BESTECH
Sensors & Instrumentation

Draw-wire displacement sensors
wireSENSOR

MICRO-EPSILON

Variable support for mobile cranes and cherry picker platforms

Cherry pickers and mobile cranes are used for a multitude of different tasks. In this respect the load moment available plays an important role, because this determines the amount of load that can be lifted for a given (lateral) range. If the permissible load moment is exceeded, serious accidents can arise due to the crane tipping. For this reason since 1964 this type of vehicle must be equipped with a load moment limiter. The possible maximum load moment for the current use essentially depends on the width of the support. The maximum load moment is also only possible when the supports are fu lly extended.

Often cranes and cherry pickers must be used in confined spaces. In such cases the full support width and therefore the full load moment is not available.

The fully variable support then offers the possibility of determining and permitting the maximum load momentfor any support width. To achieve this, the support width is measured automatically, acquired by the on-board computer and the possible load moment is calculated from it. This takes place fully automatically without involving the operating personnel. In this way optimum use is ensured under difficult spatial conditions while maintaining a high level of safety.

The measurement of the support width is provided by draw-wire sensors of the series P60 and P96 with measurement ranges between 1500 and 4000 mm. In order to achieve the highest level of safety, normally two sensors per support are used for a redundant measurement. In this respect the interface for the sensors and the vehicle electronics can be realised by analogue means via voltage, current or potentiometer as well as digitally via buses (CANopen, Profibus, etc.). In particular, the telescopic feature and easy mounting (also possible as retrofit) make draw-wire sensors ideal forthis application.

Reasons for the system selection:

- Price/performance ratio
- Lowspace requirement (telescopic)
- Easyfitting (also possible as retrofit)
- Various measurement ranges and types of output

Measurement system requirements:

- Measurement ranges up to 4 m
- Ambienttemperature-40°…+80°C
- Ruggedsensordesign

Suitable sensor models:

- WDS-xxx-P60
- WDS-xxx-P96
- WPS-xxx-P115

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