Press release

Rittal Limited

Date of issue: March 2, 2016

Electrical Safety Assured with Rittal's TS 8 Baying System

Safety and security are two high priorities for installers and users of electrical switchgear.

To prevent personal injury or property damage as a result of issues such as fault currents (short circuits), a number of industry standards and regulations have to be followed.

These also cover the potential equalisation between all the metallic parts of an enclosure.

The TS 8 baying system from Rittal is a great example of how safety can be built-in through automatic potential equalisation without necessarily having to separately earth each individual panel.

The earthing of metallic parts on electrical systems for safety reasons is prescribed virtually everywhere. This applies to all electrical equipment and units – from simple lamps to low voltage distribution systems.

The reason is quite clear: if a problem occurs (for example, an enclosure becomes live) it has the potential to cause serious harm.

In low voltage switchgear, all the metal frame and enclosure parts endangered by stray voltage have to be earthed.

Attaching the earthing straps

To this end, earthing straps of copper wire are usually provided. These are flexible and therefore can safely contact moving parts (such as doors) to the enclosure.

In enclosures, earthing straps typically also have to be connected to the frames, the side panels, the enclosure roof and any other panels.

Once all the earthing straps have been correctly fitted, there is an equalisation of potential, and all the enclosure component can be earthed via the protective conductor of the voltage supply.

The earthing straps have to be attached to enclosures by hand during their assembly, creating the potential for human error. Should a strap be forgotten, the finished switchgear will still be able to function despite the danger it might pose to people in the event of a fault.

Potential equalisation even without an earthing strip

To help limit this risk, Rittal has developed an effective solution with the TS 8 bayed enclosure system.

During the assembly phase, the side panels, enclosure roof, rear panel and gland plates are automatically connected to the frame conductively. This means potential equalisation can be achieved without necessarily having to connect these parts with earthing straps (although the final decision as to whether to leave earthing strips out completely is up to the user).

The solution is implemented using special claws or washers which press through the electrically non-conductive surface coating of the panels during assem-bly, to achieve a reliable contact. It means that all the flat panels are electrically connected to the frame, so that – in many applications - earthing straps are no longer needed. Instead, the earthing strap only needs to be attached to the enclosure door.

The contact resistance between the panels and the enclosure frame is less than 0.1 Ω, the value demanded by the DIN EN 62208 empty enclosures standard.

Simplified installation and greater safety

This automatic potential equalisation reduces the amount of material needed and enables easier assembly, simply because the time-consuming attachment of up to seven earthing straps per enclosure is no longer necessary.

What's more, it is also easier to disassemble and re-assemble individual panels because the earthing straps do not have to be removed and re-attached each time.

Users must consider, during a risk assessment, whether the design measure of automatic potential compensation is sufficient or whether separate earthing straps are needed to meet the technical safety requirements.

Benefits at a glance
Automatic potential equalisation with the Rittal TS 8 baying system offers the following benefits:

• It saves mounting as many as seven earthing straps
• It simplifies the assembly and disassembly of all the panels

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

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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.

Founded in Herborn in 1961 and still run by its owner, Rittal is the largest company in the Friedhelm Loh Group. The Friedhelm Loh Group operates worldwide with 18 production sites and 78 international subsidiaries. The entire group employs more than 11,500 people and generated revenues of around €2.2 billion in 2014.

For the seventh time in succession, the family business has won the accolade “Top German Employer” in 2015.

Further information can be found at www.rittal.com and www.friedhelm-loh-group.com.