



Flexibility thanks to the HVI[®] system – Isolated air-termination system of a lightning protection system with high-voltage-resistant conductor

The isolated air-termination systems and the HVI[®] system from DEHN are individually adaptable solutions for upward compatible lightning protection systems. Air-termination mast heights up to 7.5 m ensure large protected zones which may extend over the entire roof surface. If such a lightning protection system is dimensioned correctly, no additional lightning protection measures must be taken for subsequently installed roof-mounted structures. The risk of uncontrolled flashover from air-termination systems and down conductors to earthed metal building installations is prevented by conducting the lightning current through a patented high-voltage-resistant insulated HVI[®] Conductor, the latest continuation of lightning protection according to Benjamin Franklin. The isolated HVI[®] system is installed according to the wind load to be expected and can thus be individually tailored to specific requirements.

Isolated HVI[®] systems consist of an insulated supporting tube in combination with a tripod or four-legged frame and a HVI[®] Conductor. When selecting a high-voltage-resistant insulated conductor, the separation distance is decisive. Consequently, the new HVI[®] systems can be configured with either a HVI[®] power Conductor or a HVI[®] Conductor. The HVI[®] power Conductor allows installers to maintain an equivalent separation distance (solid material) of ≤ 180 cm. This conductor is tested with I_{imp} of 200 kA (10/350 μ s) and suitable for use in classes of LPS I, II, III and IV. In contrast to the HVI[®] power Conductor, the HVI[®] Conductor is tested with I_{imp} of 150 kA (10/350 μ s) and is thus suited for classes of LPS II, III and IV. It allows installers to maintain an equivalent separation distance (solid material) of ≤ 150 cm.

The new tripod or four-legged frames with lateral conductor routing ensures easy and space-saving installation of the supporting tube and the HVI[®] power Conductor or a HVI[®] Conductor integrated in the supporting tube. The necessary connection to the equipotential bonding system, which ensures the functionality of the high-voltage-resistant insulated conductor, is made via the supporting tube and frame. To this end, the frame must be connected to the equipotential bonding system of the building.

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When installing an isolated HVI[®] system, the wind load plays a major role. For this type of air-termination system, not only the dimensioning of the material, but also the tilting moment is decisive. In this context, particularly the standing surface and the weight of the base are important. The HVI[®] system is designed according to the wind load requirements outlined in EN 1991-1-4 / NA (Eurocode 1 Part 1-4 / NA). DEHN provides comprehensive information on this topic.

Due to permanently changing building situations, particularly on the roof, lightning protection systems must be frequently adapted after a short period of time. An isolated HVI[®] system is a first-class isolated lightning protection system which ensures flexibility for the future.

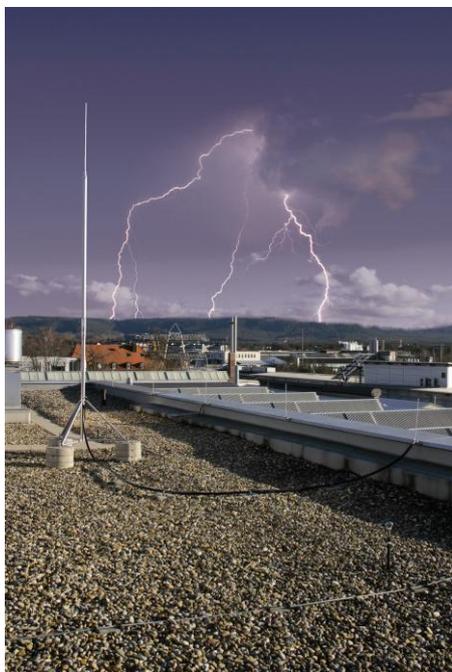


Photo: HVI[®] system – Isolated air-termination system of a lightning protection system with high-voltage-resistant insulated conductor

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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