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Busbar Systems and IEC 61439 Standards

Busbars systems, or busbar supports are essentially heavy conductors, typically made of copper, which carry and distribute powerful electric currents to components that consume electrical power throughout an assembly.

Busbars are not only easy to install (certainly compared to cabling), they also play a major role in the design and safe operation of a switchgear and controlgear assembly.

The recent introduction of the IEC 61439 switchgear and control standards has significant implications for the design and performance of the copper busbar system. It's an area which engineers need to appreciate, not least because the new testing regime and the requirement for compliance has changed the way we think about the selection of the busbar system.

One of the most important requirements of any switchgear power distribution system is to carry fault currents (short circuits) safely until a protection device, namely the fuse or the moulded case circuit breaker, interrupts the fault.

This capability, and the product specification, is the subject of testing which is covered by the IEC 61439 standard and which provides vital information for building a safe assembly.

Busbar testing, in fact, was revolutionised following the introduction of the standard which came into force in November 2014. It continued a determination across the sector to harmonise the low voltage industry through the creation of one standard which provided protection for both personnel and switchgear.

IEC 61439 requires busbar systems to be tested – by their manufacturers - within enclosures rather than (as previously happened) as a standalone arrangement. This is a step forward for the industry, providing access for system engineers to data delivered in situ which offered both a more realistic assessment and more accurate and reliable data than before.

Further information at www.rittal.co.uk and www.friedhelm-loh-group.com or on twitter @rittal_ltd.

Notes: Rittal, headquartered in Herborn, Hessen, Germany, is a leading global provider of solutions for industrial enclosures, power distribution, climate control and IT infrastructure, as well as software and services. Systems made by Rittal are deployed across a variety of industrial and IT applications, including vertical sectors such as the transport industry, power generation, mechanical and plant engineering, IT and telecommunications. Rittal is active worldwide with 10,000 employees and 58 subsidiaries.

Its broad product range includes infrastructure solutions for modular and energy-efficient data centres with innovative concepts for the security of physical data and systems. Leading software providers Eplan and Cideon

complement the value chain, providing interdisciplinary engineering solutions, while Rittal Automation Systems offers automation systems for switchgear construction.

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