Conveyor Process Control Solutions

Safety for Conveyors

Application challenges

Because conveyors are so critical, they can represent a single point of failure in a mining application. Any stoppage on the belt will have a negative impact on productivity and profits.

The causes for less than optimal performance are varied – and can often make it difficult for miners to achieve their primary objectives.

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Conveyor safety

Conveyors are a cost-effective, energy efficient and environmentally friendly way to transport ore and material from one part of a mining operation to another. They typically operate in very demanding conditions that can be extremely dirty, hot, cold or wet.

Emergency shutdown systems for conveyors are important tools in helping to prevent accidents and protect equipment. These systems are designed to interlock with conveyor shutdown systems in the event of maintenance or emergency.

Safety challenges for conveyors

- High cost of implementation, with cables and safety relays across the conveyors, up to the electrical room.
- Expensive to maintain mechanical switches that must have their interior and contacts cleaned frequently.
- Unnecessary stops due to material accumulation or variation in the tension of the safety switch cord by thermal expansion.
- During installation, many switches are damaged as they need to be opened to access the contacts.
- Difficulty adjusting the pull cord tension.
- Inability to diagnose root cause of issues leads to increased downtime.

Rockwell Automation

Solution

Our integrated architecture for conveyor safety delivers safety requirements while reducing complexity and costs:

- Electromechanical components and their associated wiring can be unnecessary. Safety-relevant signals can be transmitted via CIP Safety™, reducing the complexity and wiring costs.
- Distributed cabinets across the conveyor connect the safety switches and traditional conveyor sensors using CIP™ safety protocol over EtherNet/IP™.
- The GuardLogix® Single Controller for Standard and Safety Control High-performance CPU is optimized for faster safety reaction time.
- Guard I/O™ modules offer all the advantages of distributed I/O for safety systems and are available in IP67 for EtherNet/IP™.
- Our Lifeline™ 5 Cable Pull Switches are microprocessor-based solutions are cheaper to install, reduce false trips, and make it easier to diagnose issues and repair issues quickly.
- The Safe Torque Off optional card for variable speed drives can be used in safety-related applications where the de-energized state is considered to be the safe state. It removes rotational power to the motor without shutting down the drive.

Improve safety and make repairs quickly while reducing complexity and cost

Connect with us.

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