



DEHN's lightning impulse current laboratory is one of the most powerful of its kind anywhere in the world



The extremely high lightning currents, which may occur in the event of direct lightning strikes, are the primary source of lightning damage to structures as well as electrical devices and systems.

To prove the effectiveness of protection measures, it is often necessary to perform lightning current tests on complete systems. The newly designed test facility generates extremely high lightning currents with a peak value up to 400 kA in the standardised 10/350 μ s test wave form. This powerful test facility allows to test lightning protection systems for installations and systems requiring maximum protection.

The performance of the test laboratory has been doubled so that lightning impulse currents up to 400 kA (10/350 μ s) can now be simulated. This value is twice as high as the lightning impulse current for the maximum lightning protection level (LPL I: 200 kA (10/350 μ s)) described in the latest IEC 62305-1 lightning protection standard. This lightning protection standard concedes at the same time that for certain structures the maximum lightning protection level defined in the standard may not be sufficient for protecting these structures. However, these protection principles must be considered individually for the relevant structure. To verify the individually developed protection concept

and its effectiveness, lightning current tests with impulse currents whose amplitudes exceed 200 kA (10/350 μ s) for the maximum voltage protection level (LPL II) are required. With its powerful test facility for simulating such extremely high lightning currents, DEHN once again underlines its leading position in the fields of lightning and surge protection. The test centre allows to develop and distribute market-oriented top-quality products and solutions based on national and international safety standards.

The test centre with five different laboratories extending over a floor space of 800 m² is equipped with the latest devices and technologies which are essential for developing new products and practical solutions. New test methods can be developed based on the knowledge and experience gained in this process. This allows to perform comprehensive studies and to offer tests as a service. Test institutes and industrial customers already use these laboratories to test the lightning current discharge of wind turbine rotor blades with 400 kA (10/350 μ s). In addition, DEHN helps customers understand normative requirements in concrete tests.

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Trade fairs

FSAWWA

1–4 December 2014

Orlando, USA

Elektro Vakbeurs

9–11 December 2014

Hardenberg, Netherlands

eltec

14–16 January 2015

Nuremberg, Germany

E-Fachschulung

27–29 January 2015

Rostock, Germany

E-world energy & water

10–12 February 2015

Essen, Germany

elektrotechnik

18–20 February 2015

Dortmund, Germany

BLITZDUCTOR® SP

The new BLITZDUCTOR® SP is a powerful surge arrester which increases the safety of data, information technology as well as measuring and control systems.

The pluggable, multipole BLITZDUCTOR® SP surge arrester is designed for different voltage ranges, thus ensuring protection of information technology installations and systems such as measuring and control circuits and bus systems. Two universal base parts with or without signal disconnection when the protection module is removed are optionally available. Thanks to its modular arrester concept, all protection modules of the BLITZDUCTOR® SP series can

be easily and quickly plugged into the base part. The universal base parts optimise storage and ensure easy prewiring and service. The DIN rail mounted arrester with a width of only 12 mm protects up to four signal cores. It has a high discharge capacity up to 20 kA (8/20 μ s) and a low voltage protection level and can thus be installed in conformity with the lightning protection zones concept at the boundaries from O_B to 2 and higher. A wide range of accessories such as elements for earthing of unused lines or easy testing of signal cores makes the BLITZDUCTOR® SP arrester particularly user-friendly.



DEHNconnect – Space-saving surge protective device for automation systems



DEHNconnect DCO SD2 is an efficient surge protective device for protecting e.g. automation systems. With a width of only 6 mm, two cores are efficiently protected against surges. A HF version of the surge protective device, which is ideally suited for high transmission rates, is now available.

The device can be easily snapped onto a DIN rail and is automatically earthed via the sup-

porting foot. Moreover, the equipotential bonding system can be connected to terminal equipment by means of the integrated earth terminal. For maintenance work on the system, the signal circuit can be simply interrupted by removing the integrated plug-in module. Compact in design, DCO SD2 can be used wherever space is restricted.

DEHNbox TC 180

The new DEHNbox TC 180 provides optimal surge protection for telecommunication systems (ISDN, xDSL and analogue telephones).

DEHNbox TC 180 protects one balanced data interface and has a high discharge capacity of 2.5 kA (10/350 μ s) per core. Surges are limited to an acceptable level without interfering with the data signal. The device can be installed in conformity with the lightning protection zones concept at the boundaries from O_A to 2 and higher. Its cut-off frequency up to 250 MHz ensures transmission of high-frequency signals. The compact arrester can be



easily retrofitted at any time thanks to its surface-mounted enclosure which is ideally suited for wall mounting. The cable cores (solid and

flexible with wire end ferrule) and the earthing conductor can be inserted into the spring-loaded terminals of the fast connection system without tools. An additional separate terminal allows to directly connect a cable shield with the equipotential bonding system. Due to its IP 65 degree of protection, DEHNbox TC 180 can be used in almost all environments. Thus, DEHNbox TC 180 is an ideal surge protective device for information technology transmission systems such as in private homes, home offices, small businesses and small industrial businesses.

DEHNGuard® SE H LI

DEHNGuard® SE H LI sets new standards due to its early warning system (Lifetime Indication LI).

This intelligent surge arrester informs the user of an arrester failure at an early stage and is thus ideally suited for all installations in industrial and commercial environments which require maximum reliability and availability such as offshore wind turbines computer centres and power plants.

In addition to its discharge capacity up to 65 kA (8/20 μ s) and Lifetime Indication, the surge arrester stands out due to its width of only 1.5 modules and versions from 75 V a.c. to 1000 V a.c. All other benefits of the modular DEHNGuard® family design such as the mod-

ule locking system and the coded protection modules, which prevent the installation of an incorrect module, are also integrated in the DEHNGuard® SE H LI products. In conjunction with a floating remote signalling changeover contact, the three-step Lifetime Indication with visual indicator <green–yellow–red> always shows the status of the surge protective device. If the varistor structure is irreversibly pre-damaged by an increased energy load, the yellow indicator and the remote signalling contact show that it is advisable to replace the protection module before the installation becomes unprotected since the arrester is fully operational until the red indicator flag appears. This allows easy



integration of the arrester in condition monitoring systems. Thus, preventive maintenance concepts can be easily implemented.

DEHNGuard® SE DC – Powerful d.c. switching device DCD ensures safe operation

The new DEHNGuard® SE DC surge protective devices from DEHN protect d.c. systems against surges.

The d.c. switching device DCD of the modular DEHNGuard® SE DC type 2 surge arrester is designed in such a way that the protective device is safely disconnected in case of overload, thus preventing d.c. switching arcs and fire damage. Depending on the voltage level, DEHNGuard® SE DC can even be used without additional backup



fuse in case of direct currents up to 300 A. Thanks to voltage levels of 60 V d.c., 242 V d.c., 550 V d.c. and 900 V d.c., DEHNGuard® SE DC is ideally adapted to the different technical fields of application of d.c. systems such as safety lighting systems, emergency power supply systems, d.c. systems for direct supply of d.c. drives, control circuits and any kind of battery-operated supply systems.

DEHN protects PV systems



◀ DEHNcombo YPV SCI

is a compact, lightning current carrying combined arrester for the d.c. side of photovoltaic systems which can be used without additional backup fuse up to short-circuit currents of 1000 A.

DEHNCube YPV SCI ➔

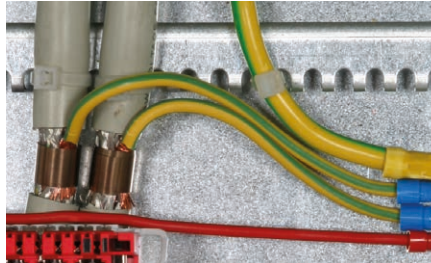
is the first type 2 d.c. surge arrester for PV systems to be installed outside of enclosures and is thus ideally suited for protecting string inverters.



SA KRF constant force spring

The shields of the incoming information and power supply lines can be contacted by means of SA KRF constant force springs in a space-saving and lightning current carrying way.

As, in the course of time, the conductor materials are subject to a yield, this yield is compensated by a spring element. To permanently pro-



tect the clamping point from corrosion, constant force springs are wrapped with a self-bonding SKB rubber tape.

Constant force springs allow solderless shield connections for equipotential bonding or lightning equipotential bonding. They can be installed subsequently without interrupting the conductor shield or requiring tools for installation.

Pipe clamp for use in hazardous areas



DEHN offers pipe clamps which can be installed in hazardous locations without great effort. These pipe clamps are capa-

ble of discharging lightning currents up to 50 kA in potentially explosive atmospheres of zone 1 and 2 as well as 21 and 22 without sparking.

To fulfil these high requirements, lightning impulse current tests were successfully carried out in a potentially explosive atmosphere in cooperation with an independent test institute. In these tests, DEHN proved absence of ignition sparks when lightning current flows through the pipe clamp.

Due to this ground-breaking proof, welding or the use of threaded bushings for lightning equipotential bonding at pipelines in hazar-

dous areas will be a thing of the past soon. The special design of the spring contacts of the pipe clamp ensures electrical contact with pipes of different diameters without ignition sparks. Different connection options (e.g. cable lugs, flat strips) allow flexible use, thus eliminating the need for welding or drilling work. This considerably reduces installation time and installations or parts thereof no longer have to be put out of operation when installing the pipe clamp. If pipe clamps for hazardous areas are used as an explosion protection measure, potential ignition sources can be prevented.

HVI®power Conductor

The patented HVI®power Conductor, a high-voltage-resistant insulated down conductor which safely conducts the lightning current from the air-termination system to the earth-termination system, is the latest continuation of lightning protection according to Benjamin Franklin.

Its special design allows installers to maintain equivalent separation distances of 90 cm (air) from earthed metal building installations. Uncontrolled flashover is thus prevented and the



lightning current is systematically conducted to the earth-termination system. The HVI®power Conductor is tested with lightning impulse cur-

rents of 200 kA (10/350 µs) and can thus also be used for LPL I. In combination with a supporting tube and a stand, the conductor can form an isolated air-termination system and can thus be used more flexibly. Moreover, air-termination mast heights up to 7.5 m and the resulting large protected volumes for roof-mounted structures are advantageous. If dimensioned properly, insulated conductors form an air-termination system which provides protection for future structural changes on and to the roof.