

Sensors for position measurement

Single-turn/multi-turn steering-angle sensor

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 determining the driver's wish (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.

Steering-angle sensor

Steering-angle sensors measure the angle and/or the speed of the steering-wheel angle.



Highlights

- True power-on signal
- Combination with a steering-torque sensor in a single housing is possible
- Adaptable to individual installation conditions
- Robust, temperature-resistant sensor behavior
- "Single-turn" and "multi-turn" versions are possible

Mechanical data	
Dimensions	typ. Ø 80 mm x 20 mm (without connector) at shaft diameter Ø 23 or Ø 28 mm
Installation location	variable, e. g. integrated in the steering gear
Operating temperature	-40 °C to +125 °C (optionally 150 °C)
Measuring range	Multi-turn: max. $\pm 810^\circ$ Single-turn: 360°
Rotating range	continuous

Electrical data	
Voltage supply	5 V or VBat
Current consumption	<10 mA per channel
Output signal	2 x PWM (precision and rough track; signal evaluation via vernier algorithm)
Characteristic curve	programmable (e. g. plateau areas, gradient, index points)
Accuracy	$\leq 1^\circ$ over service-life and temperature
Resolution	12 bit in relation to 90°
EMC	meets all the usual automotive requirements

Contact

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