

CASE STUDY PMA TRUST™ MODULAR SUPPORT SYSTEM FOR RAIL APPLICATION

## Swiss Federal Railways SBB rely on PMA TRUST™

Flexible installation and simple cable routing for inter-carriage connections

## PMA

A smart repair solution from ABB is helping customers in the rail sector save time and money.



Swiss Federal Railways (SBB) are the **backbone** of public transport in Switzerland

When carrying out maintenance on their articulated train sets, Swiss Federal Railways SBB (hereafter SBB) rely on ABB's PMA TRUST™ modular support system to reliably route cable protection solutions between the individual parts of the train.

SBB links millions of people with other people and goods. It connects people and places, regions, towns, cities and cantons – day by day and night by night. The company's 35,000 employees make SBB the backbone of public transport in Switzerland and ensure that customers arrive at their destinations safely, punctually and reliably.





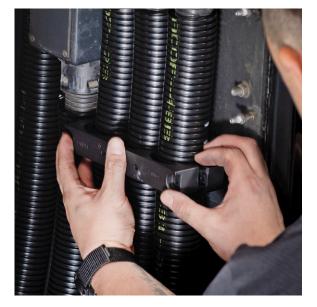
The trains inter-carriage cable

# connections

are exposed to severe dynamic stresses



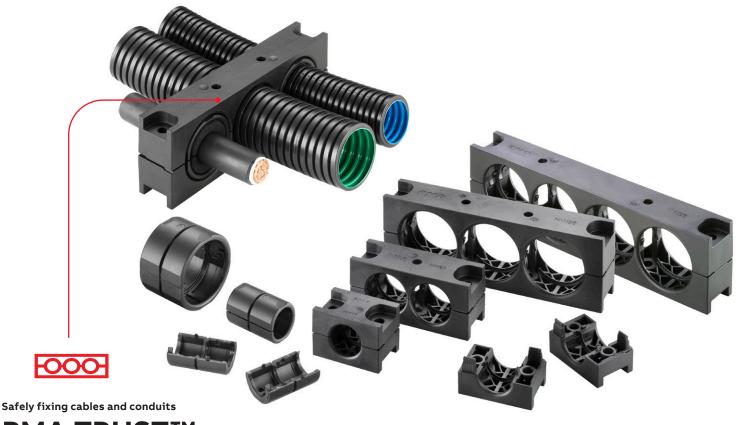
— The PMA TRUST™ modular support system delivers simple cable routing between intercarriage connections.



The nationwide network of repair shops is a key factor in the smooth operation of the SBB system. These repair shops play a crucial role by repairing and maintaining the trains, thus ensuring that rolling stock is always safe and ready for service. The SBB workshops in Winterthur, near Zurich, are part of this important network.

The rail workshops have wide-ranging responsibilities, including regular inspections, preventive maintenance and comprehensive overhauls. Such work is necessary to ensure not only that the trains meet SBB's high safety standards, but also that they provide the comfort and reliability that passengers expect.

SBB subsidiary THURBO uses Stadler Rail articulated units on regional services. The workshop team in Winterthur was looking for a long-term repair solution for the cable protection installations on the inter-carriage connections of approximately 100 of these train sets, which have been operating successfully on passenger services for many years now. The goal was to find a flexible, easy-to-install repair solution for the several hundred inter-carriage connections on the trains that could be implemented without disconnecting all the cable looms. Complete disassembly and reinstallation, including repinning the cables, would have involved a huge expense and time commitment, as well as increasing the risk of operational failures.

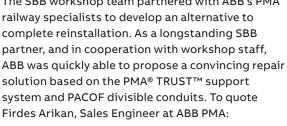


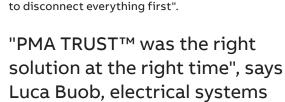
### PMA TRUST™

the modular support system from ABB

PMA's PACOF divisible conduits are the perfect retrofit and repair solution

The SBB workshop team partnered with ABB's PMA railway specialists to develop an alternative to complete reinstallation. As a longstanding SBB partner, and in cooperation with workshop staff, solution based on the PMA® TRUST™ support system and PACOF divisible conduits. To quote Firdes Arikan, Sales Engineer at ABB PMA:





engineer at SBB.

"Drawing on our decades of experience of railway

work, we proposed the PMA TRUST™ modular

support system and PACOF divisible conduits.

These high-quality products can be simply and

easily fitted over existing cabling without the need

"PMA TRUST™ is a lightweight, compact and highly resilient modular support system. PMA TRUST™ meets all the installation criteria for a flexible support system. Add to that the divisible PACOF conduits, which are the ideal solution for problemfree repairs and retrofits because they can be opened and resealed longitudinally at any time".

"PMA came to us at the right time with the right solution", says Luca Buob, electrical systems engineer at SBB. "As a result, the workload involved in repairing our trains is reasonable and we save a huge amount of time. Thanks to ABB's high-quality PMA products, we now have a long-term, durable repair solution for the high stresses such as heat, cold and torsion to which train inter-carriage connections are exposed. It was obviously a welcome bonus that PMA was able to immediately supply the large volumes we needed to start repair work".





The PMA® Cable
Protection range
from ABB is a
comprehensive
portfolio of conduits,
threaded fittings and
accessories for the
widest possible range of
markets and
applications.

### ABB and Swiss Federal Railways (SBB)

SBB and ABB PMA are linked by a long, trust-based partnership in rail engineering. ABB's PMA team supplies SBB with bespoke cable protection solutions that are matched to the needs of SBB and its fleet and which help meet technical requirements and safeguard safe operation. Solving important tasks like this together with its customers is one of the core areas of expertise which PMA is able to offer.

PMA® Cable Protection products from ABB can be used in an extremely wide range of applications. The list is virtually endless, including rail vehicles and infrastructure, industrial machines, electrical systems on ships, solar and wind energy generation installations, telecommunications, construction and medical equipment. Wherever cables are installed and exposed to mechanical stresses and environmental hazards. Today and tomorrow, our partners count on our product quality, technical support, service and deliver.

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