



An Extended Guide · No. 1749

Protecting Kitchen and Laundry Appliances

The big, hardworking machines
full of circuit boards

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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 is about the big, hardworking machines in your kitchen and laundry room — and the short version is that most of them are best guarded by a whole-home protector at the panel, while only your small countertop electronics call for the plug-in kind you set up yourself.

The big machines full of little circuit boards

Your kitchen and laundry room are packed with the most expensive, hardest-working appliances in the house — and today nearly all of them have a delicate computer brain inside. Let's talk about keeping them safe, in plain English.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. In 30-plus years of helping folks with the technology in their homes, I've watched ordinary appliances quietly fill up with circuit boards — the range, the dishwasher, the washer and dryer all have them now. That's wonderful when they work and pricey when a surge takes one out.

Here's the twist that makes the kitchen special: these big machines don't just suffer from surges, they help cause them. Once you see that, protecting them stops feeling like storm insurance and starts feeling like everyday common sense.

★ There's no silly question here

If any of this feels over your head, it isn't — it's just new. Call or text me at (330) 200-8042 and I'll explain it as many times as it takes, free and with nothing to sell you.

The whole guide, on one page

If you remember only these few things, you already understand kitchen and laundry protection better than most folks.

- ❑ Big appliances do two things: they cause small surges when they cycle on and off, and their control boards can be ruined by a surge.
- ❑ Most of them — the fridge, range, dishwasher, washer, and dryer — are hardwired or on their own dedicated line, so a plug-in strip can't guard them.
- ❑ The practical way to protect the big machines is a whole-home protector at the panel — a licensed electrician's job, never a DIY project.
- ❑ Countertop electronics that plug into ordinary outlets — a microwave, a coffee maker with a display — can use a plug-in protector you set up yourself.
- ❑ Never put a light-duty surge strip on a high-wattage heat-maker like a space heater or toaster oven — that's a real fire risk.
- ❑ Heat-making appliances belong in their own proper wall outlet, plain and simple.

✓ One idea to hold onto

Sort every appliance into one of three piles: big or wired-in goes to the panel, small electronics plug into a protector, and heat-makers get their own outlet. That's the whole guide in a sentence.

A two-way street: cause and victim

The big appliances are unusual because they sit on both sides of the surge story at once.

Anything with a strong motor or a heavy heating element gives a little electrical 'kick' every time it switches on and off. The refrigerator's compressor, the dishwasher's heater, the dryer's motor — each one sends a small spike back down your home's wiring as it cycles, all day and all night.

At the very same time, those machines are now run by sensitive circuit boards — the ones that manage the cycles, the sensors, and the digital displays. A big enough surge can fry that board and leave a perfectly good appliance dead, even though the motor and drum are fine.

✓ Why that matters for you

Because these machines both make surges and can be hurt by them, guarding them pays off twice — it protects the appliance itself and calms the spikes it sends to everything else in the house.

Meet the big machines

Not every appliance is equally at risk. Here's the hard-working crew that's worth thinking about.

The ones to watch are the big motorized and heating appliances that now carry circuit boards. A plain old kettle or a basic lamp shrugs off a small surge; it's the modern, electronic machines that need looking after.

The machine	Why it's at risk
Refrigerator	Motor cycles; runs on a board
Range and oven	Big, wired in, digital controls
Dishwasher	Water, heat, and a circuit board
Washer and dryer	Strong motors, sensitive boards
Microwave	Electronics and a clock display

✓ **A modern kitchen has more to lose**

A kitchen from decades ago had a few motors and some heating coils. Yours is full of circuit boards, from the range to the dishwasher. That's why surge protection matters more today, not less.

Why so many of these need the panel

Here's the part that surprises folks: the biggest kitchen and laundry machines usually can't be guarded by a plug-in strip at all.

Many of these machines are wired straight into your home — we call that **hardwired**, meaning there's no plug, like a built-in oven or a hardwired dishwasher. Others sit on a **dedicated circuit**, their own private line running back to the panel, like the refrigerator or the washer. And an electric dryer or range runs on a big **240-volt** outlet — double the usual household power.

Because you can't simply slip a surge strip in front of them, the practical way to protect the whole hard-working crew at once is a **whole-home surge protector** at your electrical panel. It guards everything wired in — the fridge, the range, the dishwasher, the washer, and the dryer — in a single stroke.

! That part is an electrician's job

A whole-home protector installs inside your live electrical panel, so it is strictly a licensed electrician's work, almost always with a permit — never a do-it-yourself project, and not something I do myself either. Our whole-home surge protection guide walks through exactly how it goes; here I'll just point you to it.

The countertop crowd — where you can help yourself

Not everything in the kitchen needs an electrician. Your small countertop electronics are the easy, do-it-yourself part.

A countertop microwave that plugs into an ordinary wall outlet, a coffee maker with a digital clock, a bread machine, a stand mixer with electronic controls — these plug into normal outlets, and a good plug-in surge protector guards them just fine. This is **point-of-use** protection, and it is perfectly safe for you to set up yourself.

The rule of thumb is simple: if it plugs into a regular outlet and has a little brain — a clock, a display, a circuit board — a plug-in protector suits it. There's one big exception, though, and it's important enough to get its own page next.

✓ Do it the right way

Plug the protector straight into a grounded wall outlet, and never chain one strip into another. Our guide on choosing a protector and the layered-protection guide go deeper if you'd like them.

The one warning to take to heart

If you remember a single safety rule from this guide, please make it this one.

Anything that makes heat pulls a large amount of electrical power — a toaster oven, an electric skillet, an air fryer, and above all a space heater. A slim, light-duty surge strip simply isn't built to carry that kind of load.

Push a high-wattage heat-maker through a light-duty strip — or worse, through a strip that's plugged into another strip — and the strip can overheat, melt, and start a fire. It happens somewhere every winter, and it is entirely avoidable.

! Give heat-makers their own outlet

A space heater, toaster oven, electric skillet, or air fryer belongs plugged straight into its own proper wall outlet — never a light-duty surge strip, never a daisy-chained cord, never a thin extension cord. If you want the whole kitchen guarded from surges, that's the whole-home unit's job, not a strip on the heater.

A slow walk around the kitchen

Let's stroll through a typical kitchen and drop each thing into the right pile.

- **Refrigerator:** a hard-working motor and a control board, usually on its own outlet — guard it with the whole-home unit, not a strip.
- **Range and oven:** big and wired in, often with digital controls. That's the panel's department.
- **Dishwasher:** water, heat, and a circuit board, frequently hardwired — whole-home protection.
- **Built-in microwave over the range:** wired in, so it's covered by the whole-home unit.
- **Countertop microwave, coffee maker, mixer:** plug into normal outlets, so a plug-in protector is yours to add.
- **Toaster oven, air fryer, kettle:** heat-makers — their own outlet, never a light strip.

✓ You don't have to memorize this

The pattern is easy: big or wired-in goes to the panel, small electronics plug into a protector, and heat-makers get their own outlet. That's the whole kitchen in three short rules.

Down in the laundry room

The laundry pair deserves its own moment, because both machines are surge stories rolled into one.

A washer and a dryer both have strong motors that kick on and off, and both now carry sensitive circuit boards that run the cycles, read the sensors, and light the digital displays. When those motors cycle they send little surges back down the wiring — and those same boards are exactly what a bigger surge can ruin.

An electric dryer runs on a big 240-volt outlet, and a washer usually sits on its own dedicated line. Just like the big kitchen machines, the sensible way to protect them is a whole-home protector at the panel, not a plug-in strip you'd try to squeeze in behind the machine.

✓ A tidy bonus while you're back there

When you're thinking about the laundry room, glance at the dryer vent and the machines' own cords for wear — a five-minute look that heads off other trouble. For the surge side, though, it's the panel unit that does the real work here.

Two kinds of homes, two sets of needs

The same fridge and dryer are worth protecting anywhere, but where you live shapes how you go about it — a farmhouse on a well sees a different picture than a tidy lot in town.

If you live in town or the suburbs

In town and the suburbs, your service lines are often shorter and sometimes buried, which gives lightning fewer places to jump aboard. Your water keeps flowing from the city main during an outage, so the appliances you're guarding are mostly comforts and conveniences — but they're still full of expensive circuit boards.

- Your big appliances still cause and suffer the everyday surges, storm or no storm.
- A whole-home protector guards the fridge, range, washer, and dryer all at once.
- Plug-in protectors handle the countertop electronics with clocks and displays.
- Shorter, sometimes-buried lines help, but grid-switching surges still reach everyone.

If you are out in the country on a well

Out in the country, long overhead power lines run for miles across open land, giving nearby lightning far more chances to jump on and reach your appliances. Outages last longer, too, which puts a full freezer and fridge at real risk when the power is out.

- Long overhead lines mean more lightning exposure reaching your hard-wired machines.
- Your kitchen and laundry share a panel with a 240-volt well pump — a whole-home unit covers the whole lot together.
- Longer outages threaten a full freezer, so plan backup power too (see the generator and backup-power guides).
- Ask the electrician about a whole-home unit as the practical way to guard all the hardwired appliances.

★ Not sure what your kitchen needs?

Tell me what you've got — the age of the appliances, how your power behaves in a storm — and I'll help you sort the do-it-yourself wins from the electrician's list. No pressure, no sales pitch. Call (330) 200-8042.

Your kitchen is a little surge factory

Here's a fact that reframes the whole subject: a good share of the surges your home sees are born right here in the kitchen and laundry room.

Every time the refrigerator's compressor kicks on, the dishwasher's heater fires, or the dryer's motor starts, it sends a small electrical spike back into your home's wiring. No single one is dramatic, but they happen around the clock, and over months and years they quietly wear on the electronics all over the house.

That's why surge protection earns its keep even when there's not a cloud in the sky — and it's a big reason a whole-home protector, which sits at the panel where all those little spikes pass through, is such a sensible buy. Our guide on the surges that start inside your own home tells the fuller story.

✓ Storm insurance and everyday sense

Folks think of surge protection as something for thunderstorms. In a kitchen, it's just as much about the everyday spikes your own appliances make — protection that pays off every single day.

Setting up plug-in protectors the right way

For the countertop electronics you can protect yourself, a few simple habits make all the difference.

- ❑ Plug the surge protector straight into a properly grounded three-prong wall outlet.
- ❑ Never plug one strip into another — that daisy-chaining is a fire risk and undoes the protection.
- ❑ Keep the protector where you can see its indicator light, so you'll know if it ever needs replacing.
- ❑ Don't run a high-wattage heat-maker through it — those get their own outlet, always.
- ❑ Leave a little slack in the cords so nothing becomes a trip hazard on a busy counter.

✓ If the light goes out, replace it

A surge protector wears out, but its outlets keep working — so folks trust dead protection for years. If the 'protected' light ever goes dark while the strip still has power, swap it. Our guide on when protectors wear out explains the signs.

Picking a protector for the counter

You don't need to overthink this, but a few words on the box tell you what you're really getting.

- **Look for 'surge protector,'** not just 'power strip' — a plain strip only adds outlets and guards nothing.
- **A joule rating** is a rough measure of how much surge energy it can soak up over its life; a higher number generally lasts longer.
- **An indicator light** — ideally both 'protected' and 'grounded' — so you can tell at a glance it's still working.
- **A UL-listed safety mark**, the recognized independent safety testing (UL 1449 is the standard for surge devices).
- **Enough well-spaced outlets** for chunky plugs, plus a warranty for a little extra peace of mind.

★ Match the protector to the job

A coffee maker needs very little; a countertop computer or a nice smart display deserves a better protector. Our guide on choosing a surge protector goes through this in friendly detail — or I'm glad to pick one out with you. Call (330) 200-8042.

After a storm or a surge — checking the kitchen

If you suspect a surge came through, a two-minute check of the kitchen tells you a lot.

- A blinking clock on the microwave, oven, or coffee maker is a hint the power dipped or blipped.
- An appliance that won't start, throws an error, or acts strangely right after a storm may have taken a hit.
- Check any plug-in protector's light — if 'protected' is out while the strip still powers on, replace it.
- Reset any tripped breaker or ground-fault (GFCI) outlet near the sink or counter.

! A burnt smell means stop

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

Easy habits that stretch your protection

None of these cost a thing, and together they keep your kitchen and laundry room well guarded.

- ❑ Before a big storm, unplug the countertop electronics you'd hate to lose.
- ❑ After a long outage, give the power a few minutes to steady before plugging sensitive gear back in.
- ❑ Glance at your protectors' indicator lights now and then, especially after storm season.
- ❑ Keep heat-making appliances on their own outlets, and never daisy-chain strips.
- ❑ Ask an electrician about a whole-home unit to cover the big machines all at once.

✓ Tie it to something you already do

Check the protector lights when you change the smoke-alarm batteries, or at the start of storm season. Pin it to a habit you've already got and you'll never have to remember it on its own.

Common mistakes people make

Steer around these and you're already ahead of most homes.

- **Trusting a plain power strip** to protect a countertop computer or smart display — it adds outlets, nothing more.
- **Running a space heater or toaster oven through a light strip** — a real fire risk; give heat-makers their own outlet.
- **Forgetting the big machines.** The fridge, range, and laundry pair are hardwired or on dedicated lines — that's the panel unit's job.
- **Daisy-chaining strips**, or forcing a three-prong protector into an old two-prong outlet with a 'cheater' adapter.
- **Using a protector until it dies** and never checking the light, so the protection is long gone while the outlets still work.

! The grounding trap

A surge protector needs a real ground connection to do its job. Never use a 3-to-2-prong adapter to force one into an ungrounded outlet — it defeats the protection. Adding a grounded outlet is an electrician's job; our grounding guide explains it simply.

A few myths, cleared up

The kitchen collects some tall tales. Here are the ones I hear most, set straight.

Q: 'A power strip protects my appliances.'

No — a plain strip only splits one outlet into several. You need a real surge protector, and for the big hardwired machines you need a whole-home unit at the panel.

Q: 'Only lightning hurts appliances.'

Not so. Your own fridge, dishwasher, and dryer make small surges every day that wear on electronics all year long, storm or no storm.

Q: 'A surge strip is fine for my space heater.'

Please, no. Heat-makers draw too much power for a light-duty strip and can start a fire. They belong plugged straight into their own wall outlet.

Q: 'Newer appliances don't need protection.'

Backwards, really. Newer machines are full of sensitive circuit boards, so they need protection more, not less.

✓ When in doubt, ask

If a myth here surprised you, good — that's the point. Call me and I'll set any of them straight, free, with nothing to sell you.

A simple plan, in sensible order

You don't have to do it all at once. Here's a calm order that fits most homes.

First, make the counter safe. Get every heat-making appliance onto its own proper outlet and off any light-duty strip, then put good plug-in protectors on the countertop electronics you'd hate to lose. That's the do-it-yourself part, and you can finish it this week.

Then, when you're ready, ask a licensed electrician about a whole-home protector at the panel to guard the fridge, range, dishwasher, and laundry pair all at once. There's no rush — even one layer beats none, and the two together are strong.

★ A plan that fits your budget

Tell me about your kitchen and what worries you, and I'll help you put things in a sensible order — starting with the free and cheap wins. Call or text (330) 200-8042.

Kitchen and laundry, at a glance

Here's the whole room on one page, sorted by what each thing actually needs.

Appliance	Causes surges?	Best protection
Refrigerator	Yes	Whole-home unit
Range and oven	A little	Whole-home unit
Dishwasher	Yes	Whole-home unit
Washer and dryer	Yes	Whole-home unit
Countertop electronics	A little	Plug-in protector
Heat-makers	A little	Own outlet, no strip

✓ **Notice the pattern**

Big or wired-in leans on the panel; small electronics plug into a protector; heat-makers get their own outlet. Three simple rules cover the whole room.

How I can help

This is exactly the kind of everyday, practical thing I love to take off your plate.

I can walk your kitchen and laundry room with you, sort every appliance into the right pile, and set up the plug-in protectors on your countertop electronics right there — with the cords tidied so nothing's a trip hazard. I'll also make sure no heat-maker is sitting on a light-duty strip, which is a quiet fire risk I catch in a lot of homes.

For the whole-home protector that guards the big machines, I don't do the panel work myself — that's a licensed electrician's job. But I'll help you understand it, decide if it's right for you, 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 right over a screen-share for \$49. Every visit comes with a 30-day, come-back-free guarantee. Call or text (330) 200-8042.

Common Questions

The questions I hear most about kitchen and laundry appliances, answered plainly.

Q: Can I just put my refrigerator on a surge strip?

Better not. A fridge draws a big gulp of power when its motor starts and is meant to plug straight into its own outlet. The practical way to protect it is a whole-home unit at the panel, not a light-duty strip.

Q: Which kitchen things can I protect myself?

The countertop electronics that plug into ordinary outlets — a countertop microwave, a coffee maker with a display, a mixer with electronic controls. A plug-in protector on those is a safe, do-it-yourself job.

Q: Is it really dangerous to put a space heater on a power strip?

Yes. Heat-making appliances pull a lot of power and can overheat a light-duty strip until it melts or catches fire. Give them their own wall outlet, every time.

Q: My dryer and range use those big outlets — how do I protect them?

Those run on 240 volts and are the panel's job. A whole-home surge protector guards them along with everything else wired in. Our whole-home guide walks through getting one safely.

Q: Do these appliances really cause surges too?

They do. Motors and heating elements send small spikes back down the wiring every time they cycle — a big reason surge protection pays off all year. The guide on surges from inside your home has the full picture.

★ 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 any of 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 protecting your kitchen and laundry appliances 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.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't do the licensed electrical work myself — for that I'll help you line up a trustworthy local pro.

★ 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

Which Protection Fits Which Appliance

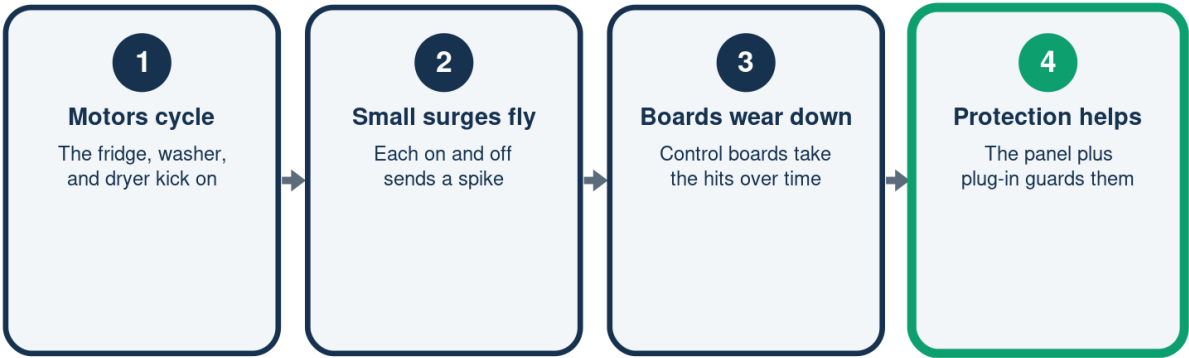
Big machines to the panel; small electronics plug in

	Best route
Refrigerator	Whole-home
Range / oven	Whole-home
Washer / dryer	Whole-home
Microwave	Point-of-use
Coffee maker	Point-of-use

Big or hardwired leans on the panel; small electronics plug in.

Why the Kitchen Matters

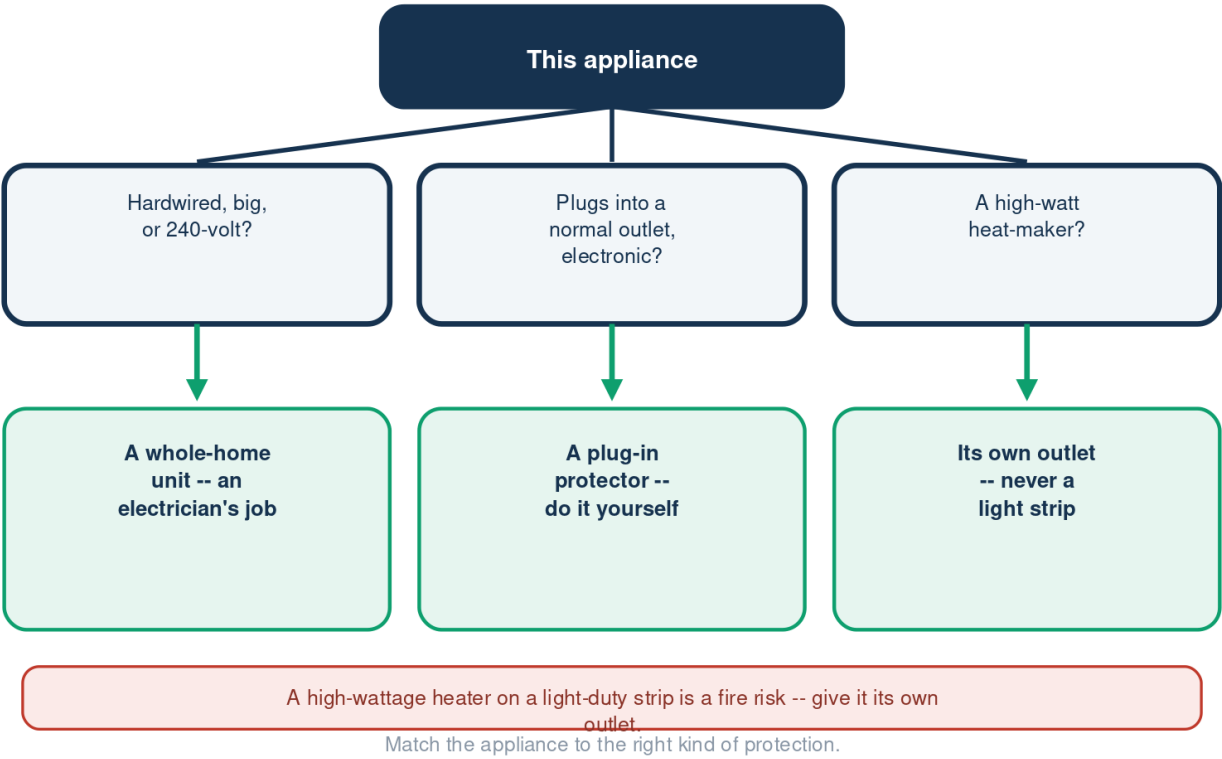
The big machines both make surges and suffer them



Guarding the kitchen protects both the makers and the victims.

Which Route for This Appliance?

Three questions point the way



Cause and Effect in the Kitchen

Most big appliances do both

	Causes surges?	Can be harmed?
Refrigerator	Yes	Yes
Dryer	Yes	Yes
Microwave	Yes	Yes
Toaster	A little	Rarely

The big motorized and digital machines both cause and suffer surges.



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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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