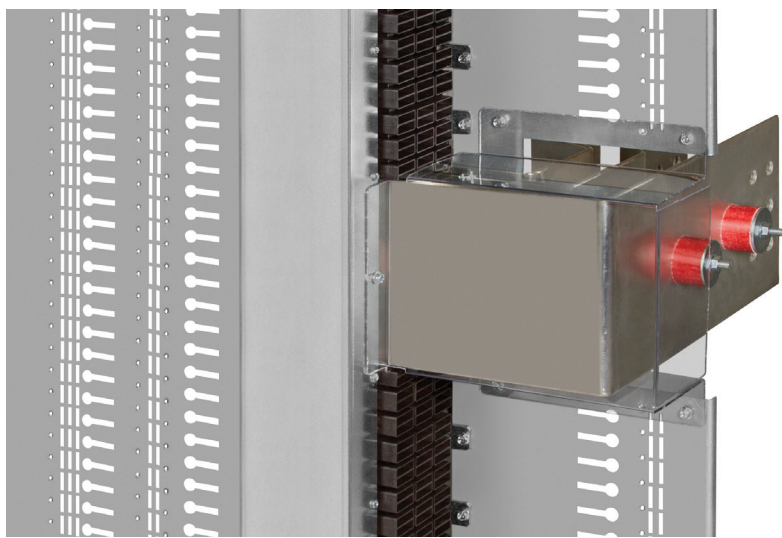


# The high cost of outdated panelboard and switchboard designs



Faced with tough competition, panel makers constantly search for ways to shave the price of their panels. That often begins by shopping for components based primarily on price. When it comes to panelboards, though, those low-cost products often end up creating a more expensive panel.

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A friend of mine was talking about a return to his childhood hobby. As a teenager, he was heavily into model rockets. Now, as a grandfather, he thought his grandsons would enjoy building the rockets, shooting them into the sky, and chasing them down as they parachuted back to the ground.

But in the 40 years since he last bought a rocket, he discovered some new acronyms relating to rocket design. Back in the day, a rocket kit consisted of a cardboard tube, pre-cut balsa fins, and other rough components that had to be precisely and sturdily assembled. Today, instead, you can buy an “ARF” kit. This odd-sounding acronym means almost ready to fly. Rockets built using ARF kits are ready for launch in minutes instead of hours or days, and are much less prone to construction-related disasters like fins or other components falling off in flight.

Panel builders can realize some of the same kinds of benefits by selecting interiors designed to both speed up assembly and reduce risk in installation. Generally speaking, there are two approaches to panelboard and switchboard design. The low-end, strap-based design which relies on strap kits to install

breakers and the high-end approach based on a plug-in design. The question is whether the latter truly is more expensive.

Strap kits represent a simple but slow, and therefore expensive, method to install breakers. Each breaker requires a separate screw connection for each phase on each side on the busbar and the breaker. Not only must these connections be made, but they have to be torqued to the correct values. Poor or incorrect connections can mean reliability problems or – in a worst-case scenario – dangerous, costly, and sometimes deadly arc faults. Better-designed interiors offer a plug-in, self-supporting breaker design with a single screw holding the breaker in position.

There’s another significant way the “more-expensive” panelboard/switchboard can actually provide cost savings. Selecting UL 67 and UR 891 listed interiors reduces the need for additional UL testing. Because they’ve already been tested and approved, panel design time, assembly, and of course cost, can all be reduced.

Depending on your choice of panelboard/switchboard interior provider, there's a third potential cost savings. Each of your panels is likely a custom job, but that doesn't mean you need custom panelboards. Some providers offer a relatively small number of designs that are flexible enough to accommodate almost any panel-enclosure size. That makes it practical for you to inventory interiors so you have them on hand when needed, and can be confident they can be used in an upcoming project.

Relying on standardized interiors provides this final cost- and time-saving benefit: they minimize your engineering and design. Some providers even have CAD files available that you can incorporate directly into your designs. Using pre-designed interiors and related CAD files in your design work, can shave weeks off the delivery time to your customer and significantly reduce your inhouse design costs.

ABB's ReliaGear® SafeT™ interiors provide all of these savings, with two additional benefits. First is safety, thanks to the IP20 finger-safe design that prevents technicians from coming in contact with live busbars. Second is the reduced footprint, with the ability to fit over 30% more breakers in the panel compared to competitors' designs.

Price is often the first and always an important consideration when buying most panel components. Clearly, though, the initial savings realized from buying the lowest-cost components won't always result in the lowest total panel cost. It may make sense to reconsider your panelboard and switchboard design strategy, and not only reduce your costs but also provide your customers with safer, more reliable panelboards and switchboards, and deliver them with shorter lead times.