

Features

- Non-contacting sensor technology
- Sensor can be placed outside of the gearbox
- MR or HE technology
- Electronic calibration
- Linear and rotary options available

Applications

- Neutral zone detection (automatic transmission)
- Neutral gear position (manual transmission)
- Reverse light switch on/off
- Park sensor on/off
- Reverse camera aid on/off

Neutral Reverse Gear Position Sensor

Introduction

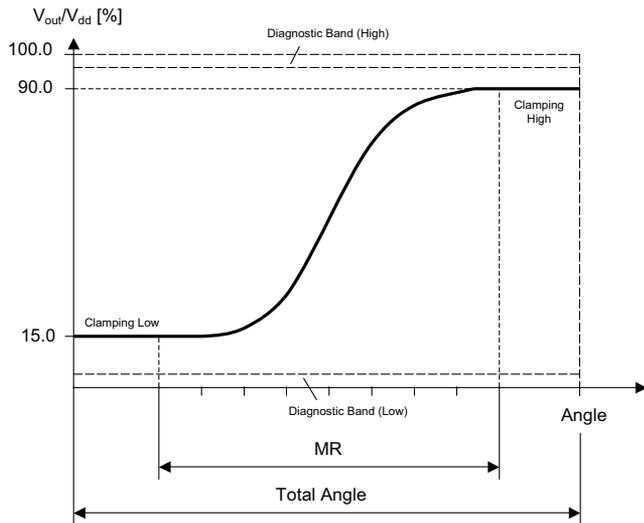
For manual transmissions, the Bourns® Neutral Reverse Gear Position Sensor is used to determine the neutral gear position for stop/start applications. The start/stop system shuts the engine down automatically when the vehicle comes to a stop. For a vehicle with a manual transmission, the engine will restart once the gear lever is placed in neutral and the clutch pedal has been released.

A neutral position detection sensor is used in automatic transmissions only to prevent in-gear starting. An automatic transmission uses neutral gear detection as a safety function to disable the starter operation if the gear selection is not in either neutral or park mode. If the engine was allowed to start in any other gear, the car would immediately lurch forward once the engine started.

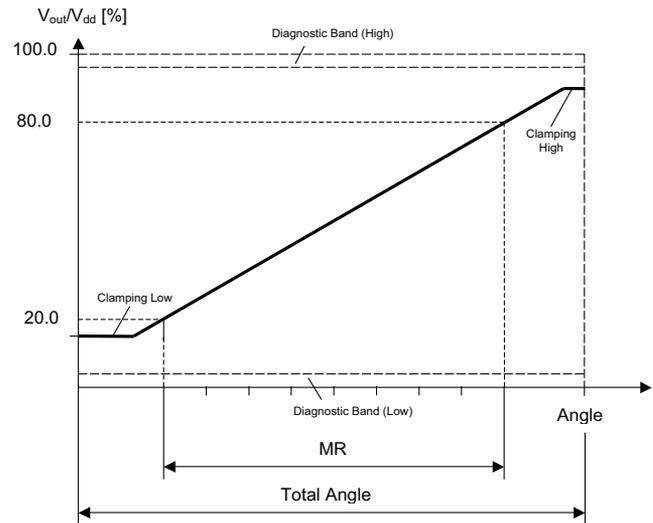
On many vehicles, the reverse light function is integrated into the neutral position sensor; the same function is now also used for engaging park position sensors and/or the reverse camera. The Bourns® Neutral Reverse Gear Position Sensor can be configured with two independent signals that provide a clearly separate signal for the neutral and reverse detection function.

The sensor may be placed internally in the gearbox or outside of the gearbox casing.

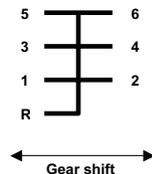
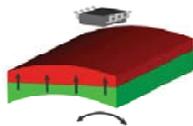
1D Rotary Sensor - Reverse Gear



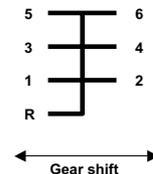
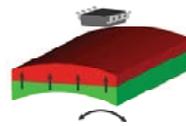
1D Rotary Sensor - Gears #1 through #6



Output : Gear shift (Rotary)
(Reverse gear)



Output: Gear shift (Rotary)
(Gears #1 to #6)



Neutral Reverse Gear Position Sensor

BOURNS®

Typical Parameters

Total Length.....	2 x MR + X mm	Ratiometry Error	± 0.15 % V _{dd} **
Air Gap Magnet Sensor.....	5 ~ 8 mm typical	Temperature Drift.....	0.5 % V _{dd} typical
Operating Temperature.....	-40 to +125 °C	Supply Voltage	5 ± 0.25 V
Protection Degree	TBD*	Supply Current	< 30 mA
Linearity	± 2.0 % MR	Output Modes	Analogue, PWM
Resolution	< 0.1 % MR		

* Application Dependent

** Analogue mode only

For higher temperature range or improved accuracy applications, please contact Bourns engineering.

BOURNS® *Automotive Division*

Europe:

Bourns Sensors GmbH
Robert-Bosch-Str. 14
D-82054 Sauerlach
Phone: +49 (0) 8104 646-0

The Americas:

Bourns, Inc.
1660 N. Opdyke Road, Ste. 200
Auburn Hills, MI 48326-2655 USA
Phone: +1 248 926-4088

Asia:

Bourns, Inc.
10F, No. 146, Sung Jiang Road
Taipei, Taiwan, 104 PRC
Phone: +886 2 2562-4117

www.bourns.com

automotive@bourns.com