BESTECH
Sensors & Instrumentation

Draw-wire position sensors
wireSensor

MICRO-EPSILON

Lift height measurement on wheel gripper and lifting systems

Apart from the classical approach of permanently installed lifting platforms, in the field of lifting systems for commercial and rail vehicles, mobile systems which can be flexibly assembled from individual lifting trestles are becoming more and more popular.

In this respect almost any number of lifting trestles can in principle be assembled to form a system. The lifting trestles for commercial vehicles are often realised as so-called wheel grippers. In contrast, rail vehicles (or even complete trains) are normally lifted on the frame. Since the individual lifting trestles are mobile, complex lifting systems for large loads can be simply and flexibly set up and dismantled, and can also be equipped with more or fewer lifting trestles.

Therefore, each lifting trestle must be equipped with its own drive.

In order to facilitate a uniform lifting process, the height of each single trestle is measured with a draw-wire sensor, to guarantee a synchronised movement. In this way it is possible to achieve precise control of synchronised lifting even with unequal load distribution and a build up of the load is prevented.

Also, additional (convenience) functions, such as a lift height restriction or the running up to predefined heights can bevery easilyrealised.

Draw-wire sensors from Micro-Epsilon are particularly suitable for this measurement task due to their size and their excellent price/performance ratio. Depending on the requirements forthe protection class, measurement range and output signal, there are many different models availableforoptimum matching to each application.

Reasons for the systen selection:

- Simple mounting
- Excellent price/performance ratio
- Compactdesign

Measurement system requirements:

- Measurement range ≤ 2.5 m
- Resolution <0.5 mm
- Linearity ≤ 2 mm

Suitable sensor models:

- WPS-xxx-MK77
- WDS-xxx-P60
- WDS-xxx-P96

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