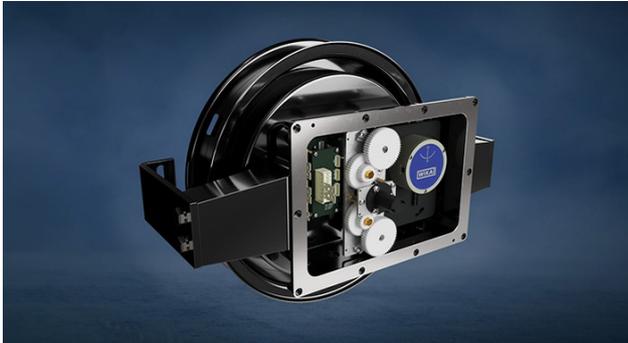


Replacing sensors in old machines with CANopen

With the gSens LWG product series, Wika added another generation of length/angle sensors to its portfolio. It ensures continued use of new and old machines by replacing older sensors – also of the PAT brand – with 25-year backwards compatibility.



(Source: Wika)

Quite a few cranes and other mobile applications have been operating nonstop for decades. Many of their electronic and mechanical components, however, have a considerably shorter life expectancy. To ensure the long-term availability of machines despite the challenges involved, it's vital to keep an eye on the past, present, and future when developing products. Wika Mobile Control has accomplished this with its latest generation of gSens LWG length/angle sensors. They are backwards-compatible and future-proof, explained the company.

Length/angle sensors have performed vital roles across a vast range of mobile applications for decades. Their job is to capture an object's geometric parameters – its angle and length – and convert them into electrical signals. Wika (formerly PAT and Hirschmann MCS) has been supplying the sensors of the series for

many years. They are configurable with different cable types and lengths, housings, and signal transmission technologies to suit the needs of different customers.

Integration and service

The sensors come with optimized integration, said the company. The latest generation delivers one-to-one electrical and mechanical compatibility with all type 15x, 2xx, 3xx, and 5xx gSens LWG models and the corresponding PAT brand products. Without altering their mechanical design or electrical connections, they have been modified to speed up on-site installation in machines, said the company.

This makes it possible to redesign machines without the need for design, electrical, mechanical, or software-related modifications. The same holds for the controller – the brain of every mobile application – as compatibility is ensured. Communication, compatible fault responses, and the same object directory for the used CANopen interface help to integrate the product. There is also no need for a new inspection or type test.

The sensor generation comes with hardware components which ensure electrical robustness to guard against failures and potentially harmful external influences, explained the company. The geometric sensor provides electromagnetic compatibility according to the EN 61 000-6-2 standard and has a supply voltage range from 8 V_{DC} to 30 V_{DC}. The redundant slipping bodies are gold-alloy-plated. Self-explanatory circuit board markings enable to replace modules. The regular connectors are equipped with spring terminals.

Functional safety

The geometric sensor has been developed to meet both current and future safety requirements. It features the EN 13849 performance level PL d/Cat. 3-compliant functional safety and delivers functionally safe signals for length, angle, and hoist limit switches. The sensor series includes a switching output for directly controlling actuators, as well as an improved safety chain achieved by shortening the signal transmission process. A benefit of the safety chain is enhanced safety as a result of redundant signaling to the controller and hoist limit switch. This allows the hoist to be operated at faster speeds or loads lifted higher.

[CW](#)