

ELCOM d.o.o. is specialized in Totally Integrated Automation (TIA), containing electrical engineering and software development for the automation of production processes and machines, production of MCC and control cabinets as well as onsite installation, commissioning and acceptance testing (FAT, SAT, SIT)



Automation of two wagon tipplers

Customer: JP Elektroprivreda BiH



Certificates

We have proven our competence as Siemens Solution Partner Automation in the following areas:

- Automation System SIMATIC
- Human Machine Interface SIMATIC HMI
- Process Control System PCS7

Process description

Wagon tipplers unload coal from railway wagons. Existing wagon tipplers no. 2 and 3 work on the principle of rotation around its axis. With rotation of the wagon tipplers coal from full wagons is unloaded into the bunkers beneath the wagon tipplers, from where the coal conveyor system transports the coal to the coal bunkers or open coal depot within TPP "Tuzla".

Wagon tipplers consist of:

- Steel construction rotator;
- Wagon tippler latch;
- Rolling mechanism;
- The drive of the rolling mechanism;
- Hydraulic system;
- Electro-hydraulic latch;
- Electro-hydraulic railway latch for securing access track;
- Cable winder;
- Part of the power supply;
- Control system of the wagon tipplers;

Challenge

Implementation of a cost efficient and user friendly process control system with as less as possible classical cabling which have to result in a very fast and

easier cabling, engineering and commissioning of a very high level.

Very detailed diagnostics and intuitive representation of current step for fast fault analysis and low deadlock times.

Robust solution to endure harsh environmental conditions and 24h 7 days a week work. Change of old slip-ring motors with squirrel cage motors and frequency drives.

Solution

The solution is a totally integrated automation architecture with PROFIBUS based topology. Distributed ET200M stations with PROFIBUS interface are connected to the central 315-2PN/DP processor. A PC station is connected via industrial Ethernet to the controller.

Robust monitoring of tippler position is achieved through redundant BERO limit switches and SIMODRIVE absolute value encoders.

Old AC motors with slip-rings and starting resistors are changed with ordinary squirrel cage motors and micromaster 4 frequency drives.

Project overview

- 10 motors
- 30 analogue instruments

- 500 digital signals
- Control system with 2x 315-2PN/DP
- 2 OS stations with WinCC v7.0
- 4 ET 200M
- Industrial Ethernet and Profibus DP
- Based on network topologies
- Micromaster 8 frequency drives
- Absolute value encoders



Information about the Siemens Solution Partner Program

Under the Siemens Solution Partner Automation and Power Distribution Program, we join forces with our Solution Partner. By merging our product and systems expertise with the application and industry knowledge of our partners, we have created a common basis for the fast, smooth and highly efficient implementation of your requirement – customized solutions for your competitive advantage.
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