



Application Report

Compact Push-In relay sockets for modular railway vehicles

Partner Windhoff GmbH, Rheine
Area Railway technology

Railway technology

Wiring

Installation

Maintenance

Efficient control cabinet solutions for the MPV® VentuS®

Modern Windhoff vehicles such as the MPV® VentuS® require compact, flexible, and standards-compliant control cabinet solutions. ComatReleco relays are used to control auxiliary equipment such as heaters, windscreen wipers, solenoid valves, fans, and small motors. Conventional relay sockets often require significant installation space, extensive wiring, and result in longer maintenance times. The S7-PIR and S9-PIR Push-In relay sockets provide a space-saving and railway-certified alternative.

More space through vertical integration

The Push-In sockets feature a vertical arrangement of terminal connections, with each contact provided in duplicate. This design makes optimal use of the available control cabinet space while reducing the required mounting area.

With a width of only 10.5 to 17.5 mm, the sockets offer space savings of up to 25% compared to conventional solutions on the market. This creates valuable reserves for future expansions or additional vehicle functions.

Fast and secure wiring

Push-In technology ensures vibration-resistant wiring without the need to retighten connections. It supports solid wires as well as stranded conductors with or without ferrules in cross-sections ranging from 0.34 to 2.5 mm².

Each terminal provides two independent connection points, allowing loopthrough wiring and potential distribution without the need for additional terminal blocks.

Reduced wiring effort with standardized A2 bridges

The same A2 potential bridge fits all relay sockets within the Push-In family. This allows potentials to be



S7-PIR relay sockets installed in a Windhoff control cabinet

distributed directly across the sockets, eliminating numerous individual wiring connections. Standardized 2-pole and 4-pole potential bridges are also available for main power circuits.

This reduces component variety, assembly effort, and inventory requirements. At the same time, cable density within wiring ducts is reduced, creating additional space for future expansions. The cleaner wiring layout also improves serviceability and supports a compact, standardized control cabinet architecture.

Optimized labeling and maintenance

The integrated holder for 11 mm marking strips enables clear and permanent identification of relays and circuits. This simplifies commissioning, troubleshooting, and maintenance throughout the vehicle's entire service life.

Relays can be replaced quickly during servicing. Integrated test openings allow measurements to be performed

Partner

«Windhoff Bahn- und Anlagentechnik GmbH» (Rheine) has been a global leader in railway and infrastructure technology for more than 135 years. The company is renowned for its modular rail vehicles such as the MPV® VentuS®, as well as for railway workshops, shunting technology, and track construction equipment.



ComatReleco Products in use

- S7-PIR & S9-PIR – Push-In relay sockets for slim control cabinets
- RIC20-110-SR / RIC20-200-SR/DC24V RIC-railway contactor

directly at the socket without disconnecting the wiring. The OT-PI tool additionally enables multiple Push-In connections to be released simultaneously, further reducing maintenance time. Color-coded operating levers also facilitate the quick identification of different control voltages.

Built-In railway certification

The PIR sockets comply with the requirements of EN 50155, EN 45545-2, and EN 60664-1 and have been specifically designed for railway applications. As a result, they can be integrated into modern rail vehicle concepts without additional certification effort.



RIC railway contactor for controlling motor control relays in various application

Conclusion

The S7-PIR and S9-PIR Push-In relay sockets combine high packing density, reduced wiring requirements, standardized A2 bridges, integrated labeling options, and excellent serviceability in a railway-certified solution.

For the MPV® VentuS®, they provide the foundation for compact, cost-effective, and future-proof control cabinet concepts with lower installation and maintenance effort. The compact RIC railway contactor ideally complements the use of the ComatReleco portfolio.