

HOW DO I PROTECT MY VALUABLE APPLIANCES FROM LIGHTNING SURGES?



Did you know that lightning is the single biggest cause of damage to and destruction of electrical and electronic equipment in homes?

Due to the ever-changing climate and rising temperatures lightning strikes are becoming more and more frequent.

Several things can happen in a storm. Some more catastrophic than others. The other issues are directly related to lightning activity. When lightning strikes nearby (but not too close hopefully!), electrical spikes & surges are generated, and these can transmit into electrical wiring. We are referring to lightning surges here.

The 5 levels of protection we would recommend for any situation are:



POWER CUTS

During storms, network disruption can frequently happen and power cuts are extremely common. There is not much you can do but you can use products to provide power like an [Uninterruptible Power Supply \(UPS\)](#).



POWER-BACK SURGES

These happen hand in hand with power cuts. When power resumes, it is usually accompanied by a surge. This can be quite high and result in severe damage. So, delay on start-up & monitoring until supply is safe is critical. Use the [AVS](#) range to protect against this event. A [UPS](#) will help as well.



HIGH VOLTAGE

(also known as voltage swell or surge) – That is a sustained high level of voltage to typically >250V and up to 300+. These could be catastrophic if the voltage rises very high, very quickly. Here we would recommend using our [AVS](#) range of products which will disconnect the power until it returns back to normal.



LOW VOLTAGE

Generally happens when the grid is overloaded and you get excessive voltage drop on the distribution network. You can again use our [AVS](#) range or typically add a voltage regulator.



LOSS OF NEUTRAL

Due to an accident or sabotage – In this event, the single phase voltage will then rise to the 3 Phase level. So instead of getting 230V, the equipment will experience up to 415V continuously. An extremely serious event. And not that uncommon. The [AVS](#) range would protect against this. But even so, the [AVS](#) might get damaged but at least it will do so with circuit open appliances protected.



LIGHTNING SURGES

These are high energy surges generated by nearby lightning activity that will raise the (voltage) potential in the surrounding areas to thousands of volts and could seep into buildings and thereby subjecting equipment to harmful surges.

Continues overleaf



There are 3 levels of surges and corresponding protection;

- a. **Class III** - these are surges generated internally from nearby equipment like motors starting and stopping. Low energy and requires a Type III SPD (Surge Protection device)
- b. **Class II** - Higher level of surges that appear at the distribution board. A Type II SPD installed at the DB would protect against these. The DSP3P-D80 (as per your installation) generally protects against these. Surges of this type are 8/20µs wave shape.
- c. **Class I** - these are surges of 10/350µs. Highest energy level. These are generated by nearby lightning activity. And a Type I SPD is required

** A good quality earth and correct fitting is required to ensure the SPD works effectively to dissipate the energy into the ground.

Summary

The ideal protection is multi-layered depending on the type of equipment you are trying to protect. If you live in an area of frequent storm and lightning activity, we recommend that you fit a Class I device at the distribution panel:



DSP1P-25DM

<https://www.sollatek.com/products/dsp1p-25dm/>

Further down and at your equipment, use the VoltShield Range, like the AVS15 to protect your appliances:



AVS13

<https://www.sollatek.com/products/avs13/>

If you have computers (or even Multimedia, Hifi, TV), use a UPS to provide back up power in case of power loss:



Ultima LCD 1.5k-2K

<https://www.sollatek.com/products/ultima-lcd/>

Other devices that can be considered:

- [AVS30](#) for more powerful protection and including loss of neutral protection
- [TVGuard](#) instead of AVS13 for protection of television and hifi
- [FridgeGuard](#) instead of AVS13 for protection of fridges and freezers
- [Multiguard](#) as a surge protection multiway



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