

December 2015

In Need of Protection?

Although often confusing, choosing a Surge Protection Device for Electrical Distribution boards and sub boards should be a simple task. Mike Lawrence from Havells provides some advice.

Approximately 300,000 lightning strikes hit the ground in Britain each year with 30 per cent of reported lightning strikes causing severe damage. The South East of the UK sees the largest number of direct lightning strikes statistically. Instances of severe damage to buildings are dropping with time, as effective Lightning protection Systems (LPS) are now mandatory in many buildings. However, an LPS on its own, does not provide effective protection to the electronic equipment in building in the event of a direct or indirect lightning strike.

With the huge increase in the amount of electronic equipment we now see in modern buildings, there is even more reason to provide effective protection to the building from direct or indirect lightning strikes.

Whether from a direct strike, indirect strike or through air strikes creating induced coupling in to overhead power cables, partial lightning currents have a sneaky way of finding a path into buildings which are not adequately protected. An indirect lightning strike up to 1Km from a building can create enough partial lightning energy via connected metallic services to be a problem.

Fast transient overvoltages from lightning strikes can reach 6kA in well insulated power distribution systems, yet typically 1.5kV is enough to cause outright damage to sensitive equipment and it takes even less to dramatically shorten the operating life of equipment.

The susceptibility level of electrical equipment is typically calculated as twice the peak operating voltage of the electrical system, so approximately only 715V for 230V supplies i.e if the electrical equipment is subjected to levels above 750V, damage can occur.

Overvoltage Protection

There is much information and guidance as to what level of overvoltage is likely to degrade electronic equipment, but typically this would be only 715V for a 230V supply. Sensitive and critical equipment connected to the electrical system must be protected against transient overvoltages in accordance with BS EN 62305 and the latest amendment to the IET Wiring Regulations, BS 7671:2008.

Protecting a building against surges appears to be a complex subject as it's not easy to equate the damage transient voltage does until the electrical equipment is irreplaceably damaged.

BS EN 62305 establishes that the coordinated SPD approach to transient overvoltage requires the creation of a series of 'Lightning Protection Zones (LPZ's). In medium to larger buildings, multiple SPDs will be required to create a minimum level of protection across service lines and Lightning protection zones.

Selecting suitable surge protection devices (SDPs) as part of an electrical distribution solution is an important task and choosing the right approach needn't be a complex process. The objective in fitting SPDs is to create peace of mind so that you know you are protected against transient overvoltages, which can degrade and damage electronic systems and lead to disruption, expensive downtime and fire / electric shock hazard.

Solutions

The issue with many installed SPD solutions, is that although the SPD will have some level of tested performance, this may not relate to any real level of protection afforded to the building, once installed within the electrical distribution architecture. Installation variables can make a very big difference to the actual level of protection achieved. The recently amended IET wiring regulations, BS 7671:2008 (+A1:2011) defines the requirements for

selection and installation of SPDs, but this is about best practice rather than achieving a known level of protection.

The solution Havells can offer regarding surge protection is through the company's partnership with Furse – a leader in Earthing and Lightning protection systems. Unlike other distribution boards – Havells distribution boards range has been optimised through testing with Furse, creating an SPD solution that achieves a tested level of performance. The combined solution achieves the lowest possible let through voltage and removes many of the installation variables that can limit the SPD performance.

This solution has been specifically designed and tested to ensure optimum transient overvoltage protection on AC power supplies, with controlled and verified installation performance to BS 7671 and BS EN 62305. Installation is hassle-free as all components and instructions are provided within the SPD kit, enabling contractors to progress quickly throughout the site without worrying about the effectiveness of the installed protection, saving both time and cost.

Once installed, an effective SPD will provide reliable, long lasting transient overvoltage protection of the AC power supply, as part of the coordinated SPD approach, with the ability to withstand repeated transients and give clear pre end-of-life warning, allowing plenty of time for a replacement, which ensures users are not left unprotected. By specifying and installing solutions which have been designed to deliver such benefits, contractors are protecting their futures too.

As global warming makes lightning storms more prevalent the necessity of having good lightning protection will continue to rise.

-ends-

757 words

Press information

John Houston / Oli Brown

Wildwood Public Relations

E: john.houston@wildwoodpr.com / oli.brown@wildwoodpr.com

T: +44 (0)1293 851115

www.Havells.co.uk

More about Havells

Havells is a Global manufacturer of Electrical and Power Distribution Equipment, with a focus on Industrial & Domestic Circuit Protection, Switchgear, Cables & Wires, Motors, Fans, Power Capacitors, CFL Lamps and Luminaires for Domestic, Commercial & Industrial application. With sales over \$1Bn and serving customers in over 50 countries, Havells is well placed to deliver UK market optimised solutions to meet local standards and regulatory requirements.