an outage** — sizing and setting up a battery backup for your modem, router, fiber box and phone equipment, and doing a real test so you know it works.
- **A battery backup for the computer** — choosing the right size and waveform, connecting the USB cable, and setting up automatic safe shutdown.
- **Checking on your home phone and 911** — figuring out what kind of service you have and whether it will work in an outage, and helping you talk to the provider.
- **Mysterious beeping** — a UPS that won't stop chirping, a Replace Battery light, or a battery swap.
- **Setting up a portable power station** and showing you how to keep it charged and ready.

What I don't do

I don't work inside electrical panels, install whole-home surge protectors, wire transfer switches or add outlets. Those jobs belong to a **licensed electrician**. I'm happy to help you understand what you're being offered and what questions to ask. I also don't give medical advice: for oxygen, CPAP and other medical equipment, your supplier and doctor come first.

What working with me is like

I work at your pace, explain what I'm doing in plain words, and never talk down to anyone. I'll tell you honestly when something isn't worth your money. I've been doing this kind of work for more than 30 years, and I serve Portage County, Ohio, in person, and folks farther away by remote help.

FROM BILL

How to reach me

Call **(330) 200-8042** or book a time at **billshometech.com/book**. My help is **$49 remote · $99 in your home**. This guide is yours to keep for free; if you'd like a hand, I'm only a phone call away.

GOOD TO KNOW

You may meet Sophie first

When you call or visit billshometech.com, you might be greeted by **Sophie**, my AI receptionist. She can answer quick questions and help you book a time. A real person — me — does the actual help.

Thank you for taking the time to protect your home and the people in it. Take it one step at a time, and remember: when in doubt about electricity, it's always smart to ask first.

— Bill

CHAPTER 26

Your Power Protection Cheat-Sheet

Print just this page and keep it near the modem or with your flashlight. The whole guide, boiled down.

The essentials

Topic	Remember
Surge protector or power strip?	A real surge protector lists a **joule rating** and a **UL 1449** voltage rating.
Joules	Higher is better. 2,000+ for the TV and computer.
Voltage protection rating	Lower is better. 330 V is the strongest common rating.
Protected light off	Protection is used up. Replace it.
Never	Plug one strip into another, or a space heater into any strip.
Battery backup (UPS)	Size it by **watts**, with 20–30% to spare. Pure sine wave for newer desktop computers.
UPS battery life	About 3–5 years (lead-acid). Replace on the Replace Battery warning.
Generator	Outside only, 20+ feet from the house. CO alarms on every level.
Old batteries	Never in the trash if lithium. Take to a battery drop-off.

Write it down once

Keep handy	
Electric company & outage number	_____
My electric account number	_____
Internet & phone company number	_____
Will my home phone work in an outage?	_____
Phone-service battery: type & last checked	_____
UPS model & date I bought it / last battery	_____
Medical equipment supplier & phone	_____
Where the corded phone and flashlights are	_____

When the power goes out, in order

1. Stay calm and grab a flashlight — not candles, especially near oxygen.
2. If a computer is on battery and beeping, save your work and shut it down.
3. Check whether it's just you: look outside, and report the outage by phone or text to your electric company.
4. Turn on Low Power Mode or Battery Saver on your phone.
5. If you use medical equipment, follow your plan. If someone's life depends on it, call 911.
6. Running a generator? Outside only, 20+ feet from the house.
7. When power returns, check the Protected lights, medical device settings, and that the Wi-Fi is back.
8. Still stuck? Call Bill at (330) 200-8042.

STAY SAFE

Carbon monoxide alarm sounding?

Get everyone outside to fresh air immediately, then call 911. Don't go back in to turn anything off.