

PMA® cable protection solutions in operational use with Stadler Rail in Germany

Trams and rapid transit systems manufactured in Berlin by Stadler Rail for the global market



For 20 years, Stadler Rail in Berlin has been using ABB's PMA® cable protection solutions

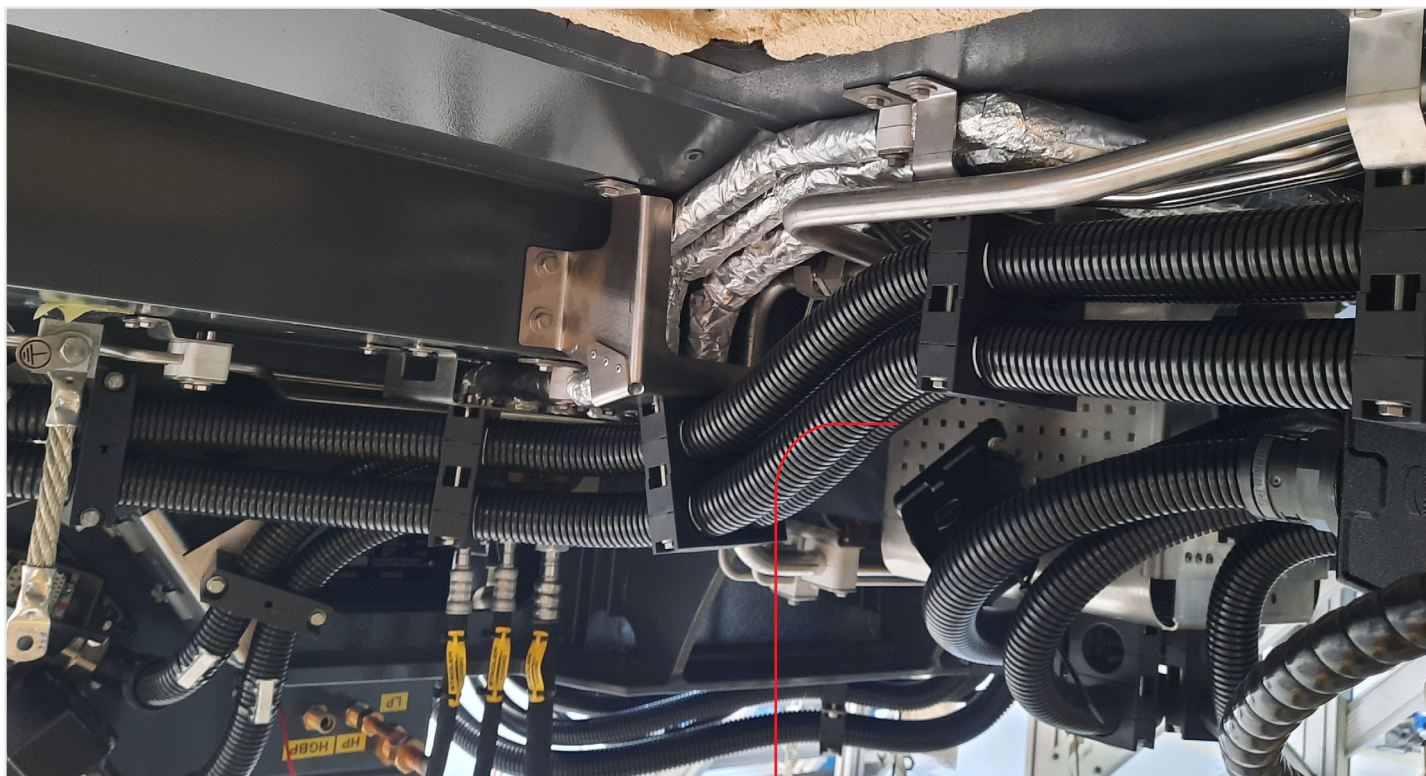
PMA® products have proven their dependability in railway construction projects around the world. That's why PMA® is a global market leader in the field of cable protection for the railway industry.



Equipped with PMA® cable protection:
commuter trains
from Stadler Rail for rail travel in urban areas

PMA® products contribute to the safe operation of trams, locomotives, freight cars, light trains and high-speed trains, Innumerable cables are fitted in bogies, mounted on drive motors, linked to a wide range of sensors, installed on roofs and in gangways between coaches in diverse rail vehicles; all need to be securely fastened and permanently protected. Extreme – and,





PMA® multilayer conduit and PMA TRUST™ modular support system provide

protection

even in the most adverse weather conditions

PMA TRUST™ systems represent the latest generation of modular support systems for conduits and cables. It redefines the state of technology for rail vehicle with its applications as regards ease of assembly, flexibility, weight, stability and compact design.

above all, contrasting – weather conditions, such as rain, snow, ice, hail, heat, dust and UV light, demand cable solutions of the highest quality.

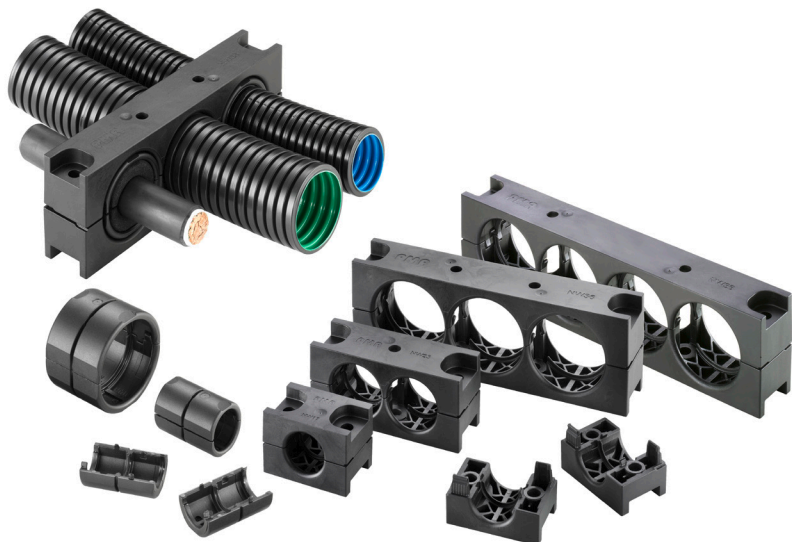
With the new X-series multilayer corrugated conduit technology, the high-density connection system PMAFIX Pro with IP69 classification, and the new PMA TRUST™ modular support system, PMA offers customers the opportunity for maximum safety and reliability for their electrical systems.

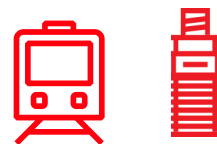
Moving parts such as couplings, bogies and gangways between coaches need the tightest possible bending radii but also the widest possible internal diameters. Excellent anti-friction characteristics are essential when feeding leads through conduits; great flexibility is required of systems supporting conduits and leads with a wide range of diameters.

For 20 years, Stadler Rail in Berlin has been using ABB's PMA cable protection solutions for these tasks. PMA products have demonstrated their reliability in rail projects globally. PMA's special rail engineering product lines offer a wide range of applications and provide protection for cables and leads in gangways between coaches, in couplings, bogies and in roof and underfloor applications. The range of applications is extensive. Thanks to their high quality, PMA products have for decades contributed to the safe operation of high-speed trains, rapid transit systems, regional trains, trams, locomotives and freight wagons. This is why Stadler Rail in Berlin chooses PMA as its supplier.

Stadler Rail trains are reliable and safe, and offer passengers comfort while travelling. State-of-the-art cable protection technology is constantly improving the performance and economic efficiency of its rail vehicles.

"An excellent collaborative working relationship, rapid response in the event of questions, competent analysis of problems and rapid assistance from PMA; these are all a huge help to us in our daily work. For example, converting from the PCS conduits we had previously used to the new innovative multilayer conduits was accomplished smoothly. The feedback from our assembly, operations, maintenance and servicing departments was entirely positive. As for





PMA® screw connections and

multilayer conduits

for maximum safety and high-quality
cable protection solutions

me, it felt like the usual, top quality PMA product with the additional advantage of a wear indicator,” stated Alexander Freier of Stadler Deutschland.

Heinz Seedorf, Sales Manager at ABB PMA Deutschland added, “These multilayer conduits conform to fire prevention standards EN45545-2 HL2 in accordance with Requirements Set R22 (XPCS) and EN 45545-2 HL3 in accordance with Requirements Set R22 (XPCSF); and as such they are suitable for use in rail vehicles of various operating and construction classes. This proven PMA multilayer technology allows materials possessing product characteristics for the rail sector to be combined in entirely new ways. As a leading manufacturer of high-quality cable protection systems since 1975, we know what our customers

need. All the items in our standard product range are easy to fit and maintain. We hold regular consultation meetings with a variety of designers and are open to subsequent suggestions or requests for modifications.”

“The positive experience is their great flexibility and their wealth of ideas for supplying us in good time despite short deadlines”

“PMA TRUST™ has given us the opportunity of jointly develop a new modular support system with Stadler Rail. We paid particular attention to areas such as small geometric dimensions (optimized to suit the installation space available), to leads and conduits being held securely, to ensuring maximum flexibility by using clamping adapters and half shells, to ease of assembly and to low weight. This has resulted in a comprehensive range of modular supports which we are now employing in our projects.”

Some 100 PMA TRUST™ supports in a wide variety of configurations are currently being installed in every coach in a Stadler Rail project.

“PMA’s use of 3D printed parts and special tools has been a great help. We were also really pleased that ABB’s PMA team was interested in learning how their products performed in actual practice. Their visit to our factory as their products were being fitted for the first time, plus the Q & A session with our fitters, was well received. The positive experience is their great flexibility and their wealth of ideas for supplying us in good time despite short deadlines,” said Alexander Freier of Stadler Deutschland.

— One example of how flexible the PMA TRUST™ modular support system can be employed: as a single, double or triple support with reducing half-shells for cables.





With its PMA® cable protection range, ABB provides a comprehensive portfolio of conduits, screw connections and accessories for varied markets and applications.

ABB PMA and Stadler GmbH Deutschland

Stadler GmbH in Germany and ABB's PMA cable protection are united in partnership in the field of railway technology for 20 years. Every year, Stadler Rail installs over 15,000 screw connections and close to 20,000 metres of conduits from PMA's product range.

Stadler Rail

Stadler Rail, whose workforce currently numbers approx. 13,000, has been constructing rail vehicles for 80 years. Customers know they can expect reliability, precision and first-class service. Stadler Deutschland GmbH was established in 2000 as a joint venture with Adtranz. In June 2001, Stadler assumed 100 per cent ownership of Stadler Deutschland GmbH. Stadler trains put quality on the right track – supported by skilled engineering which itself the highest standards for itself and satisfies its customers' requirements and individual needs.

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