ACER VOLTAGE s.r.o.

Low-Voltage Limiters for Railway Vehicles in DC Systems

LOW-VOLTAGE LIMITERS P60G, P120G – (VLD-F)

– for outdoor and indoor use

P60G and P120G are new types of low-voltage limiters Type 1 VLD-F based on the requirements of EN 50122-1: 2011, which are designed to protect the non-live parts of metallic structures in DC or AC traction power supply systems. They are used to provide effective protection to individuals who may come into contact with these parts during lightning strikes or during a defect of the tractive overhead line. The limiter has a high internal resistance if there is a voltage lower than its specified DC sparkover voltage UVDC and becomes conductive when this level is exceeded. In case of failure due to the live part of the traction power supply system and the conductive part (which are connected) unintentionally coming into contact with the return circuit, the limiter protects against impermissible touch voltage by becoming conductive and causing the power to turn off. According to EN 50122-1: 2011, this type of limiter is mainly recommended for the connection between the protected part and return circuit in the overhead line areas (or pantograph areas) that may be in contact with the conductors or damaged current collector, as well as on the support structures / pylons which can become live due to an insulation failure. When the applied voltage drops again below the specified value of its nominal level, the limiter returns into a non-conductive state again.

The functional part P60G (P120G) is made using a special gas-filled gas discharge tube (GDT) with

a shortened response time of 20nsec, rated for up to three consecutive lightning strikes with a current of 50kA (10/350). A light blue silicone rubber is used on the outer insulating cover. The working chamber of built GDT is equipped with technically sophisticated fail-safe mode hardware that provides an automatic transition to short-circuit mode in the event of long-lasting overloads above 500A DC (AC) (this state is non-reversible). A blue silicone rubber is used on the outer insulating cover. It is hydrophobic and has excellent resistance against weathering, pollution and UV rays. The mounting bracket, connecting bolts and nuts are made from stainless steel and are suitable for connecting conductors with a cross-section of 16–50 mm2 Fe (Cu). The product is delivered with an integrated bracket, allowing the P60G (P120G) to be mounted directly on to the protected metal structure (pillar, wall or flange). The voltage limiter should be mounted vertically with the mounting bracket at the top. The limiter is installed directly to a protected building construction (using two bolts M12), so that in the event of its activation a conductive connection is generated between this structure and the return path. The limiter can be activated either by lightning current or current resulting from contact between a protected metallic structure and a fallen overhead line. In such a case there will be a potential difference between these parts, which amounts to more than 60V (valid for P60G), or 120V (valid for P120G). The in-built GDT ignites instantly (response time is typically 20ns) and forms a temporary electrical connection between both parts (typical internal resistance of the ignited P60G (P120G) is 0.001 ÷ 0.002 Ω). The duration of this transient process is automatically broken up by the equalisation of the potential between the protected structures and a return path, when the GDT is automatically switched off due to the recombination of its gas filling.

Protection of temporary steel structure of the tramway line by means of P120G product

MAP OF OUR CUSTOMERS

We deliver our products to more than 20 European countries, to the Middle East, Asia, Australia, USA and South America. We also co-operate with prestigious business partners in some of these countries.

With our superior technology (on a global scale), profound industry expertise, and knowledge of local markets, we can offer our customers products, system solutions, and services that help them to improve the reliability of their transmission systems.

Our manufacturing programme ensures consistent supply of high-quality products for customers worldwide. Our customers have easy access to the full range of products, either directly from us as the manufacturer, or from the system of distributors or wholesalers, which is constantly being expanded.

To check the quality of our products, 100% of the products are thoroughly tested on measuring and control devices. The measuring equipment enables precise control of the technical specifications of the entire production. For this reason we have also obtained and we constantly renew our certification as per EN ISO 9001: 2016 standard.

You may find details about ACER VOLTAGE product range in our catalogue or on the website:

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LOW VOLTAGE LIMITERS FOR RAILWAY VEHICLES IN DC SYSTEMS

protection of non-live parts of metal structures in DC traction power supply systems

voltage in limits

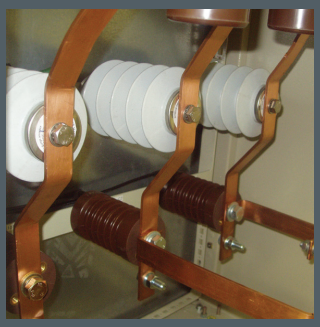
Why you should choose us?

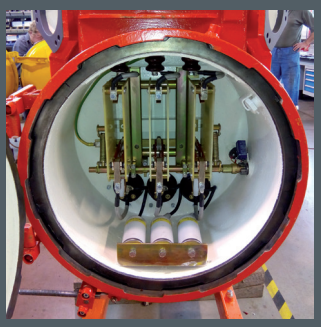
- you can trust us
- our market presence dates back to 1992
- you can put single piece orders
- our delivery dates are short
- we are equipped with modern testing tools
- we guarantee high quality
- 100% of our products is being tested
- we are certified according to EN ISO 9001: 2016

acer VOLTAGE

PROTECTION AGAINST ATMOSPHERIC AND SWITCHING OVERVOLTAGE IN AC SYSTEMS

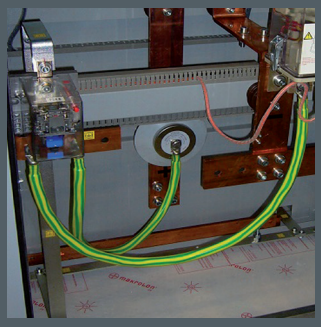
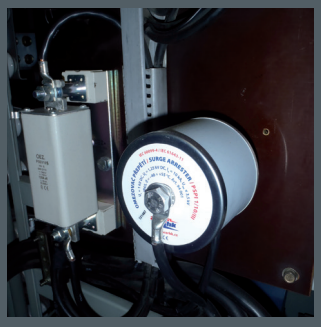
protection of high voltage transmission systems, transformers, switching equipment and HV cable systems





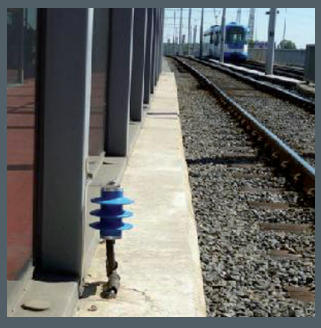
PROTECTION AGAINST ATMOSPHERIC AND SWITCHING OVERVOLTAGE IN DC SYSTEMS

protection of DC traction system, rail traction vehicles and equipment in DC systems

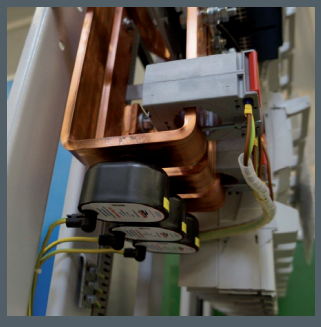

LOW VOLTAGE LIMITERS FOR RAILWAY VEHICLES IN DC NETWORK

protection of non-live parts of metal structures in DC traction power supply systems


PROTECTION AGAINST ATMOSPHERIC AND SWITCHING OVERVOLTAGE IN AC NETWORKS

protection of LV outdoor lines, household connections, distribution transformer switchboards



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