



MLX90377

TRIAxis® PERFORMANCE

MAGNETIC POSITION SENSOR



Thanks to its magnetic compass the fascinating honey bee has the ability to perceive the omnipresent magnetic field (MF) of the Earth. This magnetic field sensitivity matches this wonderful creature with our Triaxis® magnetic sensors.

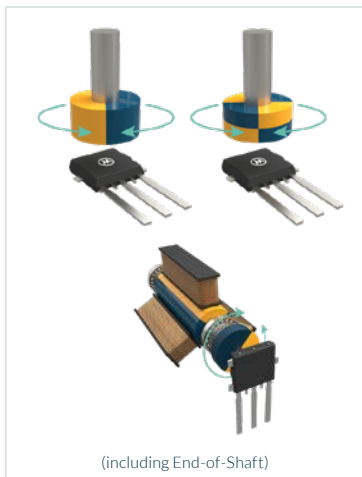
The MLX90377, an angular and linear motion magnetic position sensor, offers high performance, safety, and integration for demanding automotive and industrial applications.

MLX90377

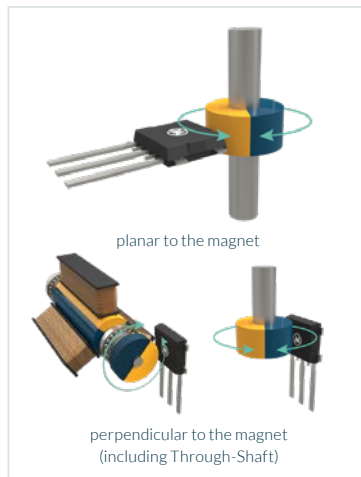


- ✓ Multiple output modes including **SPC output** for applications requiring multi-sensor bus architecture
- ✓ Developed according to **ISO26262** as a SEooC (Safety Element out of Context)
 - ASIL-C for (fast) SENT, SPC and PWM Output modes
 - ASIL-B for analog output mode
- ✓ **Improved Absolute Maximum 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

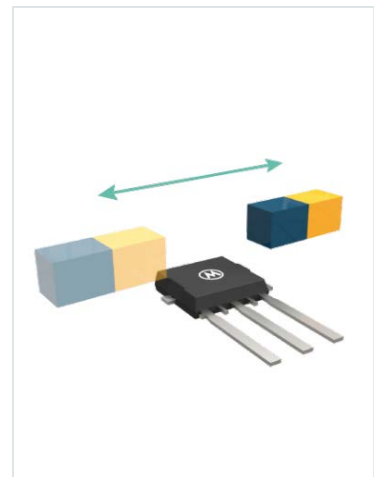
On-axis



Off-axis



Linear



KEY FEATURES

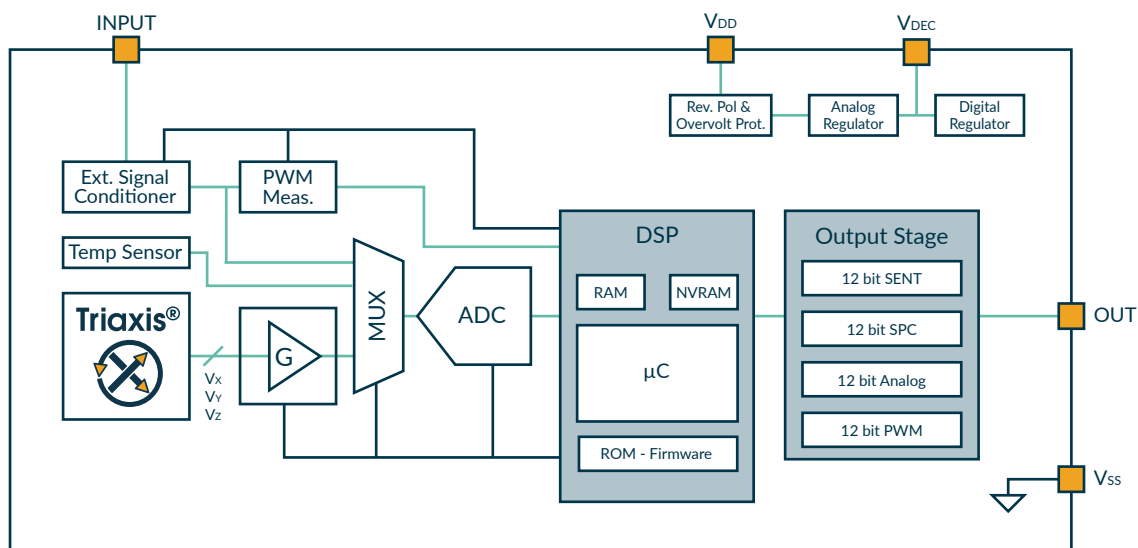
- ✓ Supported Output modes
 - (fast) SENT (SAE J2716 APR2016)
 - SPC (Short PWM Code)
 - PWM (Pulse Width Modulation)
 - Ratiometric Analog
- ✓ Programmable Linear Transfer Characteristic
 - Up to 32 programmable calibration points
- ✓ Programmable Measurement Range
 - Up to 360 degrees rotary
 - 30mm (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



BLOCK DIAGRAM



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