



DEHN protects.

ABL Charging Poles for Electromobility



Customer

ABL

ABL SURSUM Bayerische Elektro-
zubehör GmbH & Co. KG

Project overview

Industry

Electromobility

Application

Charging poles for public places
Class II of protection

Hardware

DEHNshield



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ABL

ABL is a family business in the electrical engineering industry. In its over 90-year history the company invented the SCHUKO plug and manufactured the first automatic circuit breakers. Ever since, ABL has been developing and producing socket combinations and system components for trade, construction and industry pursuant to international standards. ABL is not only the market leader in the field of mobile combinations for caravan supply systems but also a global player in the field of switching devices for electrical installations in buildings, switchgear manufacturing and mechanical engineering. Since 2011, the company has also been developing and producing charging poles for electric vehicles, offering a complete eMobility range. True to the motto "Technology Made in Germany" development, production and testing of all products takes place at the company's headquarters in Lauf an der Pegnitz.

Challenge

Since 2015 ABL has been supplying charging pole eMC2 for application in public charging stations. The new charging pole eMC3 complies with the German standard VDE-AR-N4101, applicable for the public area, which has been in force since 01 September 2016. eMC3 fulfils the requirements of class II of protection for public charging poles and provides the required meter backup fuses as well as adapters for electronic domestic supply meters. Permanent availability is crucial for charging stations. Charging stations and poles are meanwhile in operation across the globe and are at risk of lightning strikes and overvoltage. More than one million lightning events are registered every year in Germany alone and the resulting surges far exceed the dielectric strength of the electronic components installed in the charging poles. Also, voltage peaks in the supply system, e.g., due to switching operations or earth faults and short-circuits pose a realistic threat. They result in the failure of electronic components and, in turn, a defective charging pole. Surges arising during the charging process itself might even damage the electric vehicle. As this would entail severe economic consequences and in order to minimise maintenance and repair costs, an effective and reliable lightning and overvoltage protection concept is required.

Solution: DEHNshield Combined arrester – Type 1

As the charging poles eMC2 and eMC3 are installed in a variety of locations with the most diverse risk potentials, a universal solution is needed which provides permanent, reliable lightning and surge protection anywhere and everywhere. In this case ABL relies on the compact and space saving Type 1 combined arrester DEHNshield. It is a spark-gap-based device featuring the wave breaker function which reduces the lightning impulse current energy to such an extent that even the most sensitive electronic components in the charging poles remain undamaged. This really protects the terminal equipment, both the charging pole and the vehicle! It also already fulfils the requirements of the future IEC 60364-7-722. A revised version stipulating the necessity for surge protection in publicly accessible charging facilities will be published in 2019.



Benefits of DEHNshield

- ➔ Type 1 – Spark-gap-based combined arrester
- ➔ Maintenance free
- ➔ Laboratory-tested protective effect
- ➔ Quality product, made in Germany
- ➔ VDE certified
- ➔ Fulfils future requirements according to IEC 60364-7-722