
Intralogistics 4.0:

Energy supply of shuttle systems

Customized conductor rail solution using MultiLine 0835 and MultiLine Charge.

In November 2018, Conductix-Wampfler, one of the world's leading manufacturers of systems for the transmission of energy and data to mobile machinery and equipment, is bringing movement to Intralogistics 4.0. The MultiLine 0835 conductor rail system ensures a continuous power supply for shuttle systems. The MultiLine 0835 *Charge* is used as the charging system.

New requirements for intralogistics

Due to their high dynamics, flexibility, and scalability, shuttle systems are the perfect answer to the new requirements of intralogistics. Lot sizes approaching "1", the demand for ever shorter delivery times, and maximum efficiency have resulted in operators of logistics systems increasingly replacing large and rigid solutions with scalable and flexible shuttle systems. Instead of full pallets, often only small containers or cartons have to be stored and moved. "Since a large number of lanes on several levels as well as lifts and elevators have to be supplied with low voltage and weak currents, the energy supply is a great challenge," explains Simon Dülffer, Global Market Manager Intralogistics at Conductix-Wampfler. This is because shuttles are constantly in motion in ideal operation. "This requires either continuous power supply at travel speeds of 4 m/s and above, or an energy storage device must be charged during the journey or at waiting positions in front of the lift", says Dülffer.

MultiLine 0835 conductor rail system

The MultiLine 0835 two-pole conductor rail system from Conductix-Wampfler is specifically designed for shuttle systems. "It provides a continuous supply of DC voltage up to 60 volts. The compact, multi-pole small conductor rail is designed in such a way that it can be integrated into the guide rail, while the assembly time on-site is significantly reduced thanks to its use of plug connectors," notes Dülffer. Special connector caps, which compensate for vertical mechanical tolerances of up to 5 mm at the transitions, also make it possible to drive over to a shuttle lifter. The existing conductor rail can also be

used for data communication under consideration of the special conditions, such as variable contact resistances.

MultiLine 0835 Charge: Conductor rail as charging station

"When changing lanes, shuttles also have to be able to move transversely. This is where energy storage devices show their advantages as intermediate energy buffers for crossing intersections," says Dülffer. With the highly dynamic MultiLine 0835 Charge charging system from Conductix-Wampfler, the conductor rail becomes a prefabricated charging station. Supercaps on the shuttles are charged during longitudinal or transverse travel without losing cycle time and thus throughput. Specially developed individual current collectors and traversing funnels enable fast, continuous, and low-wear traversal of the charging stations. The charging system allows significantly smaller dimensioning of the energy storage, which not only saves weight and costs, but also increases passive safety in the system. In case of maintenance, the shuttles quickly de-energize, eliminating the fire hazards caused by large lithium-ion batteries. "The solution combines the advantages of both worlds; the flexibility of an energy store with just-in-time supply through the conductor rail," concludes Dülffer.

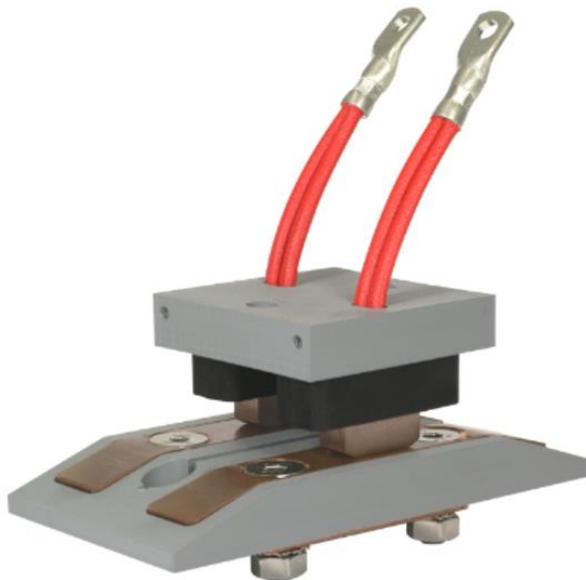
Photos:



Caption: MultiLine 0835 for continuous supply of shuttles, including level change via lifters.



Caption: MultiLine 0835 *Charge* – highly dynamic charging system for energy stores with pick-up guides and current collectors for millions of transfers.



Caption: Charging contact for the stationary charging of shuttles

Press Release



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