![Johannes Hübner Giessen logo]

Excavator / Hoist: U-ONE-SAFETY-Compact implements safety functions in open cast mining even without a safety PLC

- Replaces several individual devices with a single, compact system incl. additional functions
- Safe position and end position monitoring
- Easy to configure, no need to modify with the control software
- Certified safety ensures uncomplicated acceptance test

Before: Mechanical spindle limit switches were driven by gearwheel and used for monitoring and switching of end positions.

After: The direct driven universal encoder system U-ONE-SAFETY-Compact allows high precise and safety certified monitoring and switching of end positions.

Task

Absolute encoders and mechanical limit switches (levers and / or spindle limit switches) characterize state-of-the-art solutions for position detection and limiting the end position of moving system components in relation to one another on large machinery in open-cast mining applications. To ensure the safety of personnel and safeguard machinery it is essential that limit switches are reliably actuated when end positions are reached. Consequently, highly reliable monitoring technology is necessary to comply with the corresponding safety requirements – in particular when implementing modernization or automation measures. To meet the required performance level, two-channel architectures or diverse redundant systems are needed.

The Hübner Giessen solution

The universal encoder system U-ONE®-SAFETY-Compact consists of a basic unit and directly attached switch or bus modules. All functions are integrated in a robust housing designed to meet the specific demands of heavy industry. Safety switching signals are provided according to position and speed based on a 13 / 15 bit resolution (max. 32768 rotations). It is possible to combine diverse bus interfaces as well as a 4 – 20 mA analog output or an incremental output according to application requirements. As a consequence, it is possible to replace several individual devices with a single compact device. The system-wide two channel architecture facilitates the implementation of safety functions up to Category 3 and Performance Level (PL) d as well as SIL 2.

Products

- USC 42
- Engineering support

More information: www.huebner-giessen.com/en/applications