



Whole-House Surge Protector Guide

Vortexx Series R / PSP Products
Homeowner education from ABR Electric

Vortexx Series R 1-Phase Whole House Surge Protector Guide

By ABR Electric (James Adams) - Collin County, Texas

Welcome to the Vortexx Series R 1-Phase Whole House Surge Protector Guide.

This guide is not a DIY instruction manual.

I don't care how many YouTube videos you've watched or if they tell you "it's just a couple wires, bro."

Do NOT install this yourself. That's how you turn a \$400 surge protector into a very expensive fireworks show... and possibly a Darwin Award contender.

This book is here so you know what's going on when an electrician shows up. You'll understand why we do things a certain way, what questions to ask, and what "good" looks like. Think of it as your cheat sheet for not getting ripped off and actually getting proper protection.

Ask the right questions to your electrician:

- "What's the SCCR on this unit?"
- "Are you doing a Type 1 or Type 2 install?"
- "Will you check and verify my grounding before we're done?"
- "How short can you keep those leads?"
- "Does this preserve the full factory warranty?"

When you know what to ask, you get better work.

Chapter 1: Why You Need Whole-Home Surge Protection

Modern homes are packed with sensitive electronics - smart appliances, TVs, computers, EVs, HVAC systems, and home theaters. A single power surge can destroy thousands of dollars in equipment instantly.

"If you have any electronics at all in your house, it's great to have a surge protector."

The Real Threats

James Adams breaks down the dangers clearly:

- **Lightning** - Especially common in Texas and the South.

"If you live in the southern states, Texas, Louisiana on over to Florida... you're going to have lightning a boatload... You want to have a good quality surge protector. Otherwise, you will lose stuff every storm season."

Lightning can deliver hundreds of thousands of amps. Adams is realistic:

"A surge protector... will not be 100 percent safe against things like lightning... we're talking about God territory."

- **Spikes** - Sudden high-voltage bursts, often when power returns after an outage.

"When the power comes back on... there'll be a spike because all you and all your neighbors are drawing power in."

- **Surges** - Longer voltage fluctuations, common during heavy summer AC use or grid instability in Texas.

Why a Whole-House Surge Protector Matters

Installed at your main panel, it catches surges before they reach your wiring and appliances. For best protection, combine it with point-of-use surge strips (cascading protection).

Key Terms to Know

- **SCCR (Short Circuit Current Rating)**: How much fault current the unit can handle before failing.

"The higher that number is... it will last longer."

- **Surge Amps (Max Discharge Current)**: How much energy it can divert (look for 100kA-150kA range).
- **Warranty**: Most units are sacrificial - they protect your home by "dying" and then need replacement. Always read the fine print.

Chapter 2: New U.S. Electrical Code Requirements

Since the **2020 National Electrical Code (NEC)**, whole-house surge protection is now **mandatory** for new services and major upgrades:

"It's now in the United States a requirement by code. When you upgrade or put a new service, you've got to have it."

What the Code Requires (NEC Article 230.67)

- A **Type 1 or Type 2** Surge Protective Device (SPD) is required on all dwelling unit services.
- The device must be installed as part of the service equipment or immediately adjacent to it.
- Applies to new construction, service upgrades, and major panel replacements.
- The **2023 NEC** raised the minimum performance standard and expanded coverage to additional building types.

In **Texas**, the 2023 NEC was adopted statewide in September 2023. Local jurisdictions in Collin County (Allen, McKinney, Plano, Frisco, etc.) are actively enforcing it, with the 2026 NEC already on the horizon.

What This Means for Collin County Homeowners

Even if you're not upgrading your service, adding surge protection now is smart insurance. For existing panels - especially crowded or older ones - a **Type 1** device like the **PSP Vortexx Series R** is often the easiest solution because it can connect directly to the main lugs without requiring a breaker.

- **Pro Tip from James Adams**

When upgrading an old panel (Federal Pacific, Zinsco, etc.), always include a quality whole-house surge protector while everything is already open.

Key Takeaways

- New builds and service upgrades **must** have surge protection to pass inspection.
- Proper installation by a licensed electrician preserves the lifetime warranty and \$100,000 connected equipment coverage.

Chapter 3: Understanding SCCR Ratings & Unit Lifespan

Not all surge protectors are created equal. One of the most important numbers to check on any unit is the **SCCR** - Short Circuit Current Rating.

"It's labeled SCCR - short circuit current rating. All that is is how much of a fault current that surge protector can handle before it fails or explodes. The higher that number is... it will last longer."

In simpler terms, SCCR tells you how rugged the device is and how many major surge events it can survive before it needs replacement. A higher SCCR means the protector will handle Texas storm seasons better and give you more years of service.

"We're here in the great state of Texas. We get pounded during storm season. So, you want a surge protector with a higher rating and it will last longer."

Why This Matters in Texas

Our frequent lightning, grid instability from summer heat, and occasional utility switching mean surge protectors take a real beating. Choosing a unit with a strong SCCR (ideally 20kA or higher) helps ensure it doesn't sacrifice itself after the first big storm.

Chapter 4: The PSP Vortexx Series R - Features & Lifetime Warranty

The **Vortexx Series R** by PSP Products is a robust, flexible whole-house surge protector well-suited for Texas homes. It's available in VR-120 and VR-GEN models and designed for both new construction and retrofit installations.

Key Specifications

- **Voltage:** 120/240 VAC Nominal
- **Max Operating Voltage:** 150 VAC
- **Max Discharge Current:** 120 kA (VR-120) / 150 kA (VR-GEN)
- **Nominal Discharge Current:** 20 kA

- **Temperature Range:** -40°F to +185°F (-40°C to +85°C)
- **Enclosure:** NEMA 4X (rated for indoor or outdoor use)
- **Diagnostics:** Green LED = Normal operation | Red LED + Audible Alarm = Fault (check wiring and voltages)

Installation Flexibility

- Works as **Type 1** (direct connection to main lugs - no breaker required in many cases)
- Also compatible as **Type 2** (via breaker)
- Can be mounted inside the panel, surface-mounted with an optional bracket, or flush-mounted

"Our PSP Vortex is one of those with the lifetime [warranty] with some provisos."

Lifetime Warranty Highlights

- **Lifetime coverage** on the surge protector itself (repair or replacement if damaged by a surge)
- **Up to \$100,000 Down-Line Coverage** for electrical appliances and electronics damaged by a surge - provided the unit was properly installed and the protected equipment was functioning before the event
- Coverage applies primarily to surges originating from the main electrical panel

Important Warranty Conditions

- Must be installed according to manufacturer instructions and all applicable NEC and local codes
- Proper grounding is required for the device to function effectively
- Claims must be filed promptly with proof of purchase and installation details
- Exclusions include direct lightning strikes, improper installation, negligence, and external wiring (phone, cable, etc.)

Chapter 5: Installation - Timeframes & Expectations

Installing a whole-house surge protector like the **PSP Vortexx Series R** is generally a straightforward job for a licensed electrician.

"The installation shouldn't take more than... maybe an hour thereabouts... Usually I would say if you wanted to be safe, 1 to 2 hours."

Factors That Can Affect Installation Time

- **Crowded breaker panels** - Many older homes in Collin County have full panels. Moving circuits or making space can add time.
- **Mounting location** - A simple internal panel mount is fastest. Flush-mount installations (cutting drywall for a clean interior look) take longer.
- **Panel upgrades or modifications** - If circuits need to be relocated or the panel is very tight, expect the higher end of the time range.

- **Type 1 vs Type 2** - Direct Type 1 installations (no breaker) are often quicker.

Most homeowners are surprised how quickly the job goes once the electrician is on site. The majority of Vortexx installations in North Texas are completed in under 90 minutes.

Pro Tip: Clear the area in front of your electrical panel before the electrician arrives. Remove boxes, furniture, or storage so they have easy access.

Chapter 6: Will the Power Be Turned Off During Installation?

This is one of the most common questions homeowners ask. The answer depends on the installation method.

"If you're installing it as a Type 2... your power should never be off because it'll be attached to a two-pole 20 or two-pole 50. However, if you're doing a Type 1 like the one that we saw today... plan for it to be off... Maybe for half an hour max."

Breakdown by Installation Type

- **Type 2 (via breaker):** Power usually stays on. The electrician works on the live panel or installs the breaker safely.
- **Type 1 (direct to main lugs/feeders):** Power is typically shut off for safety while making the direct connections.

"Plan for it to be off... Maybe for half an hour max."

Even when power is turned off, most modern electricians work efficiently, so outages are short. Many Collin County homeowners report being without power for only 15-30 minutes during a Vortexx Type 1 install.

What to Expect

- Your electrician may choose to de-energize the panel for safety even on some Type 2 jobs.
- Sensitive electronics (computers, TVs, medical equipment) should be powered down ahead of time as a precaution.
- The power comes back on quickly, and the green LED on the Vortexx confirms everything is working.

James Adams' Advice:

Don't be surprised if the power goes off briefly - it's normal and usually the safest way to do a clean Type 1 installation.

Chapter 7: Pre-Installation Prep

A little preparation goes a long way toward making your surge protector installation smooth and efficient.

"Make sure the area in front of the breaker boxes... is physically clear."

What You Should Do Before Your Electrician Arrives:

- Clear everything in front of the main electrical panel - remove boxes, storage bins, furniture, paint cans, freezers, or anything blocking access.
- Make sure there's at least 3-4 feet of clear workspace in front of the panel.
- Turn off or unplug sensitive electronics (computers, TVs, gaming consoles, medical devices) as a precaution.
- Gather any records of your current electrical panel (photos of the inside label or previous work) to share with the electrician.
- Let your electrician know if you have any known issues with flickering lights, tripped breakers, or past surge damage.

"Ask your electrician to check your grounding."

This simple request ensures the installer evaluates your entire grounding system before installing the Vortexx.

Chapter 8: Why Checking Your Grounding is Critical

Proper grounding is the foundation of any effective surge protection system. James Adams stresses this point strongly:

"Whoever is installing this for you absolutely has to check the service grounding... If it's not [solid], that surge protector, regardless of what it is, will not function well at all."

Why Grounding Matters So Much

A surge protector works by safely diverting dangerous voltage spikes **to the earth**. If your home's grounding system is weak, corroded, missing, or improperly bonded, the Vortexx cannot do its job effectively. The surge energy has nowhere safe to go, which can reduce protection and even damage the unit itself.

What a Good Electrician Will Check:

- Main grounding electrode conductor (connection from panel to ground rod or Ufer)
- Bonding between neutral and ground in the main service panel
- Condition of the ground rod(s) and connections
- Any subpanel grounding issues
- Overall resistance of the grounding system

James Adams' Warning:

Many homeowners focus only on the shiny new surge protector and the green LED light. However, without solid grounding, you're not getting the protection you paid for - even with a high-quality unit like the Vortexx.

Recommendation for Collin County Homes

Texas soil, aging homes, and past DIY electrical work can lead to grounding problems. Always insist on a grounding check as part of any surge protector installation. It's quick for a licensed electrician and gives you

peace of mind that the system will perform when you need it most.

Chapter 9: Cascading (Layered) Protection - Best Practice

A single whole-house surge protector at the main panel provides excellent primary defense, but it's not the complete solution. James Adams strongly recommends **cascading protection** - also called layered protection - for maximum safety.

"When we install a whole home surge protector, in theory, it does protect everything, but... literature... will also recommend what they call cascading protection."

Recommended Protection Layers

1. **Whole-House Level** - PSP Vortexx Series R installed at the main electrical panel (your first and strongest line of defense).
2. **Sub-System Level** - Point-of-use surge protectors at high-risk outdoor equipment such as:
 - Air conditioning compressors (at the disconnect)
 - Pool equipment and control panels
 - EV chargers or well pumps
3. **Device Level** - Quality surge-protected power strips or surge receptacles for sensitive electronics (computers, TVs, home theaters, medical equipment, etc.).

"Those extra layers really really help... Those create that cascading layers [that] gives you better and better protection."

This layered approach ensures that any surge energy that slips past the main Vortexx is caught by the next layer, dramatically reducing the chance of damage.

Summary: Protecting Your Collin County Home with the PSP Vortexx Series R

Whole-house surge protection is now both a **code requirement** for new construction and service upgrades and smart insurance for every modern Texas home. With our intense storm seasons, lightning activity, and sensitive electronics, a quality surge protector is one of the best investments you can make for your property and peace of mind.

The **PSP Vortexx Series R** stands out as a flexible, high-capacity solution with strong SCCR ratings, NEMA 4X durability, easy diagnostics, and a true lifetime warranty with \$100,000 in down-line coverage.

Key Takeaways from James Adams (ABR Electric):

- Install as close as possible to the main service entrance with short, straight leads.

- Always verify proper grounding - it's critical for the system to work.
- Use cascading/layered protection for the best results.
- Type 1 installations offer excellent flexibility, especially in crowded panels.

"We got the green light... we're Golden man."

When properly installed by a licensed electrician, the Vortexx Series R gives you reliable, long-term protection against the surges and spikes that threaten homes throughout North Texas.

Final Recommendation

If you live in Allen, McKinney, Plano, Frisco, or anywhere in Collin County, now is an excellent time to add whole-house surge protection - whether you're upgrading your panel or simply want better security for your family's electronics and appliances.

Safety Note: This device should only be installed by qualified, licensed electricians. Risk of electrical shock exists.

Talk with ABR Electric

For current availability and an installation quote, call (214) 690-1941 or visit abrelectric.com.