



An Extended Guide · No. 1753

Surge Protection and a Generator

Why it still matters when
you're on backup power

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! Read this first — two kinds of protection, one safety rule

There are two kinds of surge protection in this guide, and they are not the same job. A whole-home surge protector wires into your electrical panel, where the power is always live and a mistake can be deadly — that is strictly a licensed electrician's work, almost always with a permit, and never a do-it-yourself project. (It isn't something I do myself, either; I help you understand it, choose wisely, and line up a trustworthy local pro.) The other kind — the surge-protector strips and plug-in units you use at the wall — are perfectly safe for you to set up on your own. One honest note either way: no surge protector is a lightning rod or an iron-clad guarantee, so in a violent electrical storm, unplugging a treasured device is still the surest protection of all. This guide covers surge protection while you run on a generator — the plug-in protectors you set up yourself and the whole-home unit your electrician installs — while the generator guides handle the safe hookup itself.

Backup power is a blessing — and it still needs surge protection

When the lights go out and your generator hums to life, it's a wonderful feeling. But a lot of folks assume that once they're on backup power, surges are the last thing to worry about. It's actually the other way around.

I'm Bill, and I've spent 30-plus years helping folks in Portage County get comfortable with the technology in their homes. If you own a generator, or you're thinking about one, this guide answers a question I get a lot: do I still need surge protectors when I'm running on the generator? The short answer is yes — maybe even more so.

We'll go through why generator power can be a little rougher on your electronics, why the moment the regular power comes back is its own hazard, and what simple, safe steps keep your gear protected either way. No jargon, no fear — just plain talk at your own pace.

★ This pairs with your generator guides

I'll stay in my lane here and talk only about surge protection. For the generator itself — transfer switches, safe hookup, keeping the exhaust outside — lean on the backup-power guides, and call me at (330) 200-8042 if you'd like a hand sorting it all out.

The whole guide, on one page

If you remember just these few things, you've got the heart of it.

- ❑ Surge protection still matters on a generator — running on backup power does not turn surges off.
- ❑ Generator power can be less steady than the grid, especially from an older unit, and unsteady power is hard on sensitive electronics.
- ❑ The riskiest moment is often when the regular power comes back and the switch-over happens — that can arrive with a jolt.
- ❑ Keep your plug-in surge protectors on the sensitive gear you run during an outage, just as you would any other day.
- ❑ A whole-home protector at the panel guards whatever is fed through your transfer switch or interlock — that's an electrician's job.
- ❑ A surge protector is not a substitute for clean power or a battery backup; for very sensitive or medical gear, add a UPS.

✓ One picture to hold onto

Think of your generator as a hardworking backup singer, not the polished studio recording. It gets you through the show — but a surge protector still smooths the rough edges for your delicate electronics.

Why generator power can be a little rougher

A generator does a remarkable job standing in for the power company. But the electricity it makes isn't always as smooth and steady.

The power from your wall outlet on a normal day is meant to hold a nice, even level — picture a calm, steady stream. A generator, especially an older or budget model, can deliver power that wobbles a bit more: small ups and downs in the voltage as the engine works and the load changes.

Sensitive electronics — televisions, computers, anything with a circuit board — like their power smooth and predictable. Rougher power won't necessarily ruin them on the spot, but it's not the diet they prefer, and over time it's harder on them.

Inverter generators are the smooth ones

Newer inverter generators are built to make cleaner, steadier power that's much friendlier to electronics — closer to what you get from the wall. If you're shopping for a generator and you plan to run sensitive gear on it, that's worth knowing. But even clean power benefits from surge protection, so one doesn't replace the other.

✓ Clean power and surge protection do different jobs

An inverter generator smooths out the everyday roughness; a surge protector stops sudden spikes. They solve different problems, and using both is no contradiction — it's just good sense.

The sneaky moment: when the regular power comes back

Here's the part that catches people off guard. Some of the biggest surge risk around a generator isn't the generator at all — it's the hand-off.

When the utility power returns after an outage, it doesn't always tiptoe back in. It can come back with a jolt. And the switch-over — from generator back to grid power — is exactly the kind of moment when a spike can travel into your home's wiring.

If you run a portable generator with cords, this is a good reason to give the power a few minutes to steady out before you move your sensitive electronics back to the wall. If you have an automatic system that switches for you, the changeover happens on its own — which is one more reason to have protection already in place, since you won't be standing there to manage it.

! The hand-off is a surge moment

Whether power leaves or returns, the switch between grid and generator is a jolt-prone moment. Good surge protection stands guard precisely for these in-between seconds — so you don't have to time anything perfectly.

So yes — keep your protectors in use

Let's make it concrete. When you're running on backup power, your surge protectors should be doing exactly what they always do.

Whatever sensitive electronics you keep running during an outage — the television, a computer, the internet equipment, a medical device — should still be plugged into a proper surge protector, not straight into a bare outlet. The protector's job doesn't change just because the power is coming from the driveway instead of the pole.

It's an easy thing to forget in the scramble of an outage, when you're juggling what to power. So it's worth deciding in advance: which few things do I most want to protect, and is a surge protector already on each of them? A little planning beats a cold, dark scramble every time.

- Keep sensitive electronics on a surge protector during an outage, just as you would on a normal day.
- Don't daisy-chain protectors (one strip plugged into another) — it's a fire risk and it undoes the protection.
- Leave each protector's indicator light where you can see it, so you know it's still doing its job.

★ Let's make your outage kit ahead of time

On a visit I can help you put together a simple outage kit — the right protectors and a short list of what to plug in where — so when the power quits you're calm and ready. Call or text (330) 200-8042.

The whole-home protector and your transfer switch

Plug-in protectors guard the gear you can reach. But what about everything wired into your home — the furnace, the well pump, the things you can't put a strip on?

That's the job of a whole-home surge protector at your electrical panel. Here's the key point for generator owners: if your generator feeds the house through a transfer switch or an interlock — the safe, proper way to connect a backup generator to your panel — then a whole-home protector guards those circuits whether the power is coming from the grid or the generator.

So the same panel unit that catches a big surge from the grid also stands guard over your hardwired gear while you're on backup power, and at that jolt-prone moment when the utility comes back. It's a quiet, always-on layer that doesn't care where the electricity is coming from.

! The panel unit is an electrician's job — always

A whole-home protector wires into your live electrical panel. That is licensed-electrician work, with a permit — never a do-it-yourself project, and not something I do myself. I'll help you understand it and line up a trustworthy local pro. Our whole-home surge protection guide covers it in full.

What a surge protector can't do for you

I'd always rather you know the honest limits up front. A surge protector is a wonderful tool, but it isn't the answer to every power problem.

A surge protector stops **spikes** — those sudden jumps in voltage. What it does not do is fix power that is simply too low or wobbly. If a generator is straining and the voltage sags, or the power dips and browns out, a surge protector won't smooth that over. That's a different problem and a different tool.

For power that's too rough or too low, the fixes are cleaner power at the source — an inverter generator — or a battery backup, called a UPS, between the rough power and your device. A UPS holds a steady output and rides through the dips. For anything very sensitive, that's the combination that gives real peace of mind.

The problem	The right tool
A sudden voltage spike	Surge protector
Rough or wobbly power	Inverter generator
Dips, sags, brownouts	A UPS (battery backup)
A total outage	The generator itself

✓ **Match the tool to the trouble**

Most power headaches fall into one of these buckets. Once you can name which one you're worried about, the right tool is easy to pick — and often you'll want more than one, working together.

Very sensitive and medical gear deserve extra care

Some equipment is too important, or too delicate, to trust to a surge protector alone when you're on backup power.

If someone in your home relies on a medical device, or you have electronics that are especially fussy about clean power, a surge protector is only one layer. The steadier setup is a UPS — a battery backup — which holds a smooth output and bridges the little gaps and dips, together with cleaner power from an inverter generator if you're buying one.

For medical equipment in particular, please don't build your whole plan around a generator and a power strip. Keep the manufacturer's approved backups on hand, ask your device supplier and doctor what they recommend, and look into your utility's medical or priority list. Our medical-equipment guide walks through all of this gently and in full.

! A generator is not a medical backup plan by itself

Backup power can fail or run out of fuel. For life-supporting equipment, a generator is a helpful layer but never the whole answer — always keep the approved battery backups and a plan your supplier and doctor have blessed.

Layered protection works on backup power too

The same layered approach that protects you on a normal day protects you on generator power — it just keeps doing its job.

Layer one: the panel

A whole-home protector at the panel catches big surges before they spread — from the grid, from nearby lightning on the lines, and at that power-restoration jolt. On backup power, it guards whatever your transfer switch feeds.

Layer two: the wall

Plug-in protectors guard your sensitive electronics from what gets through and from the everyday spikes your own appliances make — which don't stop just because you're on a generator.

✓ Neither layer alone is the whole answer

The panel unit can't finely protect a laptop; a plug-in strip can't guard the furnace or stop a huge surge by itself. Together they cover each other's blind spots. Our layered-protection guide lays out the whole idea.

Two kinds of homes, two sets of needs

Whether you lean on a generator often or just now and then shapes how much this matters — and country homes tend to lean on one hardest.

If you live in town or the suburbs

In town and the suburbs, outages are often shorter — crews reach you quickly, and the water keeps flowing from the city main. Many folks here run a modest portable generator for the fridge and a few essentials, and only now and then.

- Shorter, less frequent generator runs mean less time on rougher power — but the power-restoration jolt is still very real.
- Keep plug-in protectors on the TV, computer, and internet gear you run during an outage.
- If you run sensitive electronics on the generator at all, an inverter unit or a small UPS is worth considering.
- A whole-home protector at the panel is still a fine, affordable upgrade, generator or not.

If you are out in the country on a well

Out in the country, outages come more often and last longer, so a generator isn't a novelty — it's how the well keeps pumping and the furnace keeps running. That means more hours on backup power, and more hand-offs when the grid finally returns.

- More time on generator power means more exposure to rougher output — an inverter generator is well worth a look for sensitive gear.
- A 240-volt well pump and other hardwired equipment can be fed through a transfer switch — and guarded by a whole-home protector at the panel.
- Long overhead lines already invite more nearby-lightning surges, so layered protection earns its keep out here.
- For a medical device on frequent backup power, pair a UPS with your approved backups — don't rely on the generator alone.

★ Not sure which picture fits you?

Tell me how often your power quits and what you run when it does, and I'll help you sort out what's worth protecting — no pressure, no sales pitch. Call (330) 200-8042.

A calm routine for outage day

When the power quits, a little routine keeps you safe and keeps your electronics protected. Here's a simple one.

- ❑ Before you start the generator, follow your generator guide's safe-hookup steps — that part comes first, always.
- ❑ Run your sensitive electronics through their surge protectors, just as on a normal day.
- ❑ Glance at each protector's indicator light to be sure it's still protecting, not just passing power.
- ❑ When the utility power returns, give it a few minutes to steady before moving sensitive gear back to the wall.
- ❑ After the storm passes, check your protectors' lights again — a big surge can use one up in an instant.

✓ Keep the list on the fridge

Write your own short outage routine on a card and stick it where you'll see it. When the lights go out, you won't have to think — you'll just follow your own steps, one at a time.

After the storm: a quick once-over

Once the weather's passed and you're back on regular power, a few minutes of checking can catch trouble early.

- Glance at every surge protector's indicator light — if a 'protected' light is out while the strip still has power, its protection is used up, so replace it.
- Have your electrician (or you, if it's visible) check the whole-home unit's indicator after big storms.
- Look for any device that won't turn on, acts strange, or — most important — smells burnt.
- Reset any tripped breakers and any ground-fault (GFCI) outlets that need it.
- A blinking clock on the microwave or oven is a hint the power dipped or blipped.

! A burnt smell means stop

If you ever smell burning or something electrical from an outlet, a protector, or a device, unplug it if you can do so safely, don't use it, and call a licensed electrician. That is not a wait-and-see moment.

A few myths, cleared up

Generators come with their own tall tales about surges. Here are the ones I hear most, set straight.

- **'On a generator, I don't need surge protectors.'** Backwards — generator power can be rougher, so protection matters just as much.
- **'My generator protects my electronics.'** No — a generator makes power; it doesn't stop spikes. That's the surge protector's job.
- **'A surge protector will smooth out my generator's power.'** No — it stops spikes, not sags or wobble. Cleaner power or a UPS does that.
- **'An inverter generator means I can skip protection.'** Cleaner power is great, but a spike is a spike — keep the surge protectors.
- **'The danger's over once I'm on backup.'** The switch back to grid power is one of the jolt-prone moments — protection stays useful.

✓ When in doubt, keep it simple

If a claim makes surge protection sound unnecessary, be skeptical. The humble protector is cheap insurance that keeps working no matter where your power is coming from.

Common mistakes worth sidestepping

Knowing the usual slip-ups ahead of time makes them easy to avoid.

- **Skipping the surge protector** in the outage scramble and plugging a TV or computer in bare.
- **Trusting a plain power strip** to protect electronics — it only adds outlets, on the grid or on a generator.
- **Forgetting the data lines.** Surges ride in on cable and phone lines too; protect those on your TV and modem.
- **Rushing sensitive gear back to the wall** the instant the power returns, before it has steadied.
- **Leaning on the generator alone** for a medical device, with no UPS and no approved backups.

! The generator hookup itself is the big safety item

Everything here is about surge protection. The truly dangerous mistakes — backfeeding the lines, running a generator indoors — belong to safe hookup, and the generator guides cover them. Please read those first.

Which protectors for your outage gear?

You don't need anything exotic for backup-power days — just a real surge protector, matched to what you're protecting.

For the sensitive electronics you run during an outage — a television, a computer, the internet equipment — a good-quality surge protector with a visible indicator light is the everyday choice. If it also has jacks for the cable or phone line, use them, since surges travel those lines too.

For the fussiest or most important gear, step up to a UPS with built-in surge protection. It gives you the steady output and the bridge through dips that a plain protector can't. Our guide on choosing a protector walks through what to look for, and the UPS guide explains when a battery backup is the better pick.

★ I'll help you match gear to need

There's no need to overspend or guess. Tell me what you run when the power's out, and I'll help you pick the right protector or UPS for each thing — I sell nothing, so it's honest advice. Call (330) 200-8042.

What to protect when you're running on backup

You won't power the whole house on a generator, so protection follows the gear you actually keep running. Here's a gentle way to think about it.

Start with the essentials most folks run during an outage: the refrigerator, a few lights, the furnace fan, and the internet or a phone charger. Then add the comforts — a television, maybe a computer. The sensitive ones in that list, the electronics with circuit boards, are the ones that want a surge protector.

Big motorized or heating things — the fridge, the furnace, a well pump — both make surges and can be harmed by them, and many are hardwired, so they're really the whole-home protector's department, not a plug-in strip's. That split is the same as any other day; the generator doesn't change it.

What you're running	How to protect it
TV, computer, modem	Plug-in protector or UPS
Furnace, well pump	Whole-home unit at panel
A medical device	UPS plus approved backups
A lamp, a fan	Little needed

✓ Sensitive gear first

If you can only protect a few things, start with the electronics that have a brain inside — the TV, the computer, the network box. Those are the ones a rough moment is most likely to hurt.

How I can help

Getting your surge protection squared away for backup-power days is exactly the kind of practical thing I love to take off your plate.

I can walk your home with you, see what you run during an outage, and set up the right plug-in protectors and cords neatly, with nothing left as a trip hazard. I'll show you each indicator light and what it means, so you'll know at a glance if one ever needs replacing. If a UPS makes sense for a computer or a medical device, I'll help you choose and set one up.

For the whole-home protector at the panel — and for anything to do with wiring the generator into your home through a transfer switch — I don't do the electrical work myself. That's a licensed electrician's job. But I'll help you understand it, decide what's right, and line up a trustworthy local pro so you're never sorting it out alone.

★ Real help, close to home

A first in-home visit is a flat \$99, and for the simple things I can often help over the phone or a screen-share for \$49. Every visit comes with a 30-day, come-back-free guarantee. Call or text (330) 200-8042.

If you're shopping for a generator

Thinking about buying a generator, or replacing an old one? A couple of surge-and-power pointers can save you grief later.

- If you plan to run sensitive electronics, look hard at an inverter generator — its cleaner, steadier power is much friendlier to circuit boards.
- Decide early how it will connect to your home. A transfer switch or interlock, installed by an electrician, is the safe way — and it lets a whole-home protector guard those circuits.
- Plan your surge protection at the same time, not as an afterthought — the plug-in protectors for your gear and, if you want it, the panel unit.
- For a medical device, talk to the supplier about what generator and backup setup they recommend before you buy.

★ Happy to be a sounding board

I don't sell generators and earn no commission, so I've got no dog in the fight — just honest thoughts. Run your shortlist by me and I'll tell you what I'd think about. Call or text (330) 200-8042.

Whatever you choose, remember the safe-hookup details — and the all-important rule of never running a generator indoors — live in the generator guides. Read those before your first real outage, not during one.

The two moments that matter most

If all of this boils down to anything, it's two little windows of time worth guarding well.

When the power leaves

As the grid drops and you switch to the generator, and while you're running on backup, your sensitive electronics are on power that may be a touch rougher than usual. Keeping them on surge protectors — and the fussiest ones on a UPS — carries them through smoothly.

When the power comes back

The hand-off back to the grid can arrive with a jolt. This is where a whole-home protector quietly earns its keep, and where giving the power a few minutes to steady before reconnecting sensitive gear pays off.

✓ Protection covers the in-between

You can't always be standing at the panel at the exact right second. That's the beauty of having protection already in place — it minds those in-between moments so you don't have to.

Where to begin, without overthinking it

You don't have to do everything at once. Here's a calm order that fits most homes with a generator.

First, make sure the sensitive electronics you run during an outage are each on a real surge protector — that's the easy, do-it-yourself part, and it covers a lot.

Next, add a UPS on the one or two things that most deserve steady power and a bridge through dips — a desktop computer, the internet gear, or a medical device. **Then**, when you're ready, ask a licensed electrician about a whole-home protector at the panel, so your hardwired gear and that power-restoration jolt are covered too.

★ A plan that fits your budget

There's no need to spend it all at once. Tell me your home and what you run when the power's out, and I'll help you put things in a sensible order, starting with the cheap, easy wins. Call or text (330) 200-8042.

Common Questions

The questions I hear most from folks with a generator, answered plainly.

Q: Do I really need surge protectors if I have a generator?

Yes. A generator makes power; it doesn't stop spikes. In fact its power can be a bit rougher than the grid's, and the switch back to utility power can bring a jolt — so protection matters just as much on backup.

Q: Will a surge protector fix my generator's rough or wobbly power?

No — that's a different job. A surge protector stops sudden spikes, not sags, dips, or wobble. For steadier power you want an inverter generator or a UPS (battery backup) between the power and your device.

Q: Does my whole-home protector work while I'm on the generator?

If your generator feeds the house through a transfer switch or interlock, then yes — the panel unit guards those circuits whether the power comes from the grid or the generator. Your electrician can confirm your setup.

Q: What about a medical device on backup power?

Treat the generator as one helpful layer, never the whole plan. Pair a UPS with the manufacturer's approved backups, and check with your supplier, your doctor, and your utility's medical list. Our medical-equipment guide covers it gently.

★ Still have a question?

That's what I'm here for. Call or text me at (330) 200-8042 and ask away — there's truly no such thing as a silly question about this.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made surge protection on generator power feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

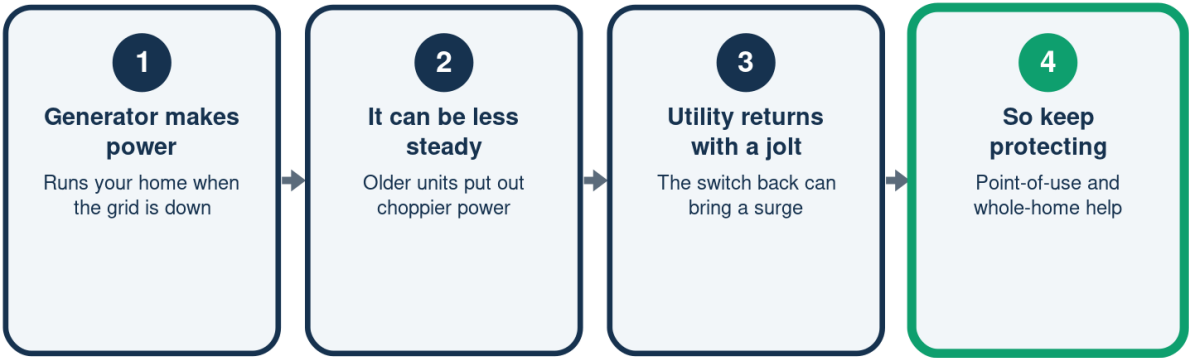
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★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

Why It Still Matters on Backup

Surge protection keeps working when you're on a generator



Backup power does not turn surges off -- keep your protectors in use.

Match the Concern to the Tool

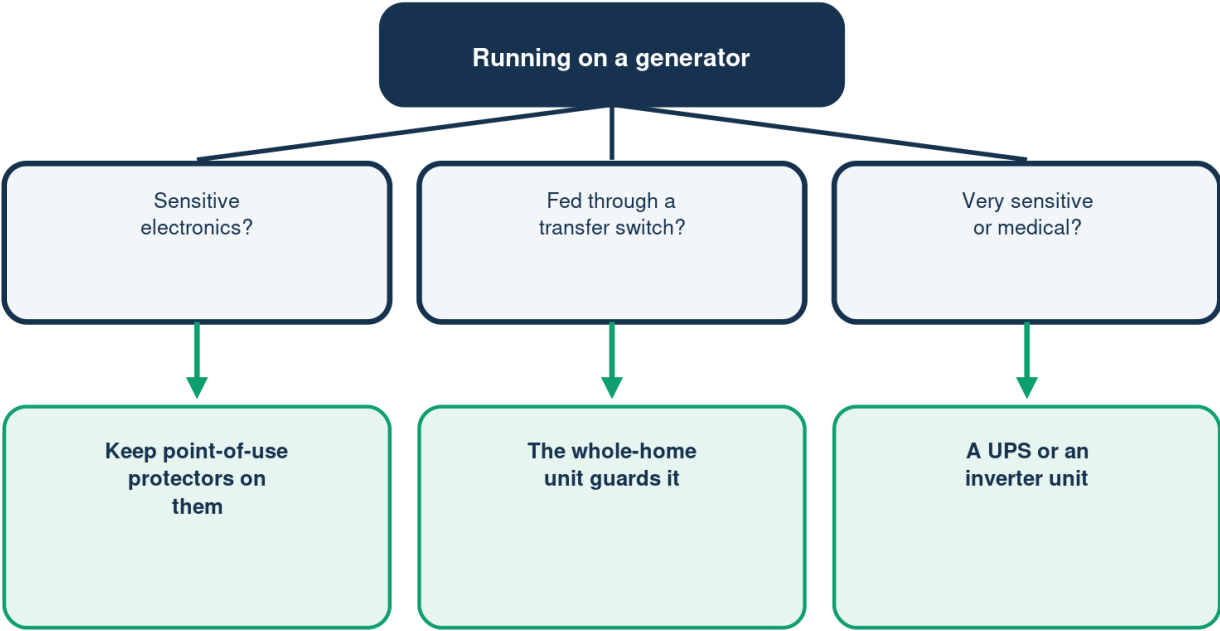
Each power worry has a tool that handles it

What helps	
Unsteady power	Inverter or UPS
Spikes	Surge protector
Return jolt	Whole-home
Sensitive gear	A UPS

A surge protector stops spikes -- not sags, dips, or outages.

Running on a Generator?

Let what you're protecting point the way



For a medical device, add approved backups -- never rely on the generator alone.

Illustration - a schematic, not to scale. Your setup may differ.

Three Tools, Three Jobs

What each one is really for

	What it does
Surge protector	Stops spikes
UPS	Rides out dips
Inverter gen	Cleaner power

They solve different problems -- often you'll want more than one.



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A Note From Bill

A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

— *Bill*



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