



Press Release			
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Pin-point positioning at 360° Test system puts level sensors through their paces

Birkenfeld, 27 January 2015 – Measuring technology specialist MCD Elektronik, based in Birkenfeld/Germany, has developed and commissioned a test system for level sensors used in the automotive industry. The system developed for a major car manufacturer is designed for testing contactless angle sensors, which are used in vehicle headlamp range adjustment or electronic brake pedals, for example. The sensors have a 360° measuring range, are based on the Hall principle and provide a PWM signal. The test program was created with the “LabView” programming language and is designed for a wide range of test specimens. Defective test specimens are selectively destroyed by overvoltage and disposed of safely.

At the start of the test the signal course of the sensor is defined by means of a programming device. An inspection of the housing characteristics by light and colour sensors ensures that the selected test procedure is suitable for the sensor type. The sensor lever is then turned with a precision drive and the sensor signal recorded synchronously with this process. Julio Chamorro, responsible for hardware and software applications at MCD, explains: “As the resolution capacity of the sensors is 12 bits, the mechanism must be mounted absolutely free from play in order to deliver reproducible results. We have achieved this by using high-precision drives with accurate position feedback, a special bearing and the highest possible manufacturing quality.”

The test station provides numerous results that are important with regard to quality assurance. These include: coding of connection plugs, variant detection via sensors, supply voltage and current, initialisation and response times, jump discontinuities of sensors, linearity of measured values, sensing range, angle of rotation via encoder signals, signal quality at the limits, signal stroke, pitch, index points, output frequencies, sensor torques as well as characteristic curve recording and storage of measured data. A special measured value acquisition function ensures real-time evaluation of the

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measuring and control signals and synchronisation in the PC control. “If we also examine the statistical values with the trend analysis of the MCD data manager, we can detect drifting of values in a specific batch at an early stage and obtain valuable information for the manufacturer,” adds Chamorro.



Picture 1: The test system developed by MCD Elektronik is designed for programming and inspection of Hall sensors and provides a wealth of indispensable data for quality assurance and long-term documentation.

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