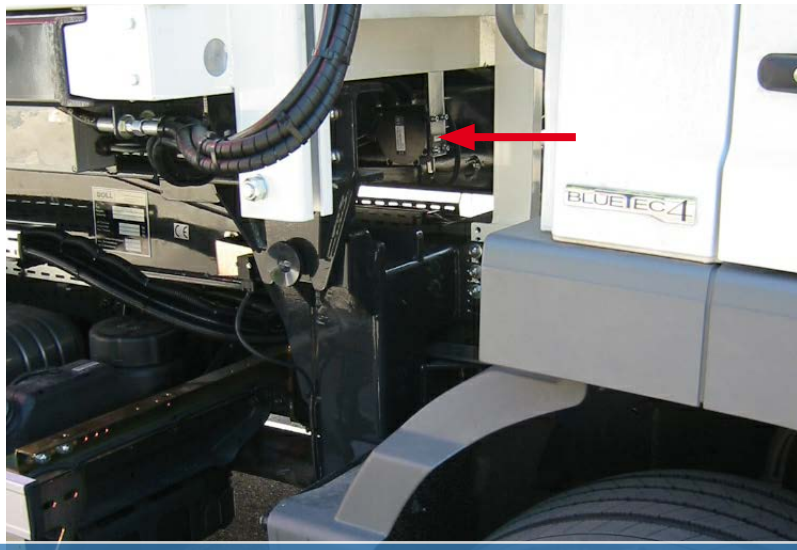
A157

Draw-wire sensors

wireSENSOR



Positioning of catering trucks at Airbus A380

Catering trucks are an important supply medium for modern airliners. They are used for loading and unloading an aircraft with food. Based on an hydraulic scissor-type mechanism, the van body of the truck is raised until the best position to access the supply door is reached. The company Doll from Oppenau produces these catering vehicles. As one of only a handful of suppliers, they are able to safely supply an Airbus A380 whose supply door could be located at a height of more than 8m.

The catering truck cannot drive directly to the supply door, because this door is above the wing, not beside it. Therefore, the complete van body is moveable in a longitudinal direction. A further challenge on the design is the ambient temperature range of -25°C to +65°C. The corresponding change in the oil viscosity also causes changes in the speed of the positioning hydraulics. Therefore, to dock safely and reliably to the aircraft, the movement of the van body must be detected by using a measurement system.Therefore, to dock safely and reliably to the aircraft, the movement of the van body must be detected by using a measurement system.

WDS-xx-P115 series draw-wire sensors from Micro-Epsilon are used for this. Mounted between the van body and the scissors system, movement is measured precisely and reliably.

The extreme ruggedness and long service life convinced Doll to integrate the sensors. They provide precise measurement results, high reliability against failure, even in poor weather conditions and optimise the set up and removal time of the catering vehicles.

Reasons for choosing the system

- Price/performance ratio
- High protection class

Requirements for the measurement system

- Measurment range: up to 3m
- Accuracy: ± 10mm
- Resolution: 1mm
- Protection class: IP67

System design

- WDS-xxx-P115