



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 fully 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 moment for 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 measuring 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 for this application.

Reasons for choosing the system

- Price/performance ratio
- Low space requirement (telescopic)
- Easy fitting (also possible as retrofit)
- Various measuring ranges and types of output

Requirements for measurement system

- Measurement ranges up to 4m
- Ambient temperature $-40^{\circ}\dots+80^{\circ}\text{C}$
- Robust sensor design

Suitable sensor models

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