With redundant sensor elements

The IX series of inclinometers by Lika (Italy) features two independent sensor elements on separate boards. The IXB and IXC models provide CANopen interfaces.

The redundant tilt sensor complies with the ISO 13849 safety standard (Photo: Lika)

All the electronics is duplicated, i.e. two separate boards with independent circuits, components (accelerometer sensor, signal conditioning, power supply, micro-controller, output interface, etc.). Cables for power supply and signal transmission are installed in the same enclosure. Both mechanical as well as electrical characteristics of the redundant inclinometers are identical to the single-sensor versions.

The sensors rely on MEMS technology. The measurement range is from ±5° up to ±60° in two-axis models and up to ±360° in one-axis models with a 0,001° resolution and a ±0,05° accuracy. The IP67-rated housing and the resin-coated electronics allow for high protection against mechanical stresses, vibrations, thermal shocks, moisture, offshore conditions, and load dumps. The operating temperature is -40 °C to +85 °C.

The CANopen interface complies with CiA 301 (CANopen application layer) and CiA 410 (inclinometer profile). The resolution is configurable by means of CANopen from 0,1° to 0,001°. The anti-vibration filter and optional temperature compensation to reduce the thermal drift (only for the IXB model: 0,002 °/°C) are also configurable. Due to their robust construction the tilt sensors are suitable for use in harsh environments such as construction machinery, mobile equipment, utility vehicles, telescopic handlers, material handling, mobile cranes, excavators, shovels, bucket trucks, forklifts as well as agricultural and forestry machinery.

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