CAN Newsletter Online

CAN NEWSLETTER MAGAZINE

Measurement in drives and mobile machines

For 40 years, Wachendorff has been offering CAN-based sensors and automation products for mobile machines and municipal vehicles. Here's a little time travel.

Speed and length measurement directly in the tool (Photo: Wachendorff)

This article originally appeared in the March issue of the CAN Newsletter magazine 2019. This is just an excerpt.

In the beginning, the company offered small and robust speed displays in vertical drilling machines as well as temperature displays in asphalt machines. For about 25 years, Wachendorff has also supplied incremental encoders as sensors for outdoor applications. Initially, they were used as speed sensors, consisting of a rotary encoder with a measuring wheel, as well as a robust mounting device, which produced the necessary contact pressure on the conveyor belts in quarries. Other applications included speed and position sensors on construction hoists, or speed sensors on wind turbines, often mounted on the slip ring.

Just over ten years ago, the company developed a series of absolute encoders that offer enormous advantages, not only over conventional encoders, but also over conventional sensors, such as potentiometers or simple angle sensors. These enhancements make the products ideal for use in outdoor applications, or in environments with high mechanical demands (e.g., in mobile work machines, or even in aircraft elevators). These absolute encoders feature single-turn Quattromag technology, which uses four Hall sensors and can measure angular position more accurately and more quickly than conventional sensors using a diametrically split magnet mounted on the face of the encoder shaft. With a patented calculation algorithm, interferences are eliminated.

This gives the processing electronics much better signal quality with less noise. In addition, these multi-turn encoders are equipped with Endra technology; a technology that is able to count and store revolutions via a Wigand sensor, even when de-energized. Here too, a patented process enables precise and reliable signal processing. In combination, these two technologies are almost unbeatable for mobile applications: Because it's contactless and enclosed in housing, it's wear-free, – and also has no moving parts such as gears; this paired with the fact that it doesn't have a battery makes it completely maintenancefree. The encoders work reliably and are temperature-resistant in ice or in the desert. They are also available in an off-shore version.

Encoder used in harbor cranes (Photo: Wachendorff)

Another not to be underestimated advantage is the compactness (36-mm housing) and the low weight combined with high bearing loads and rugged protection classes such as the IP65, IP67, and up to IP69K. Wachendorff integrated the usual CAN interfaces compactly on one board (CANopen, CAN proprietary, CANopen Lift, and J1939).

If you want to continue reading this article, you can download the PDF of Robert Wachendorff. Or you download the full magazine. This is free-of-charge.

cw