

Surge protection integrated into Conteg PDUs

CONTEG uses the highest quality level of surge protection (type 3) by integrating the SPD module into the housing of the rack PDU. In short, as close as possible to the connected critical end devices for the highest quality level of protection.

The SPD modules used can be replaced 'hot swappable', so that the power supply does not have to be interrupted and the uptime of your equipment in the data centre remains high, as desired. These SPD modules also allow very little energy and residual voltage through, which protects the sensitive electronics and extends their lifespan.

Our years of experience ensure availability, certainty and long-term quality in your data centre

CONTEG has gained years of experience with the application of surge protection in combination with PDUs, which offers you the certainty of long-term quality in your power supply and critical equipment. The close collaboration with the advisors at DEHN has contributed greatly to this.



Picture: SPD module in PDU housing

Cooperation with global market leader DEHN

CONTEG stands for high quality rack PDUs. This means that the components we integrate into our products must also meet these quality requirements. In the case of surge protection we work exclusively with products from DEHN, with whom we have a long-standing cooperation.

DEHN is the global market leader in the field of lightning and surge protection, based on more than 111 years of experience and expertise. In particular, the combination of both lightning protection and surge protection gives DEHN a virtually unique position in terms of knowledge and know-how. DEHN offers proven and excellent protection, on a higher quality level than universal power distribution systems with integrated varistor technology.

From its own factory in Germany, DEHN always ensures very high quality SPD modules, which have been extensively tested in its own lightning current test laboratory and are approved according to IEC61643.11 (unlike some other suppliers).

More information

Would you like more information about surge protection in your data centre, combined with the use of rack PDUs?

Then contact us without obligation. We would be happy to help you find the best situation for your data centre. Please contact us by mail: presales@conteg.com

CONTEG

CONTEG is a Czech manufacturer of IT racks, cooling units and data center accessories. The rack PDUs are built to customer specifications as OEM products. You can compare the configuration and production processes with Lego®: a limited number of building blocks can create an unlimited number of final products. CONTEG rack PDUs are adapted to suit the electronic infrastructure of your data centre instead of the electronic infrastructure being adapted to the rack PDU. You can find more information at www.conteg.com

WHITEPAPER

SURGE PROTECTION IN YOUR DATA CENTER

Are you prepared for lightning strikes in your data centre?

Heavy thunderstorms and intense lightning have become more frequent in recent years. This is associated with climate change and the increase in extremely hot and sometimes tropical days. The chance that your data centre is struck by lightning is therefore increasing. The consequences of lightning strikes in your data centre can be enormous, both in terms of the risk of material damage, economic damage and the danger to people. Based on the principle that 'prevention is better than cure' it is advisable to think about the protection of your data centre against the risk of lightning strikes. By applying surge protection at various levels (up to the rack PDU) you are in any case well prepared!

Greater chance of lightning strikes due to climate change

The climate has been changing rapidly over the past few decades. As a result of this climate change, the number of summery and tropical days in Western Europe is increasing, which means that heavy thunderstorms are occurring more frequently, often accompanied by lightning discharges. The chance of damage caused by lightning is therefore growing, which is also recognised by insurers. According to the Dutch Association of Insurers, the number of lightning discharges increases by 10 to 15 per cent for every degree of global warming.

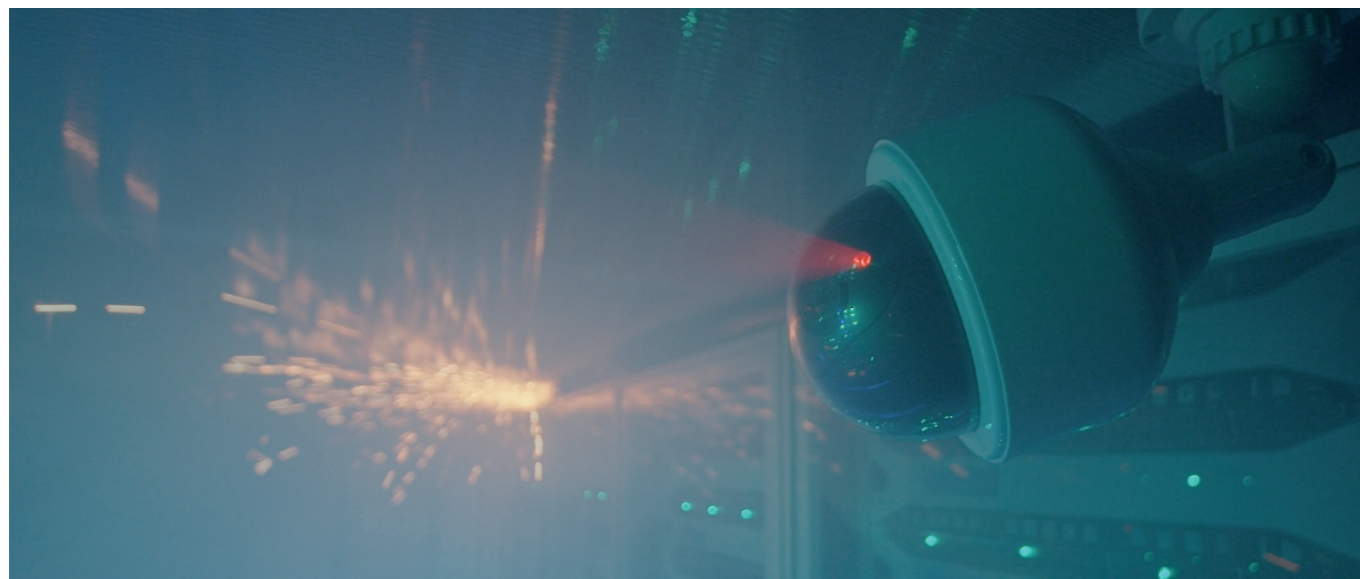
Urgency of security in data centres

Like other buildings, data centres are increasingly exposed to the dangers and risks of lightning strikes. However, in the case of a data centre there is a lot of - often sensitive and expensive - electronics that play a crucial role in the availability and processing of data.

In data centres, the potential consequences are large

The potential damage and consequences in data centres are considerable. First of all, there is the risk of material damage, but this is also the case in all other environments. But perhaps even more important, given the important role of data centres in information provision and data processing, is the risk of loss of availability. This is often related to public service and economic value. But also consider the functioning of vital business units in both profit and non-profit organisations (such as government buildings and healthcare institutions). Moreover, it forms a possible risk to the TIER classification of the data centre, and thus indirectly to its reputation.

A direct or indirect lightning strike can cause a great deal of damage and have serious consequences as a result of overvoltage near the electronics within the data centre due to strikes or switching actions. It is therefore important that data centres are equipped with the correct lightning and surge protection.



Surge protection in your data centre

Do you want to protect your equipment against overvoltage and thereby reduce the risk of damage or downtime within your data centre? Then choose the right type of surge protection. CONTEG offers surge protection (type 3) that is integrated in our rack PDUs to protect the IT equipment in your data centre against overvoltage caused by lightning or switching processes. For this we work closely with DEHN, the world market leader in lightning and surge protection. An additional advantage of the SPD (Surge Protection Device) module used by us is that it can be replaced during operation (hot swappable) so that the uptime of your equipment remains high.

Lightning protection of buildings and infrastructure

As already explained, protecting buildings and associated infrastructure against lightning is a high priority. This is primarily driven by legislation and regulations (employers and owners of buildings are obliged to provide a safe environment for their employees and visitors). But in its entirety, it is about preventing damage and/or loss of: people, public services and economic value.

European standards for data centres

In the European standards for data centres, EN 50600, requirements have been drawn up with which data centres must comply. It prescribes that a data centre must be equipped with external lightning protection and internal surge protection for both the power and data lines. SPDs must be selected and installed in accordance with the IEC62305 standard (part 4).

Various overvoltage categories

There are a total of 3 types of surge protection:

Type 1: surge protection on the main distributor

Type 2: surge protection on the distribution frame

Type 3: surge protection in/near the critical end device

When does which overvoltage category apply?

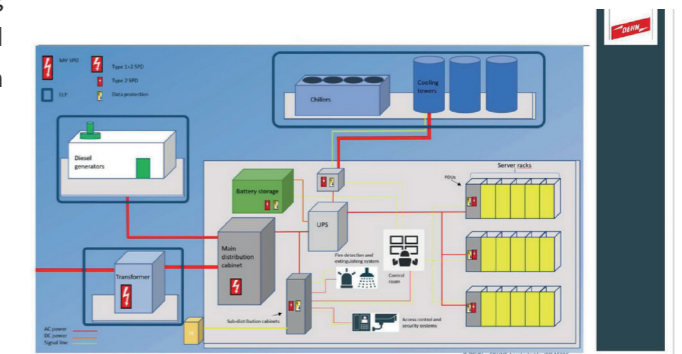
Type 1 surge protection becomes mandatory if external lightning protection is present on the premises. In that case, a type 1 SPD (or surge protector) is installed in the main distributor. This device first conducts a lightning partial current to earth, but also allows part of the lightning energy to pass through (in the form of an overvoltage pulse with a specified impact voltage).

With type 1 surge protection, an effective protection zone of up to 10 metres is used.

If the distance is greater than 10 metres, the impact voltage becomes so great (factor 2 to 3) that the equipment in the data centre can still be damaged.

Application of type 2 and type 3 surge protection

If the distance is more than 10 metres, an additional surge protector (type 2 or type 3) must be applied. This is almost always the case in data centres. In this case, a type 2 protector is installed in the distribution box or a type 3 protector is installed as close as possible to the critical end device.



Picture: Typical data centre building structure (Source: DEHN)

Consequences of suddenly switching off local power

In addition to the previously mentioned reason - namely increased surge voltage after a distance of 10 metres - there is another reason to install a type 3 surge protector as close to the equipment as possible. Namely, the consequence of sudden switching of local power, which can lead to high switching peaks and overvoltages (up to 2 kV impact voltage).

Common situations in this area include the breaking of fuses or the sudden switching on or off of remote groups. The resulting shock voltage can damage sensitive electronics, which is anything but desirable in a data centre.