



Periodic inspection of portable earthing and short-circuiting devices from DEHN

An important measure when working on electrical installations according to the five safety rules is the fourth rule "Carry out earthing and short-circuiting". This ensures that the installation is dead while work is carried out. However, every protection measure is only as safe as the tools used.

Reduced cable cross-sections of portable earthing and short-circuiting devices (EaS devices) resulting from copper corrosion and breakage of conductor strands or increased resistances in the connections may have fatal consequences when earthing and short-circuiting devices are subjected to short-circuit currents. Therefore, portable EaS devices must be tested prior to each use and at regular intervals. So far, only a visual inspection made economic sense. A new procedure is now available which provides reliable information on the condition of the portable EaS device based on static and dynamic measurements of the ohmic resistance. DEHN offers this improved test for portable EaS devices on the customers' premises or in DEHN's in-house test center to further increase user safety.

An earthing and short-circuiting device is tested in three steps and the resistance values are compared with theoretically and experimentally determined limit values. The first step is the visual inspection for visible signs of damage. A static test is performed in a second step, i.e. the absolute resistance value is measured at the stationary earthing and short-circuiting device. Step three includes the dynamic test, i.e. the measurement of the relative change in resistance at the moving earthing and short-circuiting device. The measurement of the resistance change value ΔR between the non-moving and the moving EaS device is a new approach which now allows to detect local damage such as breakage of conductor strands in the conductor cable. The new test setup consists of a special micro-ohmmeter, a rail structure and the relevant software. Practical testing over one and a half year has shown that numerous earthing and short-circuiting devices tested

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during this period were invisibly damaged. This damage could not be found by means of visual inspection alone which clearly shows that it is mandatory to use the new procedures to test used EaS devices at regular intervals (e.g. every six years). For this purpose, DEHN offers periodic inspection of earthing and short-circuiting devices on site or in DEHN's in-house test center to further increase user safety. If you have any questions, please do not hesitate to contact Mrs. Andrea Ilsitz; andrea.ilsitz@dehn.de.

Safety devices and equipment from DEHN are manufactured and tested in line with the requirements of applicable standards. In addition to maintenance tests on earthing and short-circuiting devices, DEHN is also a reliable partner for maintenance tests on voltage detectors, switching sticks, fuse tongs, insulating sticks and earthing sticks.



Picture: Inspection of an earthing and short-circuiting device

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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