JOHANNES HÜBNER GIESSEN

# Excavator / Slewing gear: AMPN 41 provides safe position monitoring at slewing gear of a bucket wheel excavator

- Highly precise replacement solution for inaccurate mechanical cam limit switches
- PROFIsafe via PROFINET for direct connection to the safety PLC
- Certified safety ensures uncomplicated acceptance test
- High levels of availability even in mining operations subject to extreme environmental conditions

*Before: Frame construction for the slewing gear between the superstructure and substructure of the excavator with several mechanical cam limit switches for position monitoring.*

*After: The safety certified absolute encoder AMPN 41 provides safe position actual values to the safety plc.*

**Task**

It is planned to equip a bucket wheel excavator with the latest automation and safety technologies as part of a complete modernisation project. To achieve the required safety categories identified by a risk assessment, safe position values are required for both slewing gear mechanisms between the superstructure and substructure of the excavator as well as between the discharging boom and the substructure of the excavator. By contrast standard position values are sufficient to determine the position of the crawler tracks.

**The Hübner Giessen solution**

Equipped with a safe PROFINET interface that uses the PROFIsafe protocol the AMPN 41 multiturn absolute encoders to be installed at the slewing gear mechanisms are certified for applications up to Safety Integrity Level (SIL) CL3 to EN 61508 and PL e to EN ISO13849. That saves the user having to provide separate verification of the functional safety of the position sensors. Absolute encoders AMP 40 equipped with a standard PROFIBUS interface will be installed at the crawler tracks. Robust, form-locked process coupling and the dedicated constructional design of the encoders for use in mining operations subject to extreme environmental conditions ensure position data is reliably made available at the safety level required for the respective application.

**Products**

- AMPN 41
- AMP 40
- HKS 5
- Engineering support

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