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The Need To Know

Overvoltage Protection

VERSO®
domestic circuit protection

The Need
To Know

Surge Protection

The key points you need to know

Types of SPDs (three types)

Surge devices are categorised into three specific product types, all grouped around their strengths;

TYPE 1: T1 devices are designed to offer protection against partial lightning current with a typical waveform 10/350 us. Usual employs spark gap technology. They must be able to withstand large amounts of charge and energy. T1 devices must be installed where the buildings include a lightning protection system.

TYPE 2: T2 devices are designed for use within sub-distribution boards (consumer units). T2 SPDs can prevent the spread of over-voltages in the electrical installations and protects equipment which is connected to it. T2 devices cannot protect against direct lightning surges.

TYPE 3: T3 devices are physically the smallest SPDs available. They have a low discharge capacity. They must therefore only be installed as a supplement to TYPE 2 and in the vicinity of sensitive loads. T3 SPDs cannot be installed at the origin of an installation.

Can one SPD fit all domestic installations?

Most SPDs available to protect AC power circuits are built with a *metal oxide varistor (MOV).* The critical aspect of the MOV is the kA rating of the device which is related to the MOVs cross sectional area and its material composition. The larger the cross sectional area of the MOV dictates the kA rating. With only one or 20kA single MOV in an SPD, it's usually only compatible for TN-C-S earth arrangements. Devices suitable for TN-S earth systems feature 2 MOVs or a 40 kA MOV, these are suitable TN-C-S systems as well.

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When do I have to Fit and SPD?

Bs 7671:2018 18th Edition IET (443.4):

There are three key observations which have to be made in the decision of overvoltage protection:

1 - *Where overvoltage could cause serious injury/loss of human life or interruption of public services, disruption to commercial and industrial activity or affects a large number if co-located individuals.*

2 - *For all other cases (not listed in 1) a risk assessment should be carried out, using the method shown in regulation 443.5, to determine whether protection against transient overvoltage of an atmospheric origin is required.*

3 - *An exception may be permitted for single dwelling units if the total value of the installation and the equipment connected to it does not justify the protection.*

In review of points 1,2 and 3 if the answer is that overvoltage protection is required then it should be done so by the installation of a surge protection device. Selection and installation of this device should be done so in accordance with section 543 of BS 7671.

Your Verso Solution:

With SPD installations becoming more common across the UK, we have designed a range of factory fitted SPD consumer units that are complete with overcurrent protection with a VCP132B MCB which also come pre-wired for your convenience. VCP SPDs have both and MOV and GDT as well as being rated to 40kA and designed to fit into a single module enclosure to save further space and cost.

Fit your Smart Design 1.0 SPD consumer unit in the same time as your usual installation and without the worry of non-compliance