



Electronic Control System for Railway Catenary Installation Equipment

Railway Lines Electrification Machines by Tesmec



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“ For the development of our new catenary installation machine, Tesmec aimed to combine high performance, modular structure and practical usability. We have achieved this target and now we are able to transfer these benefits to our customers. ”

Ing. Alberto Oscar
Technical Director Stringing Division at Tesmec



For the control and monitoring system of a new generation of railway lines electrification machines, Italian-based company Tesmec decided to choose TTControl as technology partner for both the constant tension stringing unit and for the catenary maintenance diagnostic unit.



The availability of complete control systems with excellent performance and flexibility enabled TTControl to respond ideally to Tesmec's needs by realizing the following features of the stringing unit:

- Stringing of catenary ropes and contact wires to the final adjustment value without causing any rotation to the wires
- Independent setting and automatic control of pull force values for wires and ropes without causing overload or load oscillation during start-up, speed changes or critical conditions such as extreme curves



Four TTControl HY-TTC 60 ECUs and a HY-eVision² 10.4" operator interface made it possible to meet the requirements and to build a single HMI on the machine with the following functions:

- Setting and supervision of working conditions of the machine (machine cycles, visualization log, graphics and text)
- Diagnostics (error log, system maintenance, interactive hydraulic scheme and user manuals)

“ The control logic of stringing machines and railway equipment requires flexible solutions. It was a fascinating opportunity for us to equip these machines with our high-performance control platform and supervision systems. ”

*Marc Weissengruber
Director Sales & Marketing at TTControl*

By using TTControl's HY-eVision² 7" operator interface together with an HY-TTC 94 ECU and four HY-TTC 48X I/O modules, it was possible to integrate and manage all the different functions of the catenary maintenance diagnostic unit, a self-propelled vehicle designed for the construction and maintenance of electric railways. It is equipped with a working platform, a cable positioning mast and a crane with a working basket.

Additionally, a modular, flexible and adaptable system has been established thanks to the versatility and configurability of the control units.

The performance of hardware as well as software components, together with the dedicated implementation of software functions by Tesmec's and TTControl's team of application engineers lead to important advantages for both, Tesmec during production and testing, and the end user during operation and maintenance of the machine:

- Simplification of the system
- Modularity and flexibility
- Communication and synchronization between the stringing unit and the maintenance unit
- Diagnostics during production and field service activities
- Machine automation



▶ CUSTOMER / PROJECT

Tesmec - Railway Catenary Installation Equipment

▶ CHALLENGE

The customer searched for a technology partner able to deliver a complete control system for both the constant tension stringing unit and the catenary maintenance diagnostic unit.

▶ SOLUTION

TTControl's product range of ECUs, I/O modules and operator interfaces responded ideally to Tesmec's requirements.

▼ AT A GLANCE



Constructing Efficient Working Environments with High-Performance Control Solutions

About TTControl

TTControl, a joint-venture company of TTTech and HYDAC International with locations in Vienna and Brixen, offers electronic control systems for mobile machinery and off-highway vehicles, such as fork lifts, cranes, municipal vehicles and snow groomers, construction and agricultural equipment. Being leaders in functional safety, TTControl's software and hardware platforms enable equipment manufacturers to develop highly reliable electronic control systems quickly and economically.

Further information on
TTControl available at
www.ttcontrol.com



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About Tesmec

Tesmec designs, manufactures and sells products, technologies and integrated solutions for the construction, maintenance and efficiency of infrastructures related to the transport and distribution of energy, data and material (oil and derivatives, gas, water) such as: overhead and underground transmission grids, traditional and high speed railway lines, energy cables and pipelines.

Tesmec Group, established in 1951, relies on more than 400 employees and has the headquarters located in Grassobbio, in the vicinity of the Northern Italian town of Bergamo. The group has also other four production plants: three in Italy, in Endine Gaiano (Bergamo), Sirone (Lecco) and Monopoli (Bari), and one in the USA, in Alvarado (Texas).

Further information on
TESMEC is available at
www.tesmec.com

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