

Robust and flexible approach for LV switchgear enclosure

Enclosures play a vital role in protecting switchgear from damage, as well as ensuring the safety of people nearby. Combining these aspects with a flexible, modular system that can be customised appropriately creates an enclosure layout that's a best fit for switchgear protection needs.

Chris Lloyd, Managing Director of Spelsberg UK, discusses the key considerations for specifying an enclosure for low voltage switchgear.

When housing low voltage switchgear the fundamental requirement is protection of the electrical system to keep it running, whatever the environmental conditions it faces. Whether for outdoor use or harsh indoor industrial settings, an IP rating sufficiently high to prevent ingress, combined with IK protection against impacts, are prerequisite enclosure requirements. So too, protecting operatives or the public from harm, which will typically be achieved with IEC Protection Class II.

Once these imperatives are met, creating an enclosure that fits switchgear protection requirements amongst situational design constraints is the next challenge. While some facilities prefer steel enclosures, the difficulty in creating a flexible, modular system in steel often results in an enclosure that is larger than required. Polycarbonate is a preferable alternative, providing high durability and design flexibility, allowing a modular approach where smaller enclosures fit together to protect a more precise area. Lighter than steel, polycarbonate also enables easier installation, especially for installing at height or in more complex settings.

While the external structure of the housing has to protect against ingress and impact, a common requirement of LV switchgear design is to segregate the architecture within the enclosure and provide isolated protection. To fit this need, the enclosure has to be modular with interconnected housings that can be easily designed and quickly assembled together, often without making additional modifications on-site.

The modular approach taken by Spelsberg's GTi enclosure features removable flange panels that can be rapidly locked into place to isolate areas of the switchgear network. Alternatively, they can be easily removed to allow connectivity of wiring and components. The enclosures and panels are flush-fit, leaving no penetrative gaps and affording maximum protection. Modularity and simple connectivity of enclosure walls also enable fast, easy expansion of the switchgear circuit if required at a later date. Spelsberg's service helps engineers create the most effective structure according to the specification, reducing design time and ensuring that the required protection is achieved.

With various size enclosures in widths up to 320 mm and length up to 640 mm, GTi housings can be fully interlinked and connected together with one connector for all sizes of enclosure. This gives a high level of flexibility to protect a switchgear layout with the most effective design.

The enclosures are also available with pre-assembled fixtures such as bus bars and clamping points for distribution boards, improving the ease of installation. Fuse and switch housings are also provided by the Spelsberg AKi, giving the same high level of protection and complete with fittings such as fuse load circuit breakers that save time in installation. For outdoor applications, built-in protection against lightning, with special screws for pressure balance, makes the installer's task easier.

While the enclosures have been developed for ease and flexibility in switchgear design and installation, further customisation can be provided by Spelsberg UK. Common requirements include CNC machining of cable entries and disconnects, or cut-outs to enable specific component installation. Fully customised enclosures designed to house and protect specific switchgear configurations can also be provided and the UK service means that a project can be completed and delivered direct to site within days.

About Spelsberg

Spelsberg is one of the largest manufacturers of electrical enclosures in the world. With over 4,000 enclosures available as standard and further customisation possible, it offers solutions for almost any application.

With the largest supply of non-metallic enclosures, ex-stock in the UK, its products are often available for delivery within 24 hours; customisation is possible on any product, including bespoke entries, engraved corporate logos or fitted terminals, within 48 hours. Products can be ordered direct from Spelsberg or from most leading supply specialists including RS, Rapid, Farnell and CPC.

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