

# As integrated position sensor for hydraulic cylinders

**The SGH25 wire-actuated encoder from Siko is characterized by a measurement range up to 2,5 m. It comes with a variety of interfaces including CANopen.**

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(Photo: Siko)

The wire-based position sensor is suitable for applications in mobile machines such as dumper trucks, excavators, and agricultural machinery. There it measures the position of hydraulic and telescopic cylinders and communicates it to the machine control system via integrated communication protocols.

The SGH25 is available with CANopen or SAE J1939 protocols for transmitting data between the SGH sensor and the machine control system. A version with analog interfaces is provided, too. Redundant versions with CAT3, performance level D -PLd meet the requirements for safety-critical applications in accordance with EN 13849. There is a choice with safety variants between a redundant or analog interface, redundant CANopen, redundant SAE J1939 or CANopen Safety.

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The wire-actuated encoder can also be installed in telescopic cylinders, which provide a significant competitive advantage in comparison to traditional measurement systems (Photo: Siko)

In comparison to the SGH10 basic model with a measurement range of up to 1 m, the SGH25 has an extended measurement range up to 2,5 m, while its big brother, the SGH50, covers large measurement ranges up to 5 m. The SGH series can be integrated directly into hydraulic cylinders. A newly developed plastic provides a strong design and extends the fluid temperature range from +85 °C previously to +105 °C now.

The SGH25 has been tested to vibration standards, which are otherwise used for helicopter drives, and withstands individual shocks of up to 100 times the force of gravity. Its flexible cable cushions the hardest impacts. The hydraulic medium also dampens any vibrations that come about.

With the integrated teach-in function, the measurement length of the sensor can be set individually. The product can cover a multitude of measurement lengths (0 m to 2,5 m). Both the number of variants and the stock requirements for any spare parts therefore fall. Another feature of the position sensor is a KV1H plug connection. This modular plug connection system has the high protection rating of IP69K.

The product was developed specially for extreme conditions in mobile hydraulics that are mainly used in agricultural machinery or construction machines. The resilience required for this has been designed and tested both electronically and mechanically for the service life of a cylinder.

For cylinder manufacturers, the use of those position sensors offers large potential for savings, as the cable-based design concept makes hollow boring of the piston superfluous.

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