



HIGH VOLTAGE CONNECTORS FOR RAILWAY SUBSTATIONS

S.E.A. TOURS - BORDEAUX

TE Connectivity's (TE) SIMABUS innovative new connectors were the key to a problem faced on a new high-speed rail line in France.

The Challenge

The South Europe Atlantic (S.E.A.) project is a completely new high speed rail line in France between Tours and Bordeaux. S.E.A. will enable passengers to connect Paris to Bordeaux within 2.05 hours.

For this project, a consortium of companies in charge of the design and construction of the line, including high voltage (HV) substations, required all connectors to be designed as per the French utility requirements.

TE Connectivity has historically been the supplier of choice for HV clamps and connectors to the French transmission and rail industries. TE supplied fully compliant products to the French utility specification but the specific layout design of the new railway traction substations required adaptive solutions such as busbars supported horizontally by post insulators. Consequently, the conventional connector solution did not fit to this specific configuration.



fig. 1

For compact design reasons, the horizontal busbar arrangement was the solution of choice for the customer's engineers. This new busbar arrangement required alternative connectivity solutions to the conventional outdoor substation applications.

Country:

France

Industry:

Railway

Key figures:

- 340 km of rail lines
- 6,785 connectors
- 14 traction substations 25 kV
- 2 HV substations 400 kV
- 2 HV substations 225 kV
- 10 months delivering more than 6700 connectors

The Solution

Since the installers already completed the civil engineering work, TE was asked to take up the double challenge of delivering an alternative connectivity solution within the initial timeframe.

Engineers and product managers of both companies worked proactively together to react in the most effective way. From the very first discussion, it was obvious that TE's innovative new SIMABUS connectors was offering a strategic advantage.

The first job was to define the most effective industrial approach, using some standard components, to meet the customer's requirements. Based on detailed analysis and a modular concept, TE engineers designed a reliable and sustainable product solution with rapid delivery. SIMABUS connectors allow a fixed or sliding function to the connected tube. They can be installed independently in a vertical or horizontal position at site without adaptation of the supporting structure.

The second challenge was to produce the requested parts within a short lead time. SIMABUS connectors' modularity allows TE to manage available inventory on standard components. Consequently the design to customer's connector becomes fast to produce by assembling standard components.

Customer's engineers fully approved SIMABUS connectors. The new connectors were installed only three weeks after making the decision on the proposed solution.



S.E.A.

Rail Line Project SEA

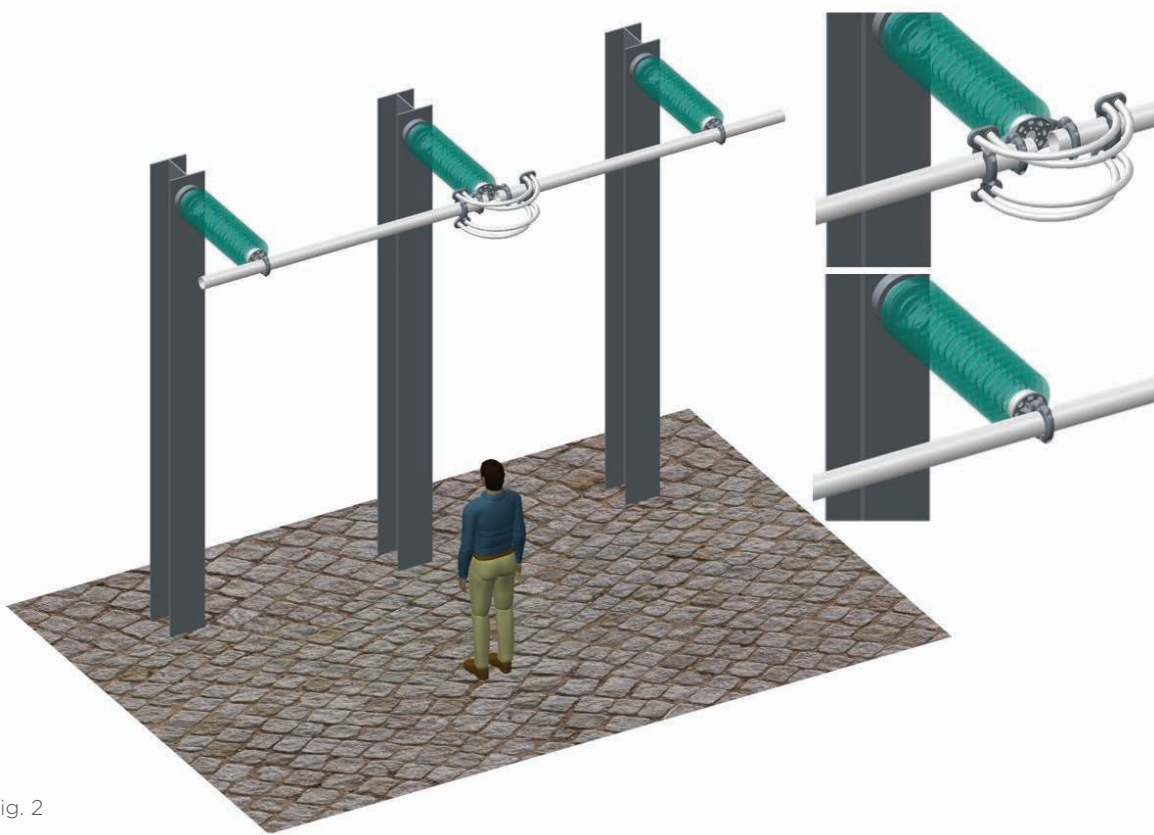


fig. 2

THE OUTCOME



Customers often face issues in the field, which can strongly affect their execution planning. Thanks to more than 60 years of experience, TE was able to solve a major problem with one of its highly engineered connectors. TE's experts avoided the commissioning delay of that substation which would have led to huge financial penalties. This is how TE provides an extraordinary customer experience.

“TE SHOWED ITS ABILITY TO ADAPT TO A VERY SPECIFIC, CHALLENGING SITUATION. THEIR TEAM REACTED QUICKLY TO MEET OUR PROJECT REQUIREMENTS. THIS PROJECT NEEDED A PARTNER WITH EXPERIENCE IN PROVIDING EFFECTIVE AND RELIABLE SOLUTIONS FOR SPECIFIC APPLICATIONS - WITHIN A SHORT TIME PERIOD. TE IS THAT PARTNER.”

Rework old technical specifications, optimize products to save costs, design products to fit any application, support customers directly in the field with technical expertise and much more: all are part of the job and of the daily business of TE's team.

TE engineers are experts in designing and supplying products for harsh environment applications -bringing more than just connectors. This experience reinforces the will to offer our customers worldwide an extraordinary customer experience.

TE Connectivity (NYSE: TEL) is a \$12 billion global technology leader. Our commitment to innovation enables advancements in transportation, industrial applications, medical technology, energy, data communications, and the home. TE's unmatched breadth of connectivity and sensor solutions, proven in the harshest of environments, helps build a safer, greener, smarter and more connected world. With 75,000 people – including more than 7,000 engineers – working alongside customers in nearly 150 countries, we help ensure that EVERY CONNECTION COUNTS – www.TE.com.

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