

Just How Long Will Zero Surge Technology Last?

July 19, 2019 by Donna De Vico, Sales & Marketing Director, Zero Surge Inc.

One of our dealers who sells Zero Surge plug-in models along with refurbished laboratory equipment recently contacted me because he came across a Zero Surge unit that was about 15 years old. He said it was still working and thought I might want it back to evaluate and use as a testimonial to the product's robust design. I thanked him but told him that we regularly test units that have been in service for as long as the company has been in business and they pass all current production standards. This includes the 1st generation Zero Surge units, before Spectrum Wide Voltage Range technology was introduced in 2002.

I then got to thinking about an 8R15 that we had protecting our production testing equipment. Now anyone who knows our company president, Jim Minadeo, knows he loves to crunch numbers. I recalled he had written something about the longevity of that 8R15 so I asked him about it. Sure enough, Jim blogged about this in 2014. Following is that blog:

Could a Zero Surge 8R15 really last forever? - August 30, 2014 by Jim Minadeo

*One of the main features that separates Zero Surge from all of the other surge protectors in the market is that our technology **does not use** any sacrificial Metal Oxide Varistors (MOVs). Virtually all others use MOVs. MOVs are in surge protectors, UPS systems, LED lights, CFL lights, and other applications. What makes them useful is that they are cheap. But you get what you pay for because they do not last very long. What is very long? Most MOVs cannot last more than a couple of years of normal use. If you still believe in using a whole building protector, your MOVs will last a lot longer mostly because the surges they are trying to protect (80%) are coming from inside your building and not even seeing the protector.*

Using a Series Mode Power Quality Filter, our Zero Surge units do not rely on any components that are sacrificial. When talking about our products, I like to say that our products have an indefinite shelf life. But I never say that it lasts forever. We just did not have the ability to predict that many decades out into the future using short term testing to back up our claims. We did have UL perform testing to simulate 10 years of the worst-case surge environment and we pass with no loss in performance. But accelerated testing cannot always simulate real world wear. Little did we know, we found a way to create a long term test of one of our 8R15s.

Here is the story:

At Zero Surge, our products are tested using various pieces of test equipment as well as visual inspection. We test for over a dozen electrical properties and several mechanical properties. We do not test just a sample. We test every single product multiple times. We have a twenty-five-year history of performance to back up the quality of our testing. One of our main pieces of equipment is a surge generator that sends several high voltage extreme surges. We use this test for the sub-assemblies and the final product. This equipment plugs into a standard 120 outlet, so we use an 8R15 to connect the various modules to provide quality power. Back in the summer of 1998, a brand new 8R15 was connected to the test equipment, set in the corner, and for the last 16 years, it served us well. Our test voltage basically runs 2000+ Volts. Sometimes more, depending on the operating voltage of the product under test. Then one day this week, it stopped working.

Think about this. I am willing to tell the world that we had a product that stopped working. Why?

*Of course, my initial reaction was that of concern and worry. What happened? How? Taking it apart, it appears that one of the SCRs stayed open and thus the cause of the failure. We only purchase the highest quality SCRs from a major manufacturer. But then I started to think about this. I looked up some test logs. Checked production reports. Added 15% more for extra testing, rework testing, and R&D work. The total number of surges this **8R15 must have endured was approximately 185,000 surges of 2000+ Volts!** Let me put that into perspective. According to IEEE, the average US building will experience about 1000 surges per year of 2000 Volts. That means this **8R15 saw 185 years' worth of surges!***

Let that number sink in – 185 years...

The closest lifespan in the electronic world I have found is a Compact Disc. The CD, when stored in a constant temp/humidity environment will last 100+ years. Probably the only things that last longer in the Information Technology world is a piece of paper or an old-time vinyl album.

So when we are asked about how long our products last, I can be that much more confident that it will provide a century or more worth of service.

I suppose I will have to figure out who will inherit the Zero Surge units I own, because they will surely outlive me! Please feel free to reach out to me at ddevico@ZeroSurge.com if you would like information on the critical applications we protect, key accounts using our products, testing data, or any further information.