BILL'S HOME TECH

Home & Small Business Tech Solutions

An Extended Guide · No. 1245

Watts Explained

Running watts, starting watts, and reading the label

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Hello, and welcome

If you've ever turned a generator box over in your hands, squinted at all the watts and volts and 'peak this' and 'rated that,' and wished someone would just tell you what the words mean — this little guide is for you, and it's all in plain English.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. I've spent more than 30 years helping folks get comfortable with their technology — patiently, in plain language, and at their own pace. Think of this guide as me sitting at your kitchen table, walking through it with you one step at a time.

This is the vocabulary guide. We'll take the handful of words you see on a generator's label — watts, volts, amps, running versus starting watts, kilowatts, watt-hours, and 'clean power' — and make each one friendly, using a simple picture of water in a pipe. We'll keep the number-crunching light (a separate guide handles the actual sizing) and focus on what the words mean, whether you're in town or out in the country on a well.

You do not have to read this all at once, and you certainly don't have to memorize it. Skip to whatever you need, keep it handy, and know that a real person is only a phone call away.

> **★ How to use this guide**
> Each page stands on its own. Read one, take what's useful, and come back for the next when you're ready. If a step ever feels fuzzy, that's on my writing — not on you — and you can always call me at (330) 200-8042.

A plain-English dictionary of power words

This little guide is a dictionary, not a how-to. Its whole job is to explain the words you'll see on a generator's box, so none of them can trip you up.

When folks get nervous buying a generator, it's usually not the machine that scares them — it's the label. Watts, volts, amps, "peak," "rated," kilowatts, a mysterious little percentage for something called "clean power." It reads like a foreign language, and nobody wants to spend real money on something they don't quite understand.

So let's take the mystery out of it. There are really only a few words that matter, and once you've met them they're friendly enough. We'll go one at a time, in plain English, with a simple picture of water in a pipe to hold them all together. No test at the end, and no shame in reading a page twice.

One thing this guide is **not**: it's not the sizing guide. Figuring out exactly what size generator your home needs — making your must-run list and adding up the watts — is its own separate guide in this series, and a good one. Here we're just learning what the words mean, so that when you do size a unit or read a box, the numbers make sense instead of swimming in front of you.

> **✔ Read it like a dictionary**
> You don't have to read these pages in order or all at once. Meet a word, let it settle, and come back for the next when you're ready. Keep the little glossary near the back handy when you go shopping.

One picture to hold onto: water in a pipe

Before any of the words, here's a simple picture that makes every one of them click — electricity behaves a lot like water moving through a pipe.

Imagine a garden hose. Three things describe what's going on: how hard the water is being pushed, how much water is actually flowing, and how much real work that water can do at the end — turning a little waterwheel, say. Electricity has the very same three, and each one has a name.

- **Volts are the pressure** — how hard the electricity is being pushed through the wire, like the water pressure behind the hose.
- **Amps are the flow** — how much electricity is actually moving, like the gallons a minute coming out of the hose.
- **Watts are the work getting done** — the pressure and the flow together, the real muscle at the end that spins the wheel or runs your refrigerator.

That's the whole model, and it's worth memorizing because it never lets you down. Push (volts) and flow (amps) together make the work (watts). A gentle push with a lot of flow, or a hard push with a little flow, can do the same amount of work — the same watts — just as a wide, lazy river and a narrow, fast one can both turn a mill.

Every other word in this guide hangs off that picture. Kilowatts are just a big pile of watts. Watt-hours are watts counted up over time, like the total gallons that flowed. Keep the hose in mind and none of it will feel like arithmetic.

> **✔ The one sentence to remember**
> Volts push, amps flow, watts work. If you remember nothing else from this guide, that little sentence will carry you through almost any label or conversation about power.

Watts: the work getting done

Watts are the star of the show — the number you'll see most, and the one that matters most when you're choosing a generator.

A **watt** measures how much electrical work is happening right now. The more watts, the bigger the job. A dim little night light draws just a few watts; a bright lamp, more; a refrigerator, a good deal more; a space heater, a whole lot. It's the same idea whether you're talking about a device using power or a generator making it.

That's why generators are advertised in watts. The number tells you how much work the machine can do at one time — how many of your things, added together, it can keep running. A unit rated for more watts can carry a heavier load; a smaller one carries less. Simple as that.

Here's the useful part: the watts a device uses and the watts a generator makes are measured on the very same scale. So sizing a generator is really just making sure the watts it can make are a comfortable bit more than the watts your things will use. (The doing of that — the adding up — is the sizing guide's job; here we just want the word to feel familiar.)

One gentle caution we'll come back to: a generator actually lists **two** watt numbers, a steady one and a brief bigger one. We'll sort those out a few pages along. For now, hold onto the main idea — watts are the work getting done, and more watts means a bigger job handled.

> **✔ Watts, not horsepower**
> You may see a generator's engine described in horsepower too. That's about the engine, not the electricity you get out. For choosing and sizing, watts are the number to watch — that's the power that reaches your outlets.

Volts: the push behind the power

Volts are the pressure in our water picture — how hard the electricity is being pushed. In a house, volts come in two flavors, and knowing them saves real headaches.

Most of the outlets around your home — the ones you plug a lamp, a TV, or a phone charger into — are **120 volts**. That's the standard, everyday push, and it's plenty for the great majority of things you own. Small, quiet inverter generators put out 120 volts, and for most in-town backup that's exactly what you need.

But a few big, hungry appliances need a stronger push — **240 volts** — and they get it from special larger outlets. An electric clothes dryer, an electric kitchen range, central air conditioning, and — the big one around here — most well pumps all run on 240 volts. You can spot their outlets: they're bigger, with a different shape than a normal wall plug.

Why does the difference matter so much? Because a generator that only makes 120 volts cannot run a 240-volt appliance at all — not slowly, not partly, not with an adapter. It's simply the wrong kind of push. This is the single most important volts fact in the whole guide, and it gets its own page next because it catches so many good people off guard.

The happy news: generators that make both are common. A unit that offers **120/240-volt** output (often through a round, twist-lock outlet) gives you the everyday 120 volts and the stronger 240 volts both. If a pump or another big appliance is on your wish list, that's the kind to look for.

> **✔ You don't choose the volts — the appliance does**
> Each thing in your home already expects either 120 or 240 volts, and the plug shape tells the tale. Your job is just to make sure the generator can supply whichever ones you need. When in doubt, snap a photo of the outlet and I'll tell you which it is.

120 volts vs. 240 volts: the one that trips people

This deserves its own page, because misunderstanding it is the costliest mistake I see folks make when they buy a generator.

Here's the trap. Someone on a well buys a small, quiet, well-reviewed inverter generator with a healthy watt number, brings it home, and discovers it can't run their well pump — not because it's too small in watts, but because it only makes 120 volts and the pump needs 240. All those watts, and the wrong kind of push. It's a genuinely upsetting surprise, and it's completely avoidable.

So let's be plain about which household things use which:

Runs on 120 volts	Runs on 240 volts
Lights, TVs, computers	Most well pumps
Refrigerator and freezer	Electric clothes dryer
Phone and tablet chargers	Electric range or oven
Fans, small space heaters	Central air conditioning
Internet router, a CPAP	Electric water heater

Notice the pattern: the everyday electronics and the fridge live happily on 120 volts, while the big, heat-heavy or motor-heavy appliances want 240. If everything on your outage list is in the left column — as it is for many in-town homes — a 120-volt unit is all you need. If anything is in the right column, you need a generator that makes 240 volts too.

> **! Two small units do not add up to 240 volts**
> It's a common and expensive mix-up: joining two little 120-volt inverter generators with a parallel kit gives you more 120-volt power, never a 240-volt push. For a well pump or another 240-volt appliance you need a single unit that truly makes 120/240 volts. Pairing twins won't get you there.

Amps: how much is flowing

Amps are the flow in our water picture — how much electricity is actually moving through the wire. You'll meet them mostly on the labels of your appliances.

If volts are the pressure, **amps** (short for amperes) are the gallons-a-minute — the amount of electricity streaming through. A thing that draws a lot of amps is pulling a big flow; a little charger sips just a fraction of one. Household circuits are usually rated for 15 or 20 amps, which is why plugging too much into one outlet can trip a breaker — you've asked for more flow than the wire is allowed to carry.

Here's where amps become genuinely handy. Many appliances list their draw in amps rather than watts, right on a little plate or sticker. And there's an easy bridge between the two, straight out of our water picture: **watts equal volts times amps**. For a standard 120-volt outlet, that means watts are roughly the amps times 120.

So a small appliance stamped "2 amps" on a 120-volt outlet is using about 240 watts (2 times 120). One marked "5 amps" is pulling around 600 watts. You don't need to be exact — this is just a way to turn an amps label into a watts number you can compare, which comes in handy when you're sizing.

That's really all you need from amps: they're the flow, they show up on appliance labels, and amps times volts gives you watts. If arithmetic isn't your idea of fun, don't fret — snap a photo of the label and I'll do the little multiplication with you.

> **✔ A quick way to read an appliance plate**
> Look for a small metal plate or sticker, often on the back or bottom. If it shows amps, multiply by 120 for a normal outlet to get rough watts. If it's a big 240-volt appliance, the math and the wiring both get more involved — that's a good moment to call.

Running watts and starting watts

Here's the wrinkle we've been promising: a generator, and many appliances, actually have two watt numbers. Understanding them is the very heart of watts explained.

Running watts — also called **rated** watts — is the steady amount of power something uses or makes while it's just humming along. A light bulb, a TV, a refrigerator that's already running: each has a running number that stays fairly constant minute to minute. This is the everyday, honest figure.

Starting watts — the **surge** or **peak** — is a brief, much bigger gulp that anything with a **motor** demands for the first second when it kicks on. A refrigerator, a furnace blower, a pump, a power tool — each grabs a big slug of extra power to get the motor spinning from a dead stop, then settles right back down to its running number.

Why the sudden gulp? Picture giving a heavy porch swing its first push — getting it moving from a standstill takes a real heave, but once it's swinging, a light nudge keeps it going. A motor is the same: breaking it free of a standstill takes a burst of muscle, then almost nothing to keep it turning.

How big is the burst? As a general rule, the start-up surge can be **roughly two to six times** the running number — but only for a heartbeat. Things without motors, like lights, a TV, or a phone charger, barely surge at all; they just draw their steady watts. That's the whole idea: a steady running number, plus a brief starting surge for anything with a motor.

> **✔ Why the surge is the number that bites**
> A generator that can carry the steady load but not the surge will cough or trip the instant the fridge kicks on. That's why both numbers exist — and why, when you size a unit, you plan for that brief gulp. The how-to of that lives in the sizing guide.

Kilowatts: just a thousand watts

Don't let this one worry you — a kilowatt is nothing new, just a tidy way to write a big number of watts.

A **kilowatt** (written **kW**) is simply **1,000 watts**. The "kilo" part means a thousand, the same as in kilometer or kilogram. So a generator described as "5 kW" makes 5,000 watts; one that says "2.2 kW" makes 2,200 watts. That's the entire trick — move the decimal, and there's no hidden difficulty at all.

You'll bump into kilowatts most often with larger generators and whole-home units, where writing "7,500 watts" over and over gets clunky and "7.5 kW" is neater. Small, portable inverter units are usually still described in plain watts, which is why the sizing conversation tends to stay in watts.

There's a close cousin worth a quick mention so it doesn't confuse you later: the **kilowatt-hour** (kWh). That's the unit your electric company bills you by, and it's about energy used **over time**, not power at one moment — a thousand watt-hours. We'll meet watt-hours properly on the very next page, so just tuck the word away for now.

The takeaway is small and freeing: whenever you see "kW," mentally add three zeros and you're back to plain watts, the number you already understand. Kilowatts aren't a new idea — they're the same watts in a shorter coat.

> **✔ A handy conversion in your head**
> Watts to kilowatts: divide by 1,000 (3,000 watts is 3 kW). Kilowatts back to watts: multiply by 1,000 (4 kW is 4,000 watts). That's the only kilowatt math you'll ever need for a generator.

Watt-hours: how batteries are measured

This is the one word that trips up even sharp folks, because it looks like "watts" but means something different — an amount, not a speed.

Think of driving. **Miles per hour** tells you how fast you're going right now; **miles** tells you how far you can travel on a tank. Power words work the very same way. **Watts** tell you how fast electricity is being used at this moment; **watt-hours** tell you how much you can use before the tank runs dry.

That's why **batteries** and those popular **power stations** are measured in **watt-hours** (Wh) — or, for the bigger ones, kilowatt-hours. The watt-hour number is the size of the tank: how much energy is stored inside. A station with more watt-hours can run your things longer before it needs recharging, the way a bigger gas tank takes you farther.

Here's how the two fit together in real life. Say a lamp draws 50 watts. A battery holding 500 watt-hours could run it for about ten hours (500 divided by 50). Run something thirstier and the same tank empties faster. Watts are the draw; watt-hours are the tank; how long you get is the tank divided by the draw.

This is exactly why a battery and a generator are different tools. A **generator** is rated in watts because you keep feeding it fuel — it runs as long as the gas holds out. A **battery** is rated in watt-hours because it holds a fixed amount and then needs recharging. Many folks keep both, and there's a whole guide on the battery power-station side of the family.

> **✔ Spotting the difference on a box**
> If the big number on the box ends in plain watts (or kW), you're looking at a generator's muscle. If it ends in watt-hours (Wh or kWh), you're looking at a battery's tank size. Same-looking words, very different meaning.

"Clean power" as a number: THD

You'll see inverter generators bragging about "clean power" and a small percentage next to letters like THD. Here's what that's really telling you.

Electricity from your wall doesn't just push in one direction — it flows back and forth many times a second in a smooth, even wave. Modern electronics expect that smooth wave and are happiest when they get it. "Clean power" simply means the generator's electricity is that same smooth, gentle wave, close to what comes out of your outlets at home.

Engineers put a number on the smoothness, and that number is **THD** — total harmonic distortion. Don't let the phrase scare you; it just measures how much the wave wanders from perfectly smooth. The rule is easy: **lower is better**. A low THD means a clean, gentle wave; a high one means a rougher, choppier wave with little spikes in it.

Inverter generators are built to keep that number low — you'll often see them advertise a figure comfortably in the single digits, generally considered smooth enough for delicate electronics. That's the whole selling point of an inverter unit: power clean enough for a good television, a computer, or a medical device without worry.

You may also hear "pure sine wave" versus "modified sine wave." **Pure sine** is the smooth, clean wave inverter generators make. **Modified sine** is a cheaper, choppier imitation found in some bargain gadgets, and it can make sensitive or medical equipment run hot or throw errors. For your good electronics, smooth and clean — low THD, pure sine — is what you want.

> **★ Clean power in one line**
> If you mainly want backup for the fridge, the TV, the internet, and maybe a CPAP, clean power (low THD, pure sine) is a real, practical reason to choose an inverter unit. It's the difference I point most folks to first.

Reading the box without getting fooled

Now let's put the words together and read a generator's box the way I would — with an eye on the one number the marketing hopes you'll fixate on.

Almost every generator advertises **two watt numbers**, and this is where a little knowledge saves you. There's a bigger number, often in the largest print on the box, labeled **peak**, **starting**, or **surge** watts. And there's a smaller number, usually quieter on the label, called **running** or **rated** watts.

The honest, useful figure is the **running (rated)** number. That's what the generator can make steadily, hour after hour — the power you actually live on. The big peak number is only a brief burst it can deliver for a second while a motor starts. It's real, but it's not what you should shop by, and the biggest print on the box is often that peak number precisely because it's the more impressive one.

So when you compare two units, weigh their **running** watts against each other and against what you want to run. If one box shouts a big peak number but whispers a modest running number, you now know to look past the shout. Two generators with the same peak can have quite different running watts — the steadier number is the true measure.

Then give the **volts** a glance. Does it say 120 volts only, or 120/240? If a well pump or another big appliance is on your list, you need the 120/240. And if you spot a watt-**hour** number instead of plain watts, you're holding a battery, not a generator — a different tool for a different job.

> **! Don't buy by the biggest number on the box**
> The large "peak" or "surge" figure is the one most likely to fool a hurried shopper. Find the running (rated) watts and the volts, compare those, and you're reading the box like a pro. Happy to look at one with you before you buy — (330) 200-8042.

A little glossary to keep

Here they are in one place — the power words, in plain English. Fold down this page or snap a photo to take shopping.

Word	In plain English
Watt (W)	How much work the power is doing now
Running / rated watts	The steady power it makes or uses
Starting / surge watts	A brief bigger gulp for motor start-ups
Volt (V)	The pressure or push behind the power
120 volts	Standard outlets — lights, TVs, the fridge
240 volts	A stronger push — pumps, dryers, ranges
Amp (A)	How much electricity is flowing
Kilowatt (kW)	One thousand watts
Watt-hour (Wh)	A battery's tank size; energy over time
THD / pure sine	How smooth the power is; lower is cleaner

That's the whole vocabulary — ten friendly words. Learn even half of them and you'll read a generator box with confidence, ask better questions at the store, and never be talked into more machine than you need.

> **✔ Keep it where you'll shop**
> Tuck this glossary in your phone or your pocket before you head to the store. And if a word ever still feels slippery, that's what I'm here for — a quick call sorts it out.

If you live in town: city and suburb

Most of my customers here in town — in Kent, Ravenna, Streetsboro, Aurora — are on city water and have fairly modest needs from a generator, and that makes reading the label refreshingly simple.

On city water, the water keeps running when the power's out, so the big 240-volt well pump is off your list entirely. That means the words that matter most to you live on the friendly, everyday side of the vocabulary: 120 volts, and a sensible number of running watts.

When you pick up a box in town, your eye only needs to do two things. First, find the **running (rated) watts** — the honest, steady number — and make sure it comfortably covers your short list of essentials: the fridge, some lights, the furnace blower, phones, internet, a TV. Second, a quick glance to confirm it makes **120 volts**, which practically every unit does. That's usually all the label-reading an in-town home needs.

You can happily ignore the big **240-volt** talk and the 120/240 twist-lock outlets — those are for well pumps and electric ranges you're not backing up. Don't let anyone steer you to a bigger, pricier 240-volt machine you'll never use; in town, smaller and 120-volt is often exactly right.

The one word worth a second look is that **peak** versus **running** business. A neighbor might brag about a generator's big peak number; now you know to smile and check the quieter running figure instead. It's the true measure, in town as anywhere.

> **✔ The two numbers a town home reads first**
> Running (rated) watts enough for your short essentials list, and 120-volt output. Nail those two and the rest of the label is just details. Snap a photo of any box that puzzles you and I'll read it with you.

If you're in the country on a well

Out in the townships — Atwater, Rootstown, Deerfield, Palmyra — many of my customers are on a private well, and for them one word on the generator label towers over all the others: volts.

Here's why it matters more than watts, more than anything else. When you're on a well, keeping water flowing in an outage usually means running the well pump — and **most home well pumps run on 240 volts**. A generator that only makes 120 volts cannot run that pump, no matter how many watts it boasts. This is the single most important thing in this whole guide for a country home.

> **! The honest truth about well pumps**
> Most home well pumps run on 240 volts, and the small, quiet inverter generators most folks picture put out only 120 volts — so they cannot run the pump at all. For a well you need a larger inverter unit with a 120/240-volt outlet, sized to your pump, and a proper way to connect it. Pairing two little units together does not fix this — two 120-volt units still only make 120 volts. I'll help you get the right size, and bring in a licensed electrician for the hookup.

So when you read a box out here, the **volts** come first, before the watts. You're looking for a unit that clearly says **120/240-volt** output, usually with a round, twist-lock outlet — that's the one that can deliver the stronger push your pump needs. A small, quiet 120-volt-only suitcase unit, however well reviewed, simply isn't the tool for the pump, and I'd hate for you to learn that after you'd bought it.

Only after the volts check out do the watt numbers matter — and a well pump has a hefty starting surge, so it takes a good-sized 120/240 unit to cover it. The exact size depends on your pump, which is the sizing guide's territory; the point here is simply the word: **volts first, on a well**.

A gentle country reminder that no vocabulary can change: even the right generator takes a moment to start, and storms don't warn you. Keep a few days of drinking water on hand and fill a bathtub when a big one is coming, so you can flush. A generator that isn't running yet still can't make water.

> **✔ On a well, read the volts before the watts**
> The proudest watt number on the box means nothing to your pump if it's 120-volt only. Look for 120/240-volt output first, then worry about size — and let me bring in a licensed electrician for the hookup, which is their job, not a do-it-yourself one.

The safety talk: carbon monoxide

No matter how well you learn to read a label, one fact about every fuel-burning generator never changes — and it's worth pausing on even in a guide about words and numbers.

Every generator that burns gasoline or propane makes carbon monoxide, or "CO" — a gas you cannot see or smell. It is the one real danger with a generator, and it is completely avoidable. More people are hurt by running a generator in the wrong place than by anything else, so please read this page twice.

Outside only — no exceptions

Never run a generator indoors, and that includes the garage, the basement, a shed, a carport, or a covered porch — even with the door up or a window open. CO pools and seeps into the house. The only safe place is outdoors, in the open air.

At least 20 feet away, exhaust pointed away

Set the generator at least 20 feet from the house, and turn it so the exhaust blows **away** from any door, window, or vent. Don't tuck it against the wall to hide it or keep it dry — give it room to breathe and let the fumes drift off.

Alarms are your safety net

Put working carbon-monoxide alarms on every level of your home and near the bedrooms, and use ones with a battery backup so they work when the power is out. Test them now, before storm season, not during it.

Putting the words together

Let's walk a box the way you would in the store aisle, using the words we've learned. Nothing to buy here — just proof that it all clicks into place.

Picture a generator box in front of you. In big print it shouts a peak watt number. Lower down, quieter, it lists a running (rated) watt number. Right away you know the move: **the running number is the honest one**, so that's the figure you weigh against what you'd want to keep going.

Next your eye finds the volts. It says 120/240-volt output, with a round twist-lock outlet pictured. Now you know this unit can handle the stronger 240-volt push — so a well pump or an electric range is at least on the table, not ruled out the way a 120-volt-only unit would be.

You spot "kW" somewhere in the specs — say a tidy 3.6 kW. You mentally add three zeros: 3,600 watts. No mystery. And when a nearby battery power station lists its big number in watt-hours, you know instantly that's a tank size, not a generator's muscle — a different tool entirely.

Finally you notice it advertises clean power with a low THD figure. That tells you it's gentle enough for the TV and the computer. In under a minute, using nothing but the words in this guide — running watts, volts, kilowatts, watt-hours, clean power — you've read the box honestly, and you're nobody's easy mark at the store.

> **★ You've got the vocabulary now**
> That's genuinely all reading a generator box takes — a handful of plain words and the confidence to look past the biggest print. If you'd like a second pair of eyes on a real one, call me at (330) 200-8042 and we'll read it together.

Power words people mix up

A handful of these words look or sound alike but mean different things. Here are the tangles I help folks unknot most often.

Q: Watts vs. watt-hours

Watts are how fast power is used right now; watt-hours are how much is stored or used over time — speed versus distance. Generators list watts; batteries list watt-hours.

Q: Volts vs. watts

Volts are the push; watts are the work that push does. A unit can have plenty of watts but the wrong volts — that's how a 120-volt generator fails to run a 240-volt pump.

Q: Running watts vs. peak watts

Running (rated) is the steady power you live on; peak (surge) is a brief burst for motor start-ups. Shop by the running number, not the bigger peak one.

Q: Kilowatts vs. watts

A kilowatt is just 1,000 watts — the same idea, a shorter form. See "kW," add three zeros, and you're back to plain watts.

Q: Amps vs. watts

Amps are the flow; watts are the work. Multiply amps by the volts (120 at a standard outlet) to turn an amps label into rough watts.

Every one of these is an honest mix-up, not a failing — the words really are close cousins. Keep the water picture in mind (push, flow, work, and amount over time) and they sort themselves right out.

Your power-word questions, answered

The questions I hear most once folks start reading the numbers for themselves.

Q: Do I really need to learn all of this?

Not all of it. If you remember only "volts push, amps flow, watts work," and "shop by the running watts," you're ahead of most shoppers. The rest is there when you want it.

Q: How do I know if something is 120 or 240 volts?

The plug and outlet tell you — 240-volt appliances use bigger, different-shaped outlets. Well pumps, electric dryers, ranges, and central air are the usual 240-volt suspects.

Q: My appliance shows amps, not watts. Now what?

Multiply the amps by the volts. For a normal 120-volt outlet, amps times 120 gives you rough watts — plenty close for comparing and sizing.

Q: Is a higher THD number good or bad?

Lower is better. A low THD means smooth, clean power that's gentle on electronics; a higher number means rougher power. Inverter units keep it low on purpose.

Q: Why is a battery rated in watt-hours but a generator in watts?

A battery holds a fixed amount of energy — its watt-hour tank — while a generator makes power continuously as long as you feed it fuel, so it's rated by its steady watts.

How I can help

Learning the words is a fine start, and if you'd rather just have a patient person read the box with you and point you to the right unit, that's one of my favorite things to do for folks around Portage County.

I'm Bill, and I run Bill's Home Tech right here in Portage County. I'm a tech-help person, not a power company and not a pushy salesman — I help folks pick the right gear, set it up, and feel confident using it. With generators, that means helping you choose a unit that fits your home and your budget, showing you how to run it safely, and getting your internet, TV, and devices happily back on once the power's flowing.

And when the words on your label lead somewhere that touches your home's wiring — a 240-volt well pump, an electric range, a whole-home hookup — that part belongs to a licensed electrician, which I'm not. I'll help you read the label, pick the right unit, and coordinate the electrician for the 240-volt work, so you've got one friendly point of contact for the whole project.

Three easy ways to get help

- **An in-home visit** — a flat $99 first visit. I come to you, here in Portage County, and every visit is 30-day come-back-free.
- **Remote help** — a flat $49 screen-share, up to two hours, for the things I can sort out without coming over (it's free for Support Plan members).
- **A Support Plan** — $39 a month for folks who'd like me on call all year.

Your tear-out cheat sheet

Everything in this guide, boiled down to what fits in a shirt pocket. Tear it out and take it shopping.

- ❑ Volts push, amps flow, watts are the work getting done.
- ❑ Watts equal volts times amps (amps times 120 at a standard outlet).
- ❑ Two watt numbers: running (rated) is honest; peak (surge) is a brief motor-start burst.
- ❑ The surge can be roughly two to six times running — plan for it, but shop by running watts.
- ❑ 120 volts runs the everyday things; 240 volts runs pumps, dryers, ranges, central air.
- ❑ A 120-volt generator can't run a 240-volt well pump — and two 120-volt units don't make 240.
- ❑ Kilowatt (kW) equals 1,000 watts. Just add three zeros.
- ❑ Watt-hours (Wh) measure a battery's tank; watts measure a generator's muscle.
- ❑ Clean power means low THD and a pure sine wave — gentle on TVs, computers, and medical gear.

Nine plain truths, and you're reading generator labels better than most people in the store. Keep this where you'll see it, and remember a real person is only a phone call away.

The short version

If you remember nothing else from this guide, remember these:

- Volts push, amps flow, watts are the work getting done — that one sentence carries you through almost any label.
- A generator lists two watt numbers: shop by the running (rated) one, not the bigger peak or surge figure.
- 120 volts runs the everyday things; 240 volts runs pumps, dryers, and ranges — and a 120-volt unit can't run a 240-volt pump.
- Watts are a generator's muscle; watt-hours are a battery's tank — same-looking words, different tools.
- Clean power means low THD and a pure sine wave, gentle on your electronics — and I'm a phone call away.

Watts, Volts & Amps at a Glance

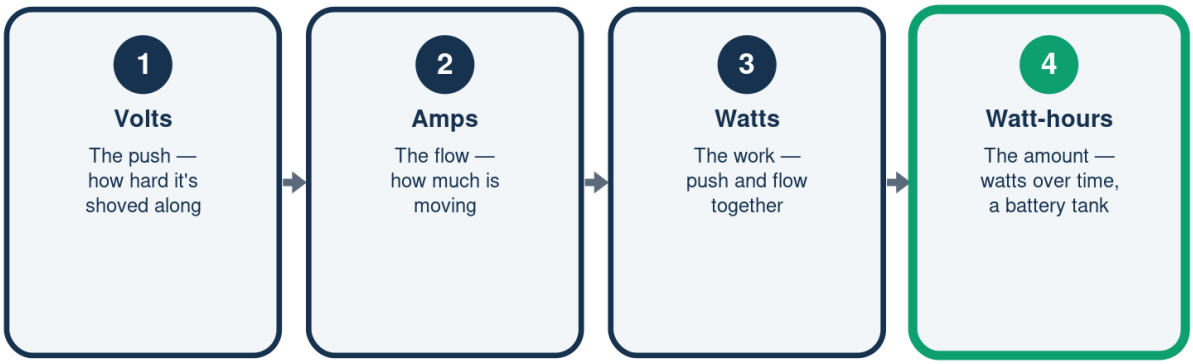
The power words in plain English

	In plain words	The water picture
Volts	The push behind it	Water pressure
Amps	How much is flowing	Gallons a minute
Watts	The work getting done	Turning the wheel
Kilowatt (kW)	Just 1,000 watts	A big pile of watts
Watt-hour (Wh)	A battery's tank	Total gallons stored

Push, flow, work — plus a tank for batteries. That's the whole vocabulary.

How the Words Fit Together

Volts, amps, watts — and watt-hours



Volts push, amps flow, watts work — watt-hours are how much, over time.

Running Watts vs. Starting Watts

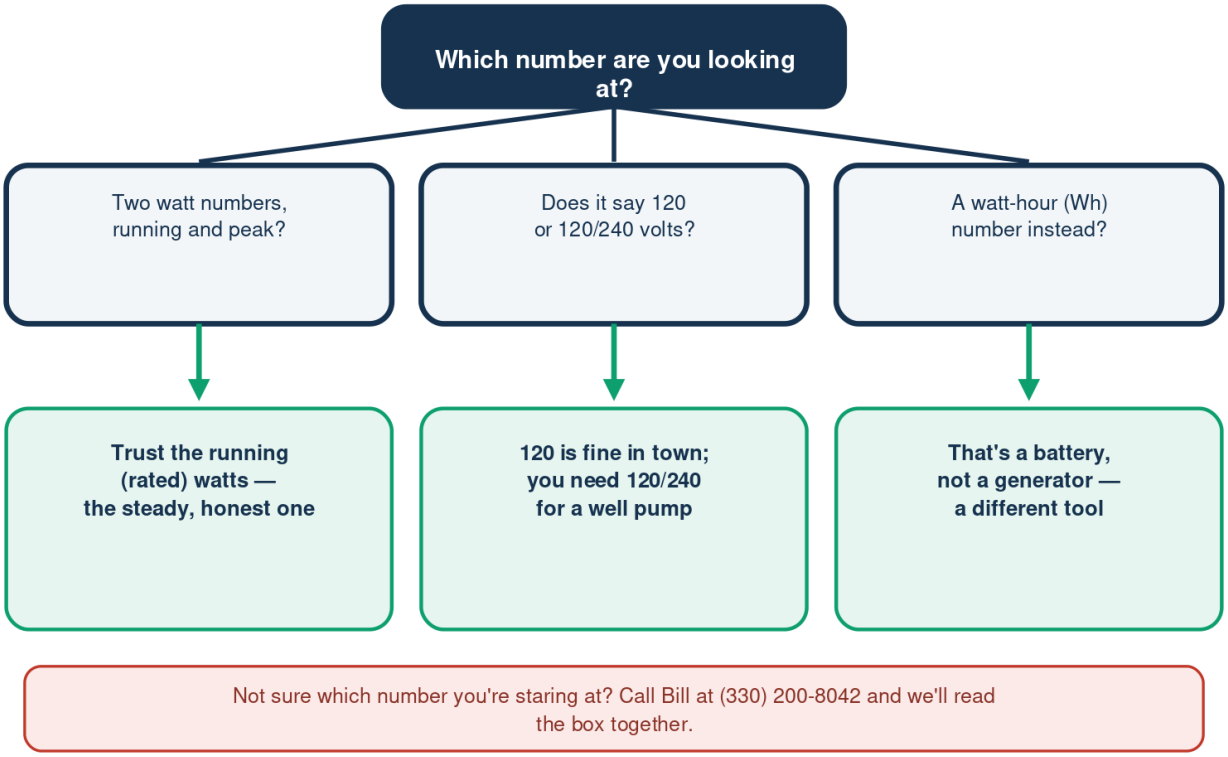
The two numbers on every generator

	Running (rated)	Starting (surge)
What it is	Steady power	A brief big gulp
How long	Hour after hour	About a second
For	Everything, always	Motors starting up
How big	The honest number	Roughly 2-6x running
Shop by	Yes — this one	No — don't be fooled

Both numbers are real — but the steady running figure is the one to trust.

Which Number on the Box Do I Trust?

Reading a generator's label



Not sure which number you're staring at? Call Bill at (330) 200-8042 and we'll read the box together.

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

BILL'S HOME TECH

Home & Small Business Tech Solutions

Need a Real Person?

You do not have to remember all of it.
You just have to remember you can call.
Friendly, in-home tech help — I come to you.

BILL'S PROMISE

If you are not 100% happy with a visit, I will make it right — or refund it. No awkwardness, no fine print. That is how I would want to be treated.

(330) 200-8042 · BillsHomeTech.com

Bill@BillsHomeTech.com · Mon–Sat 9:00 AM – 7:30 PM

— Bill

Prefer help without a visit?

Bill can screen-share and fix many things remotely — a flat $49, free for Support Plan members.

BILL'S HOME TECH
Home & Small Business Tech Solutions

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

Book a visit —
billshometech.com/book

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Bill@BillsHomeTech.com · Mon–Sat 9:00 AM – 7:30 PM