



## Features

- Non-contacting torque sensor
- Provides a differential angle for calculating the steering torque within the ECU
- Operating temperature: -40 °C to +125 °C

## Applications

- Electric power steering systems

# Torque ONLY Sensor

### General Function

This non-contacting torque sensor is used in vehicles featuring electrically-controlled power-assisted steering. The torque sensor measures the rotational deflection of a torsion bar that interconnects the input and output shafts of the steering column. The torsion bar deflects in proportion to the amount of steering effort from the driver. The output signal from the torque sensor is fed into the steering ECU which controls the amount of steering assistance provided by an electrical motor. A higher torque corresponds to a higher level of assistance. Traditional torque sensors used a clockspring to deliver power and transfer the signal; this new sensor eliminates the requirement for a clockspring.

*Please note that this document refers to general product specifications which are subject to change.*

### General Specifications

Output ..... Analog, PWM, SENT, SPC\*  
 Supply Voltage .....  $5 \pm 0.5$  V\*  
 Protection Degree ..... TBD\*  
 Operating Current ..... 40 mA typ.  
 Dark Current ..... 0 mA  
 Temperature Range ..... -40 °C to +125 °C

### Torque Specifications

Total Travel - Mechanical ..... No mechanical limit  
 Angular Measurement Range .....  $\pm 4$  ° typ.\*  
 Resolution ..... 0.005 °  
 Ripple .....  $\pm 0.065$  ° max.  
 Hysteresis ..... 0.04 ° max.  
 Total Error .....  $\pm 0.15$  ° max.  
 Sensitivity Error .....  $\pm 3$  % max.  
 Channel to Channel Error ..... 0.02 ° max.  
 Signal Noise ..... 0.015 ° max.

\* Application Specific

For improved or different specifications, contact Bourns engineering.

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REV. 09/11

Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.