

Modern ways to save time when ordering medium voltage equipment

Guide for panel builders

by Leandro Costa and Mickael Sagnes

Executive summary

In today's fast and connected environment, panel builders need ways to be more flexible, more productive, with better service from their suppliers and partners. Modern ways to solve these issues are now available – digital tools, apps, or new features directly embedded in the product design. The purpose of this paper is to discover how panel builders looking for medium voltage equipment can now save time at every step of the process: From selection, quotation and delivery to customization, installation, operation and support.

Introduction

Building business is complex: Panel builders face challenges in daily operations with budget constraints, time constraints and challenges around manufacturing efficiency and international coverage, not to mention the various international and national standards to comply with.

In this paper, we will share ideas about how panel builders might better manage in the face of competition.

To start, here is a short reminder of the main components and functions of medium voltage switchgear.

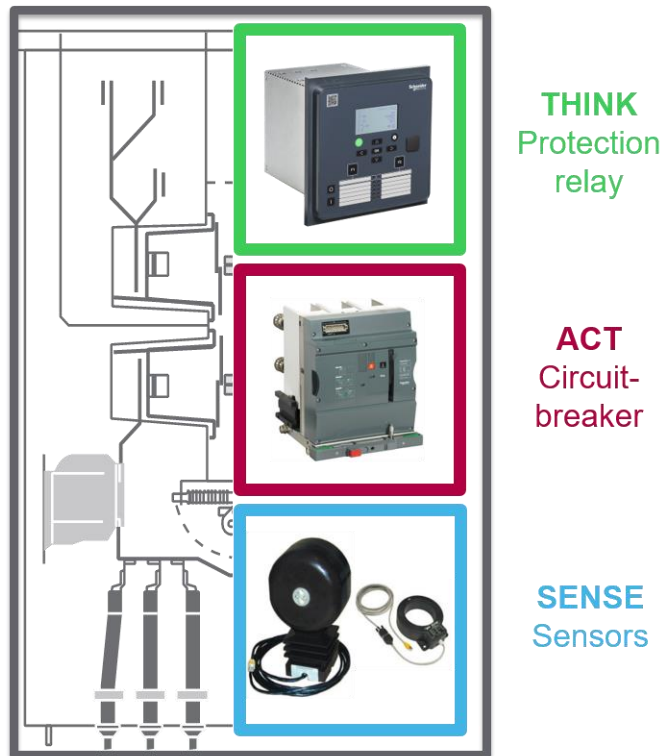
Figure 1

Medium voltage switchgear main components

Medium voltage switchgear

The protection relay, the circuit breaker, and the sensors are key elements of a panel:

- Sensors gather measurements from the power lines
- The protection relay analyzes these measurements and send a signal to trip the circuit-breaker
- The circuit breaker acts to protect the line, transformer, motor, generator... the equipment at the end.



The advice provided in this paper allows panel builders to save time. It rests on a combination of digital tools but also on innovations directly linked to circuit-breakers and protection relays.

These innovations, embedded in components, make the step forward in terms of bringing simplicity, efficiency and time-saving to panel builders' daily operation.

The below recommendations for helping panel builders save time follow the main steps of the panel building life cycle: selection, quotation and delivery, customization, installation, commissioning and testing, hand-over and support.

Selection

Easy selection

Medium voltage manufacturers have developed powerful websites that allow panel builders to select products more easily than with paper catalogs. These online improvements now make it possible to have a quick, efficient and intuitive access to the desired information or asset:

- Product selection easily refined with filters and parameter choices
- Clear documentation and technical information easily available
- Real-time updated product information
- Quick side-by-side comparison of two similar products

Finally, the development of 3D applications allows panel builders to visualize the products in a 3D environment with augmented reality design features. Computer-aided design (CAD) and building information modeling (BIM) also help panel builders to save time and secure switchboards design.

Quotation and delivery

Simple ordering

The digital ecosystems of manufacturers have expanded in the last few years with digital all-in-one configuration and quotation tools. They allow fast ordering, with secure and immediate access (24/7). Concretely, panel builders can, at any time:

- Do a quick online configuration
- Get real-time information like price and availability
- Receive immediately a precise quotation with a fixed delivery date
- Automatically generate an order confirmation

The time saved is considerable compared to the traditional way (calling a sales representative, waiting for a quotation...). The main benefit lies in the fact that panel builders now know exactly when they will receive the product – instead of waiting weeks for product production without any news. They can secure their panel building project.

Fast delivery

Shortening delivery time is a financial benefit for panel builders. With a reliable short delivery time, they don't need to stock products, waiting for eventual sale. It's why, an important feature of a modern manufacturer is worldwide stock of those key components, to help limit panel builders WIP costs.

A short delivery time allows flexibility in panel building projects. It's the case when panel builders have to manage last minute changes from customers in terms of specification. With flexible products available in manufacturer stock centers, delivery can be reduced to as little as five days.

Panel builders must therefore choose products carefully and use flexible, high volume, on-the-shelf products in order to capitalize on the benefits of manufacturer stock centers.

Customization

Easy and quick customization

To face the last-minute changes caused by changes to customer requirements, some manufacturers are developing a new business model for products: customization.

Circuit breakers are a great example of how a customizable product can significantly benefit a panel builder. With customizable circuit breakers, panel builders can order a kit: they receive a circuit-breaker, accessories (such as racking trolley, arms, clusters...) and assembly instructions. With these kits, panel builders have all the necessary components and skills to adapt their standard circuit breakers with ease and flexibility, according to their customer needs. That means that even if there are changes at a late stage, the panel-building project will be delivered on-time. What's more, those standardized circuit breakers are the ones available on-the-shelf with fast delivery, a win-win situation.

Installation, commissioning, testing

Smart features and digital tools

Traditionally, panel builders must build their intended switchboards, install the circuit breakers before installing and configuring the protection relay. It is a long and critical path with a risk of configuration mistakes at the end.

With modern products, much of this critical path can be made faster with a careful choice of components. For example, using devices with detachable connectors means that the protection relay configuration process can be done in parallel to cubicle assembly, or using circuit breakers that can be customized by the panel builder themselves.

Other new innovations such as virtual injection testing and assisted configuration mean that complex configurations can be done in a simple way and easily tested along the way. Combining these components together as a final step then reduces the risk of costly errors and improves the overall performance and safety of the installation.

This complete digital ecosystem created by manufacturers is useful for maintenance and, with smart applications, for allowing remote operation and power restoration. Even display of the protection relay HMI on the phone screen is possible.

Hand-over and support

Online helpful documentation

In our connected world, the use of QR codes on the front face of products now allows panel builders to use smart applications to quickly find answers to Frequently Asked Questions as well as documentation.

Manufacturers can also provide an online document repository related to the product. Such a place is ideal for exchanging critical information about the equipment, such as test reports, certificates or maintenance information. On a secure cloud, it can also allow panel builders to contribute to efficiency, allowing the exchange of schematics, reports and data such as installed serial numbers. Documents on the repository can be accessible by several persons, which is very practical to share any information.

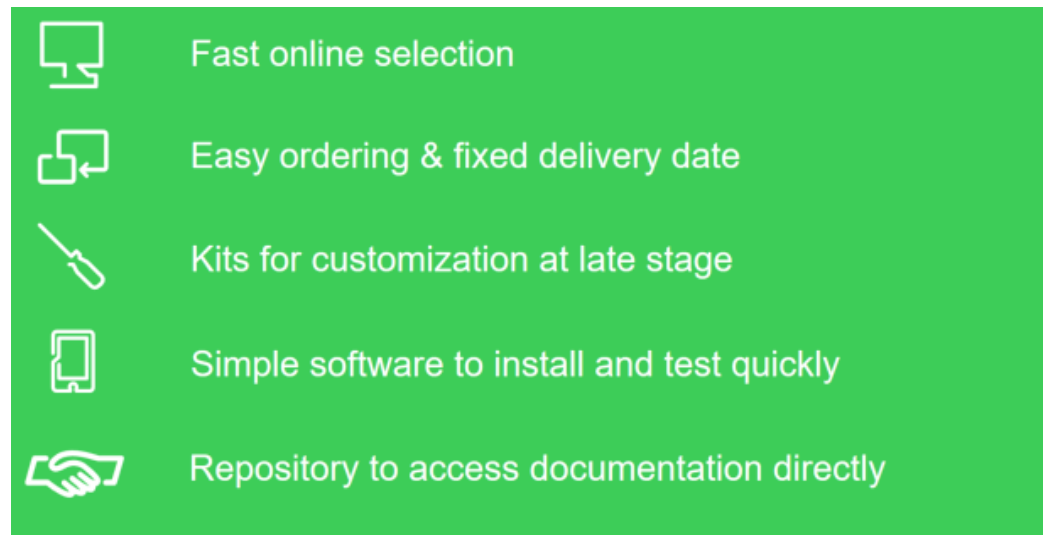
Conclusion

Efficiency is ever more becoming the manufacturers motto for helping their partners to optimize their time.

Panel builders can now make their life easier with innovative manufacturers' solutions: Online selection and ordering, delivery with fixed date, last minute customization, easy testing and installation software as well helpful documentation with secured cloud storage.

Figure 2

How to save time at every step of your panel building project



The choice of products' features (protection relays with detachable connectors or customizable circuit-breaker) is also key to accelerate panel building projects.

The combination of these elements allows panel builders to be more productive. They make the most of their efficiency to become more profitable and improve customer satisfaction.

About the author

Leandro Costa is leading the MV components business within the Energy Business department of Schneider Electric. He's been supporting several marketing roles, mainly around offer management, business development and product launches, in Brazil and globally, inside energy business since 2008. He holds an Electrical Engineering Bachelor's degree from UNISAL university in Brazil.

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