



Hella Eyes More Accurate Data for Non-Contact Position Sensors

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PLYMOUTH, MI ([PRWEB](#)) September 30, 2004 -- Hella North America is working with General Motors Corporation and other electronics suppliers to refine the next step in automotive sensor technology.

Hella is part of a group, initiated by GM and including Bosch and Hitachi Limited, to define a digital transmission scheme between sensors and controllers. The new interface is a one-way communications procedure from sensor to controller, which does not require a coordination signal from the controller.

The new protocol is intended as a replacement for the lower-resolution, 10-bit A/D (analog-to-digital) methods and PWM (pulse width modulation). It also provides a simpler, low-cost alternative to CAN (Control Area Network) or LIN (Local Interconnect Network). In addition, the new protocol also will save costs in controller-hardware systems by using one line for several signals.

The first application of the new data-transmission protocol is targeted for air flow meters or Hella's new non-contact position sensors. Hella is a market leader for accelerator pedals and a supplier for inductive non-contact sensors used in applications such as throttle bodies, steering sensors and level sensors for headlamp level-control and suspension-control systems.

The demand for more robust and reliable electronically controlled systems will lead to increased use of non-contact position sensors in a number of other applications. As a result, sensor, controller and vehicle manufacturers are investigating ways to take full advantage of this electronic-sensor technology by implementing appropriate interfaces.

"A new generation of sensors will improve the transmission of data from sensors to controllers in automotive applications," notes Joe Borruso, president and CEO of Hella North America. He explains that the change is necessary because the existing analog transmission protocol is sensitive to changes in connector resistance and other disturbances. It also cannot meet the demands to reliably and more rapidly transmit data with more than 10 bits of resolution.

Under the protocol, data is transmitted as pulse-length variations. It is designed to transmit two 12-bit sensor data plus checksum (to ensure data accuracy), as well as safety and status information. Data are transmitted in a sequence, which consists of a calibration pulse followed by 8 nibbles of 4-bit information. This data can be transmitted in less than 1 millisecond and is applicable for redundant high-speed sensors, for example, throttle, pedal and other sensors within the drivetrain system. Microcontroller manufacturers have confirmed that future controller hardware can handle such a protocol.

The protocol is intended to be free and open for all users. A free protocol allows a common approach throughout the industry, which can lead to less-expensive sensors and controllers for everyone. The protocol also can be used for sensors in other vehicle systems. The group plans to release the specification to automotive standardization organizations such as the Society of Automotive Engineers and other publishing media.

Lighting, electronics, complete vehicle modules, air-conditioning systems, vehicle-wiring systems and signal



processing for the automobile industry, as well as automotive aftermarket components, are the core fields of competency for automotive supplier Hella KGaA Hueck & Co. Sales for the Hella Group are approximately \$3.8 billion, placing Hella among Germany's top 100 industrial companies.

With its corporate headquarters in Lippstadt, Germany, the company employs nearly 24,000 people at 65 manufacturing facilities, production subsidiaries and joint-venture companies in 18 countries. More than 2,000 engineers and technicians work in research and development. All of the world's leading automobile and systems manufacturers are Hella customers as well as the automotive components aftermarket.

Additional information is available on the Internet at www.hella.com.

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