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Draw-wire sensors
wireSENSOR

Synchronization monitoring with draw-wire sensors in telescopic platforms

Modern lifting systems for passenger cars are the central operating equipment in car workshops and allow free access to the underbody of vehicles for maintenance, repair and servicing work. Lifting systems such as telescopic platforms consist of two cassettes which are operated independently of each other when the vehicle is lifted. Here the support arms must always be kept at the same lifting height so that the load distribution and the height level of the vehicle remain the same. In order to ensure this, the lifting platform requires synchronization control. For this, AUTOPSTENHOJ GmbH relies on sensor technology from Micro-Epsilon to measure the height.

For electronic synchronization monitoring, a draw-wire sensor is used here. These are easy to integrate, very compact and offer high accuracy in addition to the large measuring range. For displacement measurement, the sensor is mounted on the lowest cylinder tube of the telescopic cylinder with the opening facing downwards. This prevents dirt or liquids from getting into the inside of the sensor. The steel cable with wire extension is guided from the sensor via deflection pulleys into the cylinder tube. The sensor used is a type WDS-1500-P60-CR-P-M4 draw-wire displacement sensor with robust aluminum housing and a type WE-1500-M4 wire extension with M4 wire connection and 1500 mm wire length.

In addition to the sensor used here, Micro-Epsilon provides a large number of other suitable draw-wire sensors for the same or similar applications, such as the MK77/MK60 series with a robust plastic housing. In addition to the high operational reliability and long service life, these sensors offer an excellent price/performance ratio, particularly for larger volumes in serial applications. For optimal integration, a wide range of possible accessories such as deflection pulleys, wipers and ceramic bushings for diagonal pull, as well as a wide variety of output signals adapted to the respective control system, are available. As well as analog signals (voltage, current, resistance), incremental (HTL, TTL) or absolute (CANopen, Profibus, SSI) digital outputs are also possible.

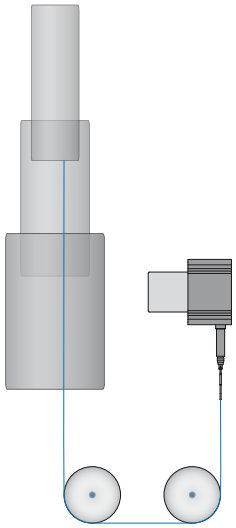
Redundant outputs and corresponding key figures such as B10 or MTBF are available as an option for safety-relevant applications. This allows the highest level of safety to be achieved.

Requirements for the measurement system
- Measuring range 1500 mm
- Linearity ± 1.5 mm
- Resolution 0.1 mm
- Slow stroke movement

Ambient conditions
- Protected installation environment
- Room temperature 20 - 23 °C

System design
- Draw-wire displacement sensor type WDS-1500-P60-CR-P-M4
- Wire extension with M4 wire connection and a wire length of 1500 mm of type WE-1500-M4

Advantages
- Compact design
- Easy installation
- High reliability and long service life
- Excellent price/performance ratio



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