

# Sensors for position measurement

## Throttle valve sensors

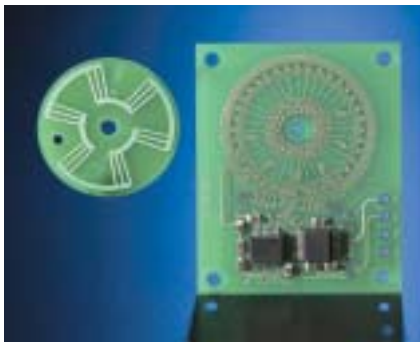
### Hella position sensors using CIPOS technology

An important task of sensor systems in today's vehicles is to determine positions. The wide range of mechatronic systems used in modern vehicles requires position sensors both for reporting the drivers' intentions (measurement of reference values) and determining the state of the engine or vehicle (measurement of actual values).

Alongside established potentiometer technology, Hella also supplies its in-house development, the contactless sensor concept CIPOS (Contactless Inductive Position Sensor). It has been in series production since 1999 and has already proven itself millions of times over. In addition to its insensitivity toward temperature and mechanical tolerances, which is a direct result of its working principle, the straightforward design of the sensor concept is a major advantage of CIPOS. It allows the sensors to be integrated easily and thus implemented economically in the overall application.

### Throttle valve sensor

Throttle valve sensors measure the throttle valve opening. Hella has been producing this technology in series production since 2003.



#### Highlights

- Simple mechanical design
- Adaptable to individual installation conditions
- Minimum package-space requirements
- Robust, temperature-resistant sensor behavior
- Further application possibilities (e. g. EGR valves)

Mechanical data	
Dimensions	typ. 30 mm x 46 mm x 1 mm (PCB through hole plated on both sides)
Rotor	e. g. PCB, punched part, MID technology
Electrical contacting	e. g. bonding, pressing in, spring contacting
Installation location	integrated in the throttle valve
Operating temperature	-40 °C to +150 °C
Measuring range	120° (other angle ranges possible)

Electrical data	
Voltage supply	5 V or VBat
Current consumption	<10 mA per channel
Output signal	PWM or analogue (compatible with potentiometer)
Characteristic curve	programmable (e. g. plateau areas, gradient, index points)
Accuracy	≤+/- 1% versus full scale over service-life and temperature; up to ≤+/- 0.1% versus full scale possible in the index point
Resolution	12 bit in the measuring range
EMV/EMC	meets all the usual automotive requirements

#### Contact

Hella KGaA Hueck & Co.  
Manfred Bartscht

Rixbecker Str. 75  
59552 Lippstadt, Germany

Phone: +49 (0) 29 41 38-85 98  
Fax: +49 (0) 29 41 38-29 14

E-mail: Manfred.Bartscht@hella.com  
Internet: www.hella.com

