Sensors for position measurement
End-of-shaft 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 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.

End-of-shaft sensor

Rotary angle sensor 360°

Rotary angle sensor 120°

Rotary angle sensor 120°

Highlights

- Simple mechanical design
- Compact package space
- Static sealing concept
- Robust, temperature-resistant sensor behavior
- Versatile use (e. g. transmission sensor, throttle-valve sensor)
- Sensing hollow and solid shafts, even in combination

Mechanical data	
Dimensions	360°: 75 mm x 55 mm (distance between drill holes) x 16 mm 120°: 63 mm x 35 mm (distance between drill holes) x 10 mm 58 mm x 50 mm (distance between drill holes) x 17 mm
Installation location	suitable for the passenger compartment and the engine compartment
Sealing of the sensor	to the environment: IP 6K9 (using the mating-connector) to the shaft: IP 6K9
Operating temp.	–40 °C to +150 °C
Measuring range	0° to 120° or 0° to 360° (continuous)

Electrical data	
Voltage supply	5 V oder VBat
Current consumption	<10 mA pro Kanal
Output signal	360°: 2 x PWM (precision and rough track; signal evaluation via vernier algorithm) 120°: 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
Resolution	12 bit in the measuring range
EMC	meets all the usual automotive requirements

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