

STÄUBLI

Compact Connectors for Secure Plug-in Systems in Railway Power Supply

Global climate change is elevating the importance of public transportation, increasing the demand for railway transport solutions.

With a growing number of passengers on trains, the need for compact, robust and reliable components that can meet the challenges of the railway industry is more crucial than ever. In this article, we introduce the innovative plug-in systems by Stäubli Electrical Connectors designed for railway power supply.

As rail passenger numbers continue to rise, there's less room available for components to accommodate travellers comfortably. Nevertheless, these components must remain compact and robust to meet stringent requirements. Stäubli has developed the EvoTrak family, which offers space-saving components tailored for the railway industry. These components are highly suitable for the railway sector due to their utilisation of plug-in connections instead of screw connections. These plug-in connections provide both security and time savings, ultimately reducing the total cost of ownership (TCO). In addition to the EvoTrak product line, Stäubli also offers fork plugs that enable insertion technology. The use of this insertion technology is highly space-efficient, particularly because there's limited room available for large and thick cables within subsystems. Thanks to insertion technology, secure and reliable connections can be established even in hard-to-reach areas.

Technical Strength

Stäubli's connection solutions are distinguished by their

high reliability and robustness. The tried and tested MULTILAM contact technology is the cornerstone of all Stäubli connectors. The MULTILAM technology ensures a durable connection between surfaces, maintaining a consistent contact resistance for enhanced reliability and safety under extreme conditions such as electrical stress, thermal fluctuations, mechanical robustness, temperature variations, vibrations and shocks.

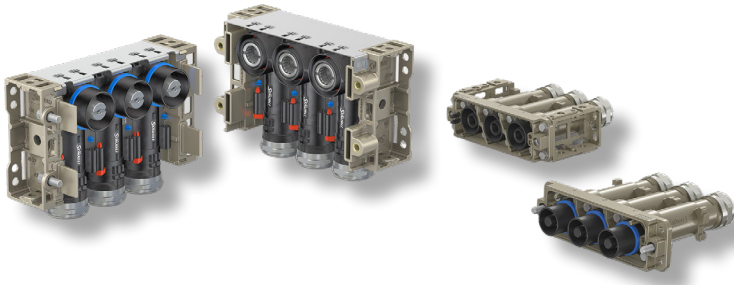
One Connector Philosophy for the Entire Traction Chain

Stäubli's modular connectors are adaptable to user requirements, offering solutions tailored to every specification. The EvoTrak family enables versatile and adaptable electrical connections between the main functions of a rail vehicle's electrical traction chain. The compact and flexible modular solutions, available in 1 to 4-pole configurations, meet all common standards and are approved for use on rolling stock.

The Modular Power Connector EvoTrak MPC provides a universal, multifunctional, space-saving and modular solution for various applications. With EvoTrak MPC and EvoTrak Lite, the Swiss connection specialist provides a flexible range of connection solutions for various applications in the railway industry. Here is an overview of the key specifications:

EvoTrak MPC for Subsystems

- 1 to 4 poles
- Up to 700 Amps and 3000V
- Straight, angled and panel connectors



plugs from Stäubli enable simple and flexible contact with power rails. Thanks to their double-sided design, they facilitate a quick and resilient connection between two power rails, replacing labour-intensive screw connections. As a result, they increase productivity and reduce assembly and service costs. Furthermore, they allow for a more compact construction of rack systems.

Features and Benefits of Fork Plugs

Compact, easy to maintain, safe and cost-effective, Stäubli's fork connectors offer essential qualities for reliable power supply:

- High current-carrying capacity
- Low contact heating
- High resistance to vibrations, shocks and oscillations
- High number of mating cycles
- Compensation for angular and axial misalignment

Stäubli's fork connectors are suitable for numerous areas in rail transportation:

- High-current rail connections
- Connectors between fixed and movable busbars
- High and low voltage, indoor or outdoor installations
- Connectors for power supply, energy storage, and batteries
- Connectors for plug-in technology
- Connectors for power electronics and inverters

A Reliable Technology Partner

Urban and intercity rail transport, whether for passengers or freight, is at the centre of many environmental and demographic challenges facing the world today. As a long-standing industry partner and key supplier in the international railway sector, Stäubli understands the challenges and expectations of its customers. Stäubli's products cover all applications and fluid types, from compressed air to hydraulics, cooling and electrical systems, as well as customised connection solutions. All solutions are designed to withstand the most demanding mechanical and climatic conditions, ensuring operational continuity, even under extreme weather conditions and mechanical stresses. Stäubli is a dependable technology partner for customers whenever secure and reliable connections are needed for innovative railway projects.

www.staubli.com

EvoTrak MPC for Intercar Connections

- Customisable to meet your requirements
- DCO dynamic cable options for free intercar connections
- Compact solutions for ease of handling and fast maintenance
- Various interface types

EvoTrak Lite for Batteries

- IP2X protection
- Metallic connectors
- Compact and lightweight solution

EvoTrak Lite for Traction Motors

- Up to 330 Amps and 1500V
- Metallic connectors
- Phase segregation for permanent magnet motors (PMM)
- Management of shielded cables
- 1 to 4 poles

Easy-to-Handle Fork Plugs for Power Supply

In railway power supply, connectors play a crucial role as interfaces to ensure secure and reliable power transmission. They are also essential in subsystems for transmitting data, signals and fluids. Whether it's body-to-bogie connections, interbody connections, brake systems or inverters, connectors must withstand all the harsh environments of rail transportation. Stäubli has decades of experience and expertise in this field, providing tailored solutions to meet specific needs. Fork



RAILWAY MODULAR CONNECTORS

EvoTrak – the real modularity

EvoTrak family

Simplifying and unifying your traction chain connections

Experience seamless connectivity across your entire traction chain with the EvoTrak family. Our compact and flexible modular solutions ensure a consistent connection philosophy.

Whether you require 1 to 4 poles, straight or angled parts to connect to panels or receptacles, EvoTrak is precisely configurable to meet your specific needs. Furthermore, EvoTrak not only meets current standards but also undergoes rigorous testing beyond railway requirements, ensuring proven reliability.

Trust Stäubli, your expert in railway connection solutions for over 30 years.

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