

# Through the wire

INNOVATIVE WIRE-ACTUATED POSITION SENSORS FOR HYDRAULIC AND TELESCOPIC CYLINDERS OFFER GREATER DURABILITY AND VERSATILITY THAN TRADITIONAL SOLUTIONS, AND NOW MEASURE UP TO 5 METERS

▶ The new SGH50 sensor uses a clever cable mechanism for absolute measurement of hydraulic or telescopic cylinders. The sensor represents the latest generation of the SGH wire-actuated encoder family from Siko and makes it possible to measure distances up to 5m (16ft). Target applications include a wide range of industrial vehicles, including those designed for material handling.

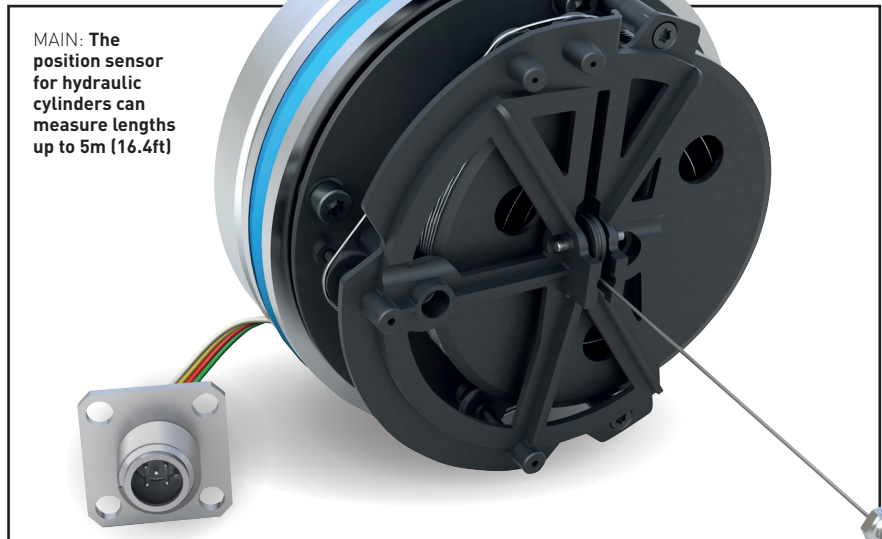
Important performance features of the SGH50 include a significant extension of measurement length, above-average durability and wide compatibility with various interface protocols, even for applications in which maximum safety is paramount. The sensor is used particularly for telescopic and hydraulic cylinder applications in mobile machines.

## Measurement length up to 5m

With measurement lengths up to 5m (16.4ft), the SGH50 has the largest measurement range of the SGH series to date: one of its little brothers, the SGH25, covers measurement lengths in the mid-range, up to 2.5m (8.2ft), and the other, the SGH10, covers lengths up to 1m (3.2ft). The SGH50 can be integrated into hydraulic and telescopic cylinders and is extremely durable, largely due to a plastic developed specifically for the purpose, which is characterized by an extension of fluid temperature resistance from 85°C to 105°C (185°F to 221°F).

## Extreme vibration resistance

When it comes to shocks and vibrations, the SGH50 also sets new standards. It meets the specifications of the most extreme vibration standards, which are also used for testing helicopter turbines, and it can easily cope with shocks 100 times the force of gravity. Unlike rod-based sensors, its flexible cable completely absorbs vibrations. The hydraulic medium provides additional damping of any vibration.



MAIN: The position sensor for hydraulic cylinders can measure lengths up to 5m (16.4ft)

The wire-actuated SGH50 sensor is designed in particular for the highest requirements of mobile hydraulics and so must meet extremely long service life requirements. It has been tested and designed, both electrically and mechanically, for the service life of a cylinder.

In order to cope with the harsh conditions of the mobile world, all the sensors integrated into the cylinder are completely protected from external factors. SGH sensors use KV1H plug connections and have a protection rating of IP69K.

## Variety of interfaces and safety variants

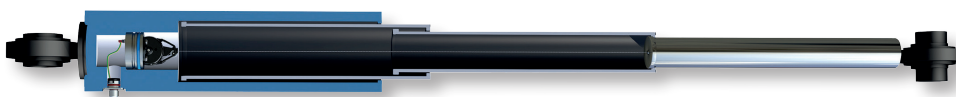
Analog interfaces, CANopen or SAE J1939 provide the communication between the SGH50 sensor and machine control system. Applications in which maximum functional safety is essential can be supplied with redundant SGH50 versions (CAT3, PLd) in accordance with EN13849. For safety variants, Siko

also offers redundant or analog interfaces, redundant CANopen, redundant SAE J1939 or CANopen safety.

## A good learner

With the integrated teach-in function, the measurement length of the sensor can be taught individually up to 5m. This leads to a significant reduction in the number of variants for OEMs and cylinder manufacturers. The cable-based SGH50 also offers significant advantages to cylinder designers as far as manufacturing costs are concerned, as hollow boring of the piston is no longer necessary. Like all models in the SGH series, the SGH50 can also be integrated into telescopic cylinders, which is not usually possible with conventional measurement systems.

*Mathias Roth is mobile automation sector manager, Siko*



LEFT: SGH sensors (such as the SGH50, above) are the only position sensors in the world that can be built into a telescopic cylinder



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