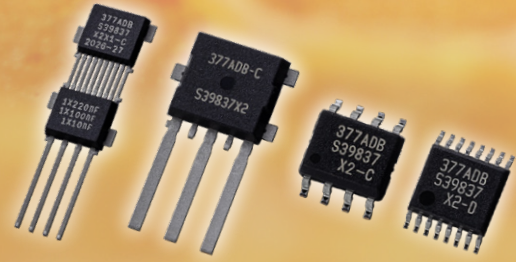




MLX90377

TRIAxis® PERFORMANCE

MAGNETIC POSITION SENSOR



Thanks to its magnetic compass the fascinating honeybee 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.

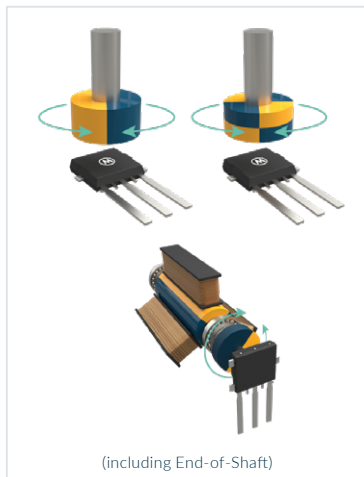
The MLX90377, an angular and linear motion magnetic position sensor, offers high performance, safety, and integration for demanding automotive and industrial applications.

MLX90377

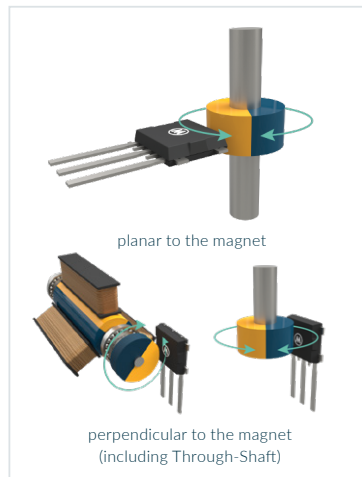


- ✓ Multiple output modes (Analog, PWM, SENT) including **SPC output** for applications requiring multi-sensor bus architecture
- ✓ Developed according to **ISO26262** as a SEooC (Safety Element out of Context)
 - ASIL-C for (fast) SENT, PWM Output modes
 - ASIL-B for analog output mode
- ✓ **Improved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

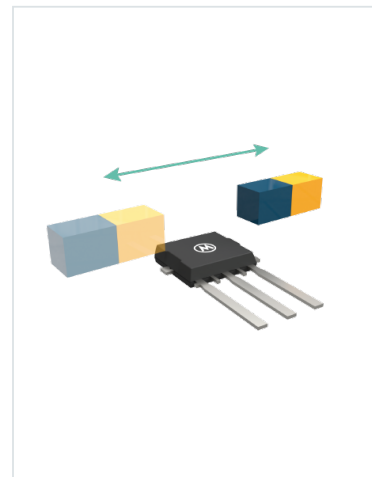
On-axis



Off-axis



Linear



KEY FEATURES

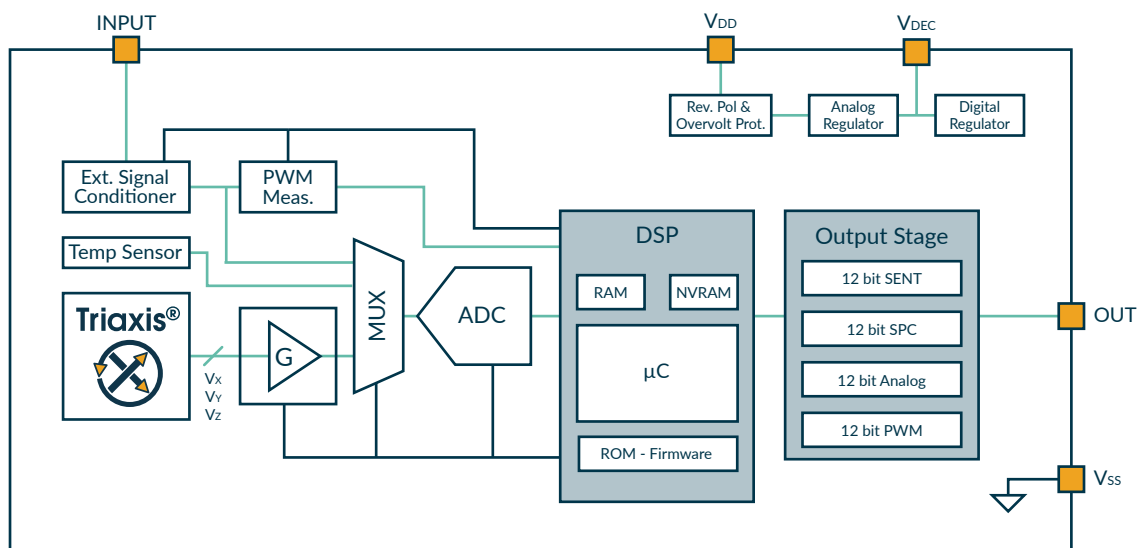
- ✓ Supported Output modes
 - (fast) SENT (SAE J2716 APR2016)
 - SPC (Short PWM Code)
 - PWM (Pulse Width Modulation)
 - Ratiometric Analog
- ✓ Programmable Linear Transfer Characteristic
 - Up to 32 programmable calibration points
- ✓ Programmable Measurement Range
 - Up to 360 degrees rotary
 - 30mm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



The above information is "as is" and believed to be correct and accurate. Melexis disclaims any and all liability in connection with or arising out of the furnishing, application or use of the information or products; any and all liability, including without limitation, special, consequential or incidental damages and any and all warranties, express, statutory, implied, or by description, including warranties of fitness for particular purpose, non-infringement and merchantability. Melexis reserves the right to change it at any time and without notice. Users should obtain the latest version of the information to verify it is current. Users must further determine the suitability of a product for its application, including the level of reliability required and determine whether it is fit for a particular purpose. Export control regulations may apply and export might require a prior authorization from competent authorities. Melexis' products are intended for use in normal commercial applications. Unless otherwise agreed upon in writing, the products are not designed, authorized or warranted to be suitable in applications requiring extended temperature range and/or unusual environmental requirements. High reliability applications, such as medical life-support or life-sustaining equipment are specifically not recommended by Melexis. Melexis' products are sold under the Melexis' Terms of Sale, which can be found at <https://www.melexis.com/en/legal/terms-and-conditions>.