Bumper
Electrical Test

Key challenges in the project:

- Function check of the built-in bumper sensors
- Contacting the bumper cable harnesses with automatic decontacting
- Front/rear bumpers variant management
- Optimized cycle time by parallel tests
- Interface to production control system
- Standalone system for the electrical test

How did we solve them?

→ Power supply to the sensors to be tested with Berghof MERLIN
→ Current and resistance measurements with Berghof MERLIN
→ Testing the echo signals of the ultrasonic sensors with NI cRIO real-time system
→ Simulation of the controller of the pedestrian protection sensors using special hardware
→ Automatic configuration of the radar sensors via CAN interface
→ Diagnostic mode of hands-free access sensors via LIN interface
→ Interface to the customer's controls via PROFINET (EtherCAT or I/O signal)

Purpose of the project

Electrical testing of all built-in bumper sensors. Electrical testing is integrated into the overall test system. Besides electrical testing, the overall test system also includes the visual inspection with the inspection robot and test mechanics with conveyor technology.

Technical requirements for the test system

Interfaces to the overall test system, optimized test sequence for short cycle time
Ease of use of the test interface, graphic illustration of the pass/fail results on the test interface
Version-related test parameter sets, service functions for quick resolution of production problems

Test keywords:
Bumper, impact absorber, MERLIN measuring module (automotive tester), DUT (Device Under Test): OK (“in order”) in-spec part / NOK (“not in order”) reject part

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PE_Bumper_elektrische Prüfung_CS_en_2D2522002CS00.docx. Subject to change. Printed in Germany