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< Electrification & Power

Stäubli

E-Mobility: Modular High-Performance Battery Systems



Safe and reliable assembly of the modular high-power battery systems

A Germany-based technology leader develops and produces an impressive range of innovative, modular high-performance battery systems for electric and hybrid utility vehicles. International vehicle manufacturers count on these reliable and scalable batteries.

Thanks to robust and compact Stäubli CombiTac connectors including custom pre-assembled cables, the innovative battery developer can guarantee safe, long-lasting operation for its customers' electric vehicles.

What was once a group of German technology students researching and developing solar energy is now an international market leader in the field of modular, high-performance lithium-ion battery systems for



utility vehicles. These innovative battery systems are used in electric and hybrid utility vehicles for passenger and freight transportation on roads, railways and waterways, as well as in industry. Some of the world's leading utility vehicle manufacturers integrate these cutting-edge battery systems in their design concepts.

Robust Connectors for High-Performance Batteries

This modular and flexible product portfolio stands out for its very high energy density and exceptional thermal management, allowing for compact and freely scalable design. Developing a high-performance, modular OEM battery system called for a highly powerful, robust and reliable pluggable connection solution that was also extremely safe and had the necessary certification for use in the automotive industry.

Custom Solutions for Absolute Safety

Stäubli worked jointly with the battery technology leader's engineers to configure a solution based on the modular Stäubli CombiTac system, flexible enough to support a 30% increase in the battery design's performance even without any design modifications. Stäubli also implemented the connection with



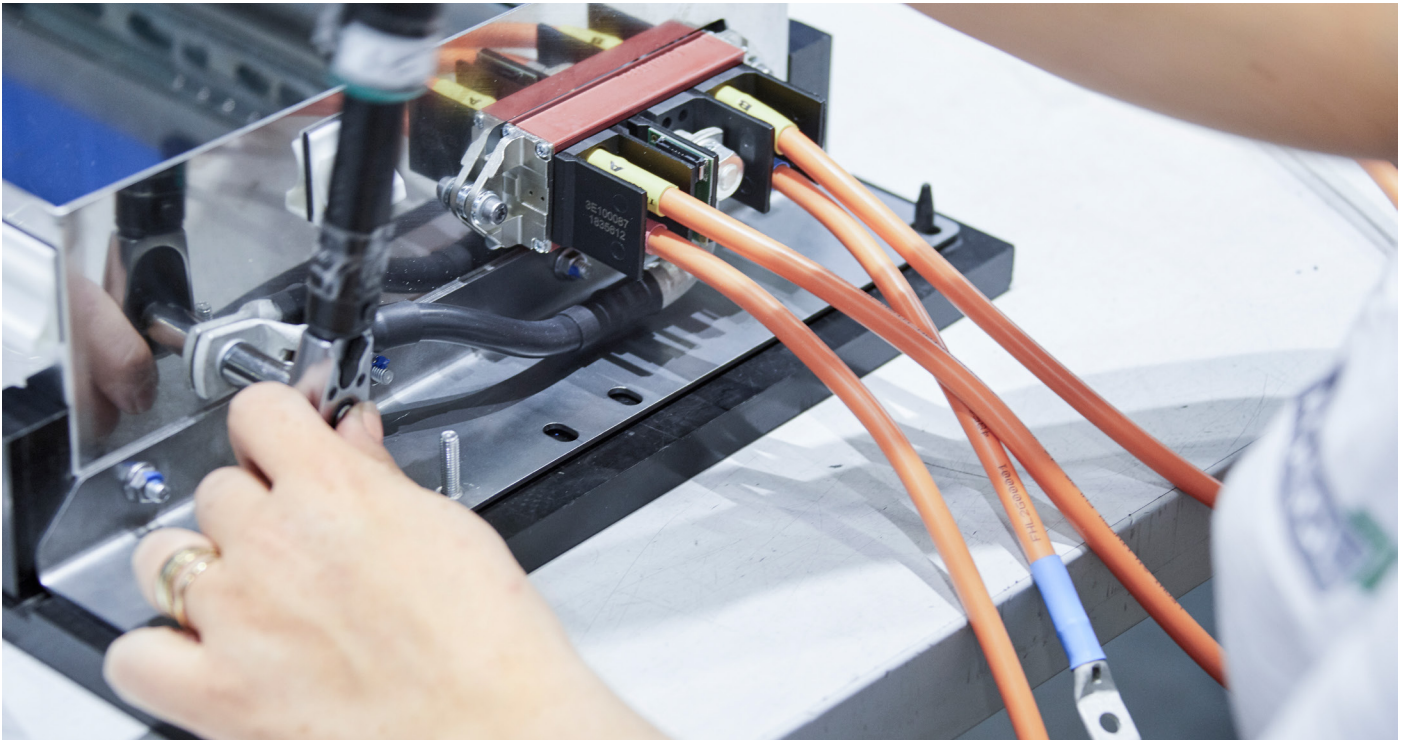
CombiTac connector system carries current and data signals

preassembled cables according to the specifications of the customer's OEM clientele.

These connections, which carry current as well as data signals between the individual battery modules and to the power electronics, allow for safe battery maintenance operations. Simply unplugging the power module from the battery enables technicians to work safely with no live voltage. Therefore, it's possible to



The modular battery elements are connected with the Stäubli CombiTac system



Customised and pre-assembled cables make quick and consistent installation easier

change fuses without the need for an electrician or additional safety staff. This solution ensures that there is absolutely no voltage at the power module.

The modular connections also ensure fast, safe connections during assembly of the individual battery layers. Thanks to its robust design, the high-quality CombiTac solution can even stand up to strong vibrations in continuous operation. At the customer's request, an additional circuit board for monitoring was built into the power electronics with the CAN bus as part of the safety technology. This is another area of Stäubli's expertise, making the solution even safer.

Technical Consultant as Partner

The Stäubli CombiTac connector system convinced the customer's engineers with its proven reliability and robustness. They also appreciated the Stäubli experts' flexibility and expertise in implementing the additional technical specifications and strict safety requirements of the international utility vehicle manufacturer. The user-specific cable solution allows for safe and efficient assembly of battery modules.

And for the customer's clientele, the use of Stäubli's safe connector solution in the high-performance battery systems guarantees continuous, long-lasting

electric vehicle operation and the highest level of safety for maintenance work.

Click or scan the QR code below to find out more about Stäubli



Winnijar Kauz

w.kauz@staubli.com

+41 61 306 55 55

staubli.com/electrical

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