SuccessStory

Safety-related solution for portal cranes

Project overview

Industry
Railway

Application
Anti-collision system

Hardware
HIMatrix:
2 F35 per track renewal train

Number of I/Os
23

Communication
ComUserTask TCP

Source: MATISA Matériel Industriel SA

Customer

HIMA partner:
EIC2 SA, Switzerland

End customer:
MATISA Matériel Industriel SA, Switzerland

Project

HIMatrix® safety systems, certified according to CENELEC SIL 4, are the central components in an anti-collision system for portal cranes on track renewal trains.

Project description

The company representing HIMA in Switzerland, EIC2 SA, has developed software for an anti-collision system in accordance with DIN EN 14033-3 and EN ISO 13849-1 for MATISA Matériel Industriel SA. The anti-collision system prevents portal cranes on track renewal trains from colliding with each other or with the train. MATISA Matériel Industriel SA, based in Crissier, Switzerland, is one of the leading companies worldwide when it comes to developing machinery for new construction and maintenance work on tracks. Track renewal trains are used to lay railway tracks in a continuous manner. The new anti-collision system allows workers for the first time to carry out work on the railway tracks uninterrupted. Prior to this, the cranes frequently had to be shut down manually.

Two HIMatrix control systems will be used on each of the track renewal trains made by the MATISA Matériel Industriel SA Group. HIMatrix meets the customer's requirements as regards the I/O equipment and the SIL classification. The HIMatrix system is certified for use up to the highest safety level, SIL 4, in accordance with CENELEC. The HIMatrix control systems communicate via Ethernet with laser-based distance sensors, which do not have their own intelligence system. All the calculations for stopping the portal cranes are made in a 20-millisecond cycle.

Before putting the safety system into operation, EIC2 carried out a complete simulation of the application with the help of a PC simulation of the crane movement and using the ComUserTask (CUT) function of the HIMA engineering tool, SILworX®. This enabled the complex system to be put into operation in just four days.

Advantages of HIMA solution

- PC simulation prior to start-up
- High availability allows more efficient track work
- Compact and modular safety control systems and remote I/O modules
- Certified for use up to SIL 4 (EN 50126, EN 50128, EN 50129)
- Highly robust for railway applications
- Reaction time ≤20 ms

Source: MATISA Matériel Industriel SA

HIMA SAFETY NONSTOP