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## **VCSD - Voltage-controlled short-circuiting device from DEHN**

**The VCSD voltage-controlled short-circuiting device from the surge protection and lightning expert DEHN sets new standards. It is an intelligent short-circuit switch which is controlled by overvoltage and limits transient, temporary and long-duration overvoltage. It is capable of discharging all interference voltages except direct currents without negatively affecting the d.c. potential of cathodic protection systems. The device is ideally suited for pipelines which are interfered by lightning strikes, electric railways or high-voltage lines. The VCSD limits overvoltages and their effects in its immediate vicinity to a safe level.**

The VCSD is an intelligent short-circuit switch which is controlled by overvoltage and limits transient, temporary and long-duration overvoltage. It is capable of discharging all interference voltages except direct currents. Interference voltages of a certain duration or voltage level activate functional units of the short-circuit switch which are assigned to the relevant overvoltage and short-circuit the overvoltage for the duration of its occurrence without negatively affecting the d.c. potential of cathodic protection systems.

The VCSD limits overvoltages and their effects in its immediate vicinity to a safe level. It protects the insulation of pipelines, reduces or prevents a.c. corrosion, provides protection for devices and components and ensures even personal protection since maximum permissible touch voltages (according to AfK No. 3 or operator guidelines) are undercut. The protective device has a high discharge capacity, is tested for all interference voltages and is freely adjustable for interference exceeding 200 ms in the range from 3 to 50 V a.c. The discharge current can be monitored and faults can be signalled via floating contacts and LEDs. A self-test mode ensures easy maintenance.

Thanks to the coordinated interaction of the functional units of the VCSD, the following surge-related effects can be prevented:

### **- Lightning-related puncture and flashover at insulating clearances**

Lightning-related overvoltage is limited and the associated lightning currents are discharged to local earth.

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#### **DEHN + SÖHNE GmbH + Co.KG.**

Postfach 1640  
D-92306 Neumarkt  
Phone + 49 9181 906-0  
Fax + 49 9181 906-1100  
e-mail: [info@dehn.de](mailto:info@dehn.de)

**[www.dehn-international.com](http://www.dehn-international.com)**

#### **Corporate Communications**

Petra Raab  
Phone + 49 9181 906-1426  
Fax + 49 9181 906-551426  
e-mail: [petra.raab@dehn.de](mailto:petra.raab@dehn.de)

#### **Advertising Department**

Werner Meier  
Phone + 49 9181 906-1123  
Fax + 49 9181 906-1478  
e-mail: [werner.meier@dehn.de](mailto:werner.meier@dehn.de)

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**- Dangerous touch voltages at accessible places**

Dangerous touch voltages are limited below the maximum permissible touch voltage for the duration of their occurrence.

**- Reduction of a.c. corrosion as a result of a.c. interference**

Technical alternating currents between 16.7 Hz and 60 Hz can be permanently discharged to low-impedance earth electrodes without negatively affecting the cathodic protection potential at long-distance pipelines.

The VCSD is thus used in widely distributed and highly networked electrical systems which are influenced by interference voltages from various sources of interference. Typical fields of application are insulated pipeline sections, cathodically protected containers / storage tanks, open earthing of cable shields at accessible places, corrosion-free connection of metal installations embedded in the ground (e.g. earth-termination systems) with a foundation earth electrode and interconnection of different isolated earth-termination systems such as the connection of foundation earth electrodes of a building to an isolated signal ground or railway earth electrode.



Figure: VCSD - Voltage-controlled short-circuiting device from DEHN

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[www.dehn-international.com](http://www.dehn-international.com)

**Corporate Communications**

Petra Raab  
Phone + 49 9181 906-1426  
Fax + 49 9181 906-551426  
e-mail: [petra.raab@dehn.de](mailto:petra.raab@dehn.de)

**Advertising Department**

Werner Meier  
Phone + 49 9181 906-1123  
Fax + 49 9181 906-1478  
e-mail: [werner.meier@dehn.de](mailto:werner.meier@dehn.de)

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**The market leader DEHN, a globally active family-owned electrotechnical company** with about 1,600 employees worldwide, offers innovative products and solutions as well as comprehensive services in the field of **surge protection, lightning protection and safety equipment**. DEHN focuses on the protection of system and building technology, the transportation, telecommunication and process sector, photovoltaic systems, wind turbines, etc. The company's continuous growth is based on more than 100 years of tradition and experience as well as highest quality standards and consistent customer and market orientation throughout the world.

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D-92306 Neumarkt  
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Fax + 49 9181 906-1478  
e-mail: [werner.meier@dehn.de](mailto:werner.meier@dehn.de)