



SUCCESS STORY



A close cooperation to withstand harsh environments

The Swiss Rhaetian Railway (RhB) transports thousands of people through the Swiss Alps, where climate conditions can be rough. To ensure comfort and security, signals and data are sent through the complete train.

The business needs

RhB needed a new and highly stable system of electrical connectors between the train compositions to ensure that signals can flow reliably during the train rides. Surroundings in the Swiss Alps can be harsh with possible temperature variations of up to 60° Celsius in a single ride. The new connection system has to feature 32 signal contacts and one data bus connector.

The challenge

The customer wanted to replace three outdated systems with only one that was state-of-the-art and would work in very tight space conditions. The solution needed

to be resistant to high temperature variations, vibrations and mechanical shocks, but also mud, break dust, wet with dew and salt spray. At that project phase, RhB had already decided on one particular connector - however, not being fully sufficient. Therefore, the new system had to fit on this existing connection plate on the composition and was required to also resist hammer strokes in the event of icing.

Industrial Connectors: tailor-made
Application: connector for harsh environment transmitting data and signals between the wagons

- Easy and safe operation
- Compact and space saving
- Integrating an existing connector platform
- Shock, vibration and pollution resistance

STÄUBLI



The solution

In close cooperation with RhB Stäubli Electrical Connectors helped to set up the technical specifications and then developed a completely new solution. The housing is very robust and provides a handle for easy opening. A sufficient overlap of the contact parts will ensure that even under severe vibration and temperature fluctuations the contact is never interrupted. With a 15° departure angle of the plug to the vertical, mechanical stress of the cable is significantly reduced and the connector operation is extremely simplified. The construction of the cover lid prevents an accumulation of snow on the inside of the protective cover. The insertion of the connector is supported by two longitudinal pins, which means that the connector cannot tilt.

The added-value provided

Based on the broad experience in railway technology there was a common under-

standing between RhB and Stäubli Electrical Connectors on how to approach the design of the new connection solution. The innovative product solution exceeded the customer expectations and even includes features that the customer had not thought of.

The robust handle simplifies the operations and accelerates the composing of the wagons. The custom specific design and development integrating an existing connector saved conversion costs substantially. The special design with the two longitudinal pins prevents that pins are bent or knocked back and thus makes the connection very reliable and durable.

Stäubli Electrical Connectors faced the challenges very flexibly and cooperatively. Due to the unique features of this solution also other Swiss railway operators rely on it.

Customer benefits

- Saving of conversion costs by tailor made solution
- Optimized operational costs through reliable and durable connection in harsh environment
- Timesaving coupling process of waggons due to innovative design

About Stäubli

Stäubli is a global mechatronics solution provider with three core activities: Connectors, Robotics and Textile. The international Group has a presence in 29 countries.

Stäubli Electrical Connectors is a specialist for advanced contact technology and technically mature solutions with a product portfolio ranging from miniature connectors up to high-power connectors for various industries.

www.staubli.com/electrical