



▲ Force measuring rollers and amplifier module

Future-proofing basket-style stranding machine

The project team of Acoteq GmbH has carried out the upgrading of a basket-style stranding machine, to meet future process requirements, with a downtime of only a few days. The Krupp KVR 8x1400 stranding machine with reverse twist was originally constructed in 1977. The identified customer requirements were:

- Measurement of the current strand tensions prior to the stranding point
- Automatic tension control, from full to empty spools, during production runs
- Simplification and reduction of operator settings and changeover times through a recipe system
- Recording and documentation of production parameters
- Replacement of the pneumatically operated spool brakes, which can only adjust the braking forces equally for all of the spools in a given cage
- Installation of a disc brake system for precise torque control of each individual spool

- Machine Stop functionality should the strand tension be outside the limit values set for that process
- Ensure consistently high product quality, independent of the machine operator

The project also involved the development of a mechanism to transfer the linear motion of the RTM X42 brake actuators to the disc brake systems. For the selection of components, Acoteq chose FMS (Force Measuring Systems) from Switzerland. For 15 years, FMS has been capable of offering a complete range of technologies for force measurement, data processing and radio transmission of signals in stranding machines.

The RTM X42 telemetry system consists of the wire tension measuring system, the control centre and the brake system. The FMS brake actuators used are powered by rechargeable batteries, and do not require expensive and maintenance-intensive slip rings to provide the required torque at

each individual spool. Data transmission is handled by radio (also with a rechargeable battery/no slip rings) in the 2.44 GHz band, so the wiring on the rotating side of the machine was kept to a minimum.

The main advantages resulting from the modernisation are the measurement and display of an actual tension value for each individual strand; reduced set-up time, and reproduction of critical process parameters, during product changeovers through the use of recipes; and improved quality and throughput with the constant closed-loop tension regulation of the individual strands. All of the production parameters over the course of a complete product run can be recorded and documented.

FMS Force Measuring Systems AG
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