Melexis

INSPIRED ENGINEERING

MLX90377

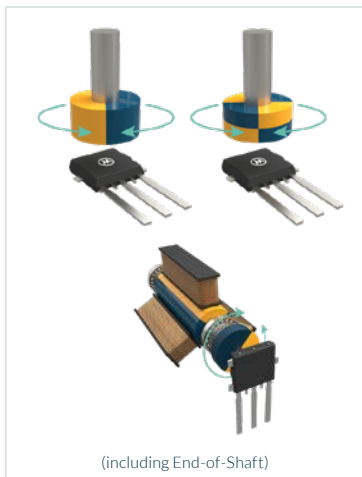## TRIAXIS® PERFORMANCE

MAGNETIC POSITION SENSOR

The MLX90377, an angular and linear motion magnetic position sensor, offers high performance, safety, and integration for demanding automotive and industrial applications.
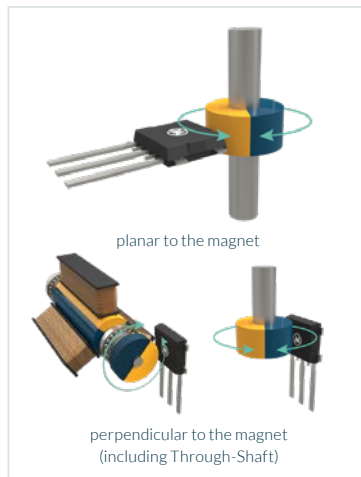
MLX90377

⊗Triaxis®

- ✓ Multiple output modes including **SPC output** for applications requiring multi-sensor bus architecture

- ✓ Developed according to **ISO26262** as a SEooC (Safety Element out of Context)
  - ASIL-C for (fast) SENT, SPC and PWM Output modes
  - ASIL-B for analog output mode

- ✓ **Improved Absolute Maximum Rating** (AMR) such as an output reverse polarity at -18 V, thus improving robustness to electrical over stress (EOS)

- ✓ **New package Single-Mold-Package (SMP)**, a PCBless solution. The new package is smaller than the DMP-4 with improved mechanical integration features for lower cost of quality
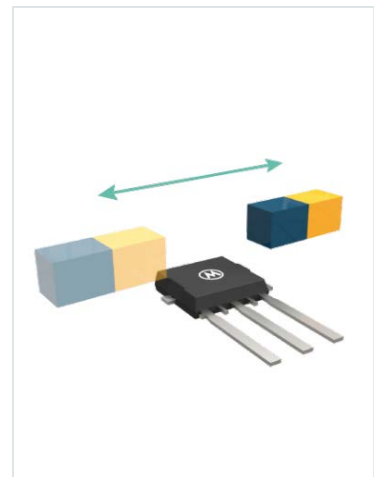
On-axis

Off-axis

Linear

planar to the magnet

perpendicular to the magnet
(including Through-Shaft)
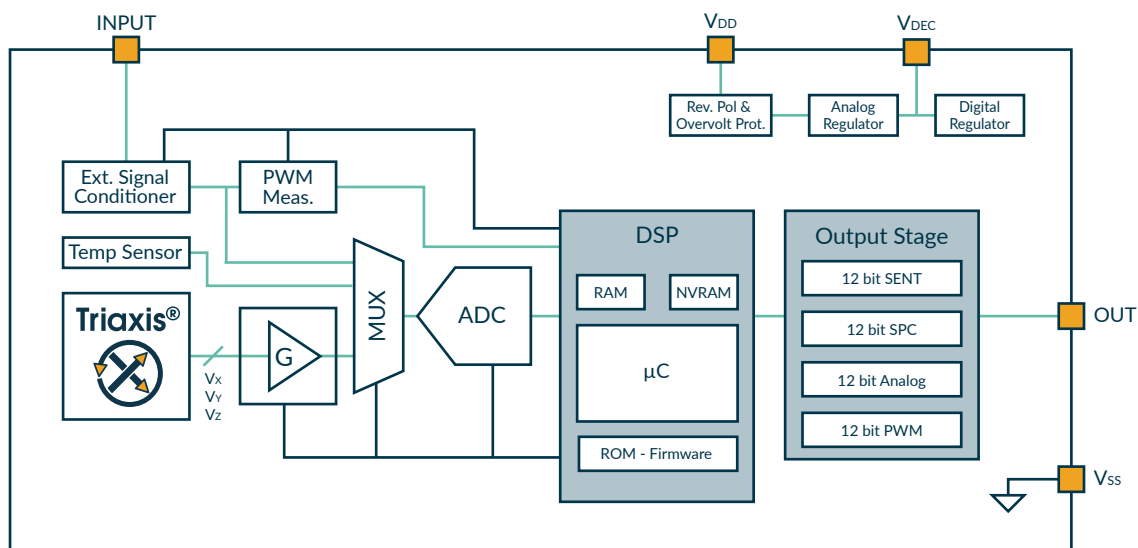
(including End-of-Shaft)

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KEY FEATURES

- Supported Output modes
  - (fast) SENT (SAE J2716 APR2016)
  - SPC (Short PWM Code)
  - PWM (Pulse Width Modulation)
  - Ratiometric Analog
- Programmable Linear Transfer Characteristic
  - Up to 32 programmable calibration points
- Programmable Measurement Range
  - Up to 360 degrees rotary
  - 30mm (or more) linear stroke
- Robustness against stray-field up to 5mT
- Operating supply voltage from 4.5 V to 18 V
- Operating temperature from -40°C to 160°C
- Triaxis® Hall Technology for performance and flexibility

- On Chip Signal Processing for Robust Absolute Position Sensing
- Enhanced serial data communication
- 48 bits usable for customer traceability
- Packages, RoHS compliant
  - SOIC-8 (DC), Single Die
  - TSSOP-16 (GO), Dual Die (Redundancy)
  - DMP-4 (VS), Single Die in Dual Mold PCBless solution
  - SMP-3 (VE), Single Die in Single Mold PCBless solution
- Certification
  - AEC-Q100 Grade-0
  - ISO26262 SEooC (Safety Element out of Context)
    - ASIL-C capable for (fast) SENT, SPC and PWM Output modes
    - ASIL-B capable for analog output mode

APPLICATION EXAMPLES

- Brake stroke / travel sensor
- Transmission sensor
- Acceleration pedal position sensor
- Powertrain actuator sensors (EGR, ETB)
- Ride height position sensor

Steering wheel

Brake stroke / travel sensor

BLOCK DIAGRAM