

MLX9042x

TRIAxis® MAINSTREAM

MAGNETIC POSITION SENSOR



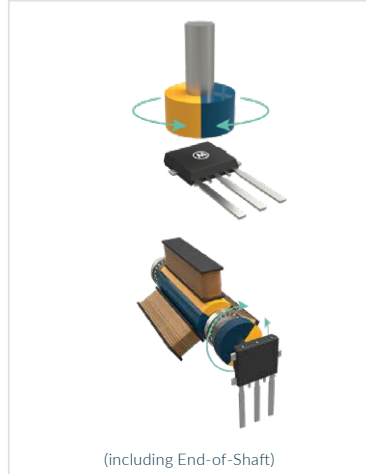
Featured with magnetoreception, homing pigeons have the ability to sense Earth's magnetic field. This faculty explains their impressive navigation skills.

STANDALONE 3D POSITION SENSORS FOR DEMANDING APPLICATIONS

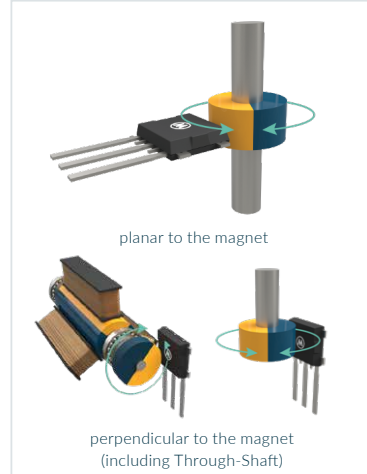
MLX9042x 

The MLX9042x series is designed for use in cost-sensitive automotive applications including powertrain actuators, pedal positioning, fuel level gauges and transmission systems, though also suitable for industrial implementations. It consists of a Triaxis® Hall magnetic front end, an analog to digital signal conditioner, a DSP for advanced signal processing and a programmable output stage driver (analog, PWM or SENT). The MLX9042x series has superior capabilities in terms of functional safety, absolute maximum ratings (AMR), electromagnetic compliance (EMC) characteristics and supports operating temperature up to 160 °C.

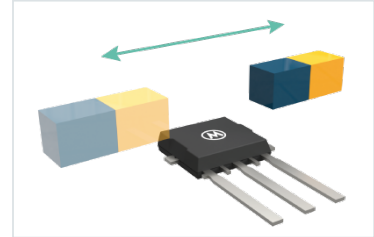
On-axis



Off-axis



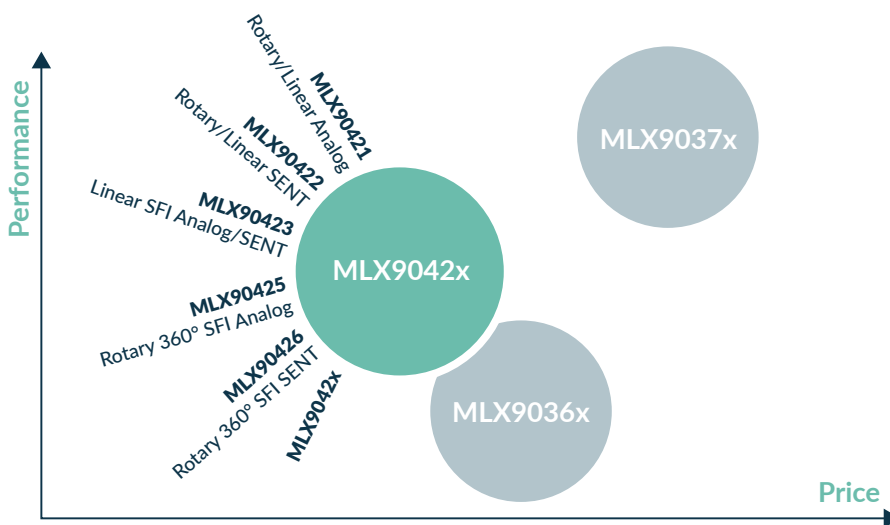
Linear



MLX9042x KEY FEATURES

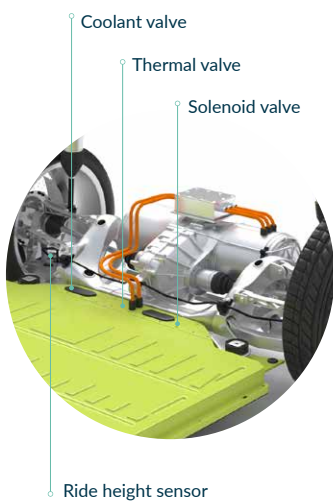
- ✔ Supported output modes:
Ratiometric analog, PWM or SENT
- ✔ Programmable measurement range
- ✔ Programmable linear transfer characteristic with up to 17 points
- ✔ Operating temperature from -40°C to 160°C
- ✔ On chip signal processing for robust absolute position sensing
- ✔ Robustness against stray magnetic field up to 5 mT (or 4 kA/m) as per ISO 11452-8
- ✔ Triaxis® Hall technology
- ✔ Packages, RoHS compliant
 - SOIC-8 (DC) Single Die
 - TSSOP-16 (GO) Dual Die (redundancy)
 - DMP-4 (VS), Single Die PCB-less solution
 - SMP-3 (VE), Single Die PCB-less solution
 - SMP-4 (VD), Dual Die PCB-less solution
- ✔ Certification
 - AEC-Q100 Grade-0
 - ISO 26262 ASIL B or ASIL C Safety Element out of Context (SEooC)

MLX9042x FAMILY

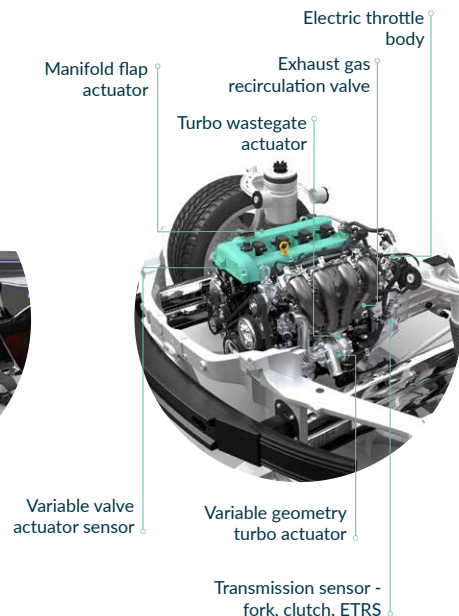


MLX9042x APPLICATION EXAMPLES

- ✔ Absolute Rotary Position Sensor



- ✔ Absolute Linear Position Sensor



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>.