



Application Report

Safety and comfort in rail traffic

Partner Autech AG
Area Transport and traffic technology

Transport and traffic technology

Rail monitoring

Safety and security

Economic efficiency

Autech AG rail maintenance machines perform work that we hardly even know exists. This SME builds tailor-made machines for domestic and international customers and is considered a reference in the industry. Worthy of special mention are the rail maintenance machines, which are installed on either municipal vehicles or trucks approved for road use. This increases their flexibility for work assignments and significantly reduces the costs per job.

Maintenance work on rails

Why do rails in cities and agglomerations require care and maintenance? The care serves to reduce noise, because rail wear, damaged crossing points, potholes and ripple formation on the running surface create a substantial increase in noise emissions. Many residents are sensitised and want quieter trains. In addition to safety and accident prevention, economic aspects are also important. The majority of tracks in the city are laid



in the road space. The costs for renewal of worn tracks are several times higher than a railway with its own track beds with Vignole rails. The repair of wear and other damage using welding technology is less expensive and significantly extends the service life of the rails.

Measurement technology

The geometry is measured before rails are surface



welded and ground. The Autech Railmonitor measures and evaluates rail and points profiles. The device is also approved by the Deutsche Bahn DB Netz AG for their highest speed class, $v > 280$ km/h.

The condition of rails in standard gauge railways is periodically recorded with large measurement trains. Equivalent measuring devices can also be used for local transport and tram tracks.

With its measurement data, in combination with the welding and grinding machines, the Railmonitor guarantees a cost-effective rail maintenance process.

Grinding and welding

The most frequent work on the track is overlay welding for side wear in the curved rails. Very heavy rail wear occurs on tramways due to great lateral acceleration and a typical absence of cant. Wear can occur on both the running edge and the guard rail. 12 to 15 mm of travel-out can normally be accepted. If the travel-out is greater, overlay welding is required on the rail. Use of an automatic welder makes sense on longer track sections.

What is the connection between ComatReleco and Autech?

Hi-tech in a compact format! Like Autech in the rail grinding systems sector, ComatReleco is an experienced developer and manufacturer of industrial electronics. Among others in use from ComatReleco is the

Partner

Autech AG was founded in Auenstein in 1990 as a limited company for the manufacture of welding and grinding machines for rail systems. Currently, the company has 20 employees. It has developed into one of the leading manufacturers of two-way grinding vehicles for the maintenance of tram and metro networks in both domestic and international markets.

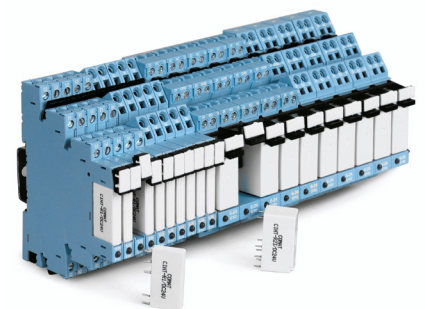
ComatReleco Products in use

- RIC20-xxx-R4A110V - Installation contactor
- CINT15 - Interface-Relay
- C4-A40 - Industrial Relay



new RIC20-xxx-R4A110V industrial contactor, which impresses due to its compact size of 17.5 mm and a switching current of 24 VDC/20A (utilisation category DC-5). It controls individual power groups as well as the fan motor for the diesel generator. The temperatures in the control cabinets on the vehicles often exceed 60° C. C4-A40 four-pole, plug-in power relays are used to control smaller power groups.

“The plug-in design of the industrial relays ensures a high level of serviceability. But so far, we seldom had to take advantage of this”, says Tobias Waldvogel, who is responsible for control equipment at Autech, with a smile. A member of the family of coupling relays, the CINT15, a single-pole interface relay with semiconductor technology, is also used. Its 2A/24VDC switching capacity protects the PLC outputs, which reach their limits due to the heavy loads and would be damaged without coupling relays. Space is limited on these mobile units. For this reason, ComatReleco's compact, innovative products are very popular.



CINT-15, the single-pole, semiconductor interface relay