

Start-Stop-Sensor

- The sensor recognizes neutral position in manual-shift transmissions
- Expansion of a classic transmission detent pin to provide intelligent position sensing
- Contact- and wear-free measurement
- Inductive, magnet-free measuring principle
- Flexible
- Compact and robust construction
- Immediately indicates position when switched on

Application

Detent pin are used in manual gearboxes or transmission towers to secure the shift position mechanically and to convey a specific feel upon shifting. The Start-Stop Sensor by paragon can determine the neutral position electronically in addition to these traditional functions. A vehicle's start-stop system must recognize the neutral position reliably in order to restart the engine following an automatic stop.

The combination of a transmission detent pin with a pick-up element makes it possible to determine various shift positions. The system determines neutral and other positions in the gearbox and transmits this information to start-stop systems. It can also generate signals for a rear-view camera or for acoustical back-up signals.

paragon AG
Schwalbenweg 29
33129 Delbrück · Germany
Phone: +49(0)5250-9762-0
Fax: +49(0)5250-9762-60
E-Mail: info@paragon.ag
Internet: www.paragon.ag



Design and Function

The Start-Stop Sensor by paragon is a combination transmission detent pin and contact-free position sensor. The position sensor indicates precisely how deeply the head of the screw has been pressed down. The travel is measured purely by inductive means, without the use of permanent magnets.

A coil, whose core is mechanically connected to the head of the transmission detent pin, carries out measurement by determining the inductivity. The lowering screw head leads to a translation of the coil's core. The coil's inductivity thus changes, which forms the basis for measuring travel.

A processor-based measuring circuit determines the inductivity of the coil, which is influenced by how deeply the coil's core has been depressed. The specially designed coil makes it possible to detect disturbances, such as temperature, and to compensate for them by means of algorithms. The coil's output can be encoded to a great extent and interface logs such as PWM, LIN and SENT can be implemented.

Since no permanent magnets are used, the usual problem of metal shavings depositing onto the magnet from gear wear and tear and falsifying the signal, cannot occur.

Technical Specifications

Parameter	Value	Note
Operating voltage	12 V	
Power consumption	approx. 25 mA @ 13,5 V u. 25° C	
Range of measurement	0,00 mm ... 6,00 mm	
Resolution	3 µm	
Calibration	Yes	
Self-diagnosing	Yes	
Interfaces	PMW, SENT, LIN, CAN	
Operating temperature	- 40° C ... 150° C	160° C for 100 hours
Protective system	IP 6K9K	