



## STEERING SENSORS

As competent partner for steering components HELLA introduced their highly durable and precise steering sensors into the market in 2007. Depending on the sensor type, HELLAs steering sensors provide the customer with up to two forms of feedback, simultaneously: Steering torque or steering torque and angle.

All steering sensors feature HELLAs CIPOS® (Contactless Inductive Position Sensor) technology. CIPOS® is highly accurate, flexible and not susceptible to mechanical tolerances. The straightforward modular sensor design allows ease and affordable vehicle integration due to less packaging, lower weight, and less components.

Apart from steering sensors HELLAs steering competence is based on ECUs, motor position sensors and DC/DC converter offered for Electric Power Steering.

## ADVANTAGES

- Modular design for all types of Electric Power Steering (EPS)
- System integration expertise
- Absolute angle information for output and input shaft
- Ratio metric measuring principle
- Unrestricted programmable torque range: Up to +/- 8 degrees
- Intelligent software design for added safety

## STEERING TORQUE AND ANGLE SENSOR

The sensor records the torsion bar angle required for the steering movement and measures the change in angle and speed of the steering wheel.

### Mechanical Data

|                       |   |
|-----------------------|---|
| Dimensions            | Typ. Ø 60 mm, R40 mm (with connector)                     |
| Location              | Integrated into the electric power steering               |
| Operating temperature | -40 °C to +130 °C   |
| Measuring range       | Max. ±8° (steering torque)<br>Max. ±738° (steering angle) |

### Electrical Data

|                     |  |
|---------------------|--|
| Voltage supply      | 5 V  |
| Current consumption | < 36 mA per channel for SENT signal  |
| Output signal       | SENT or PWM  |
| Accuracy            | < 0.1° (steering torque) and < 0.7° (steering angle) over service lifetime and temperature |
| Resolution          | < 0.01°  |
| EMC                 | Meets all standard automotive requirements   |

## TORQUE ONLY SENSOR

The sensor records the torsion bar angle required for steering movement.

### Mechanical Data

|                       |   |
|-----------------------|---|
| Dimensions            | Typ. Ø 60 mm, R40 mm (with connector)       |
| Location              | Integrated into the Electric Power Steering |
| Operating temperature | -40 °C to +130 °C                           |
| Measuring range       | Max. ±8°                                    |

### Electrical Data

|                     |  |
|---------------------|--|
| Voltage supply      | 5 V  |
| Current consumption | < 36 mA per channel for SENT signal          |
| Output signal       | SENT or PWM                                  |
| Accuracy            | < 0.1° over service lifetime and temperature |
| Resolution          | < 0.01°                                      |
| EMC                 | Meets all standard automotive requirements   |

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