

Crane system sensors with CANopen

FSG Fernsteuergeräte (Germany) provides a range of sensor components for crane systems including live ring encoders, linear transmitters, anemometers and indicators.

□

Sensors used in crane systems: live ring encoders (top), linear transmitters (mid right), anemometer and indicator (bottom) (Photo: FSG)

MEASURING AND SENSOR TECHNOLOGY FOR CRANE SYSTEMS must fulfill high requirements on precision and durability. The sensors for crane systems are available with the following signal outputs or interfaces: 0 V_{DC} to 3,4 V_{DC} speed signal, 4 mA to 20 mA, 4 mA to 20 mA intrinsically safe with Atex certification, CAN network with CANopen protocol, and Profinet (optionally with Profisafe protocol).

Amongst other components, the company provides live ring encoders with a spring-loaded external gear wheel that serve to detect the swing angle and speed of telescopic crane booms. The multi-turn live ring encoders can be connected to the gear rim of the boom drive to register its rotations. They are IP68-protected to withstand rugged environments.

For load calculations, the company presents linear transmitters that detect load-dependent displacement in spring arms. These devices are available as potentiometric or inductive models.

Wind warning systems consisting of an anemometer and an indicator ensure safety and enable monitoring in cranes and excavators. They detect wind speeds up to 50 m/s.

The indicator contains an electronic LED circular bar graph display with a maximum limit value contact which can be adjusted from the outside. If the maximum value is exceeded, the potential-free contact is switched.