

HALL BASED SOLUTION AUTOMATIC GEAR SHIFTER

COMFORT OF AUTOMATIC SHIFTER

Nowadays, more and more vehicles go for an automatic shifter instead of a manual shifter. Especially in urban areas with myriad traffic jams and lights, people suffer from switching shifter frequently, thus losing their driving enjoyment.

LINEAR VERSUS ROTARY

For automatic shifters, there are two types of selections: a linear shifter with PRNDL or PRND M+/- (including manually select) and a rotary PRNDL shifter.



The connection between the shifter and the transmission in an automatic system is using a contactless way of sensing through electric signal (shift by wire).

In order to sense the shifter position in a gear box, we recommend the use of a Hall sensor. It not only detects the position but also gives a signal to the transmission for gear selection. This signal is used by the Transmission Control Unit (TCU) for further control.

Depending on the mechanical design, either a Hall switch or a Triaxis® Hall sensor is used to detect all PRNDL positions.

Melexis offers an optimal solution for both designs.

SOLUTIONS

MLX92231: PRE-PROGRAMMABLE HALL SWITCH

- ✓ Wide range of pre-programmable thresholds (+/- 1.5mT to +/- 66mT)
- ✓ Flexible configuration with active pole (South or North)
- ✓ Inverted or direct output
- ✓ Pre-programmed TC coefficient to compensate magnet degradation due to increased operation temperature
- ✓ Dual die option available for redundancy

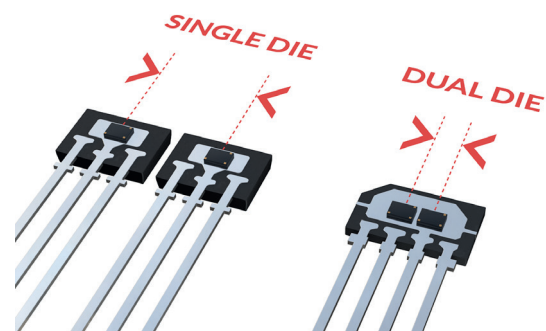
Thanks to its flexibility, customer mechanical designs will become simpler and cost-efficient: more freedom for mechanical designs using low-cost magnets.

US5881LSE/ US5781LSE/ US5782LSE: UNIPOLAR HALL SWITCH

- ✓ Fixed switching thresholds to meet markets where costs are sensitive

MLX92291: PRE-PROGRAMMED HALL SWITCH - ASIL-B (ISO26262)

- ✓ Wide range of pre-programmable thresholds (+/- 90 mT)
- ✓ Flexible configuration with active pole (South or North)
- ✓ Inverted or direct output
- ✓ Programmable TC coefficient
- ✓ Micro-power option available for wake-up functionality
- ✓ Dual die option available for redundancy
- ✓ Developed according to ISO26262 as safety HW element out of context with ASIL-B level



MLX90363: 3D HALL SENSOR

- ✓ 0 - 360 degree angle detection
- ✓ SPI protocol with real angle position (X/Y/Z) directly to customer MCU

This solution is ideal for rotary shifter detection. And it can also be used for linear position detection.

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