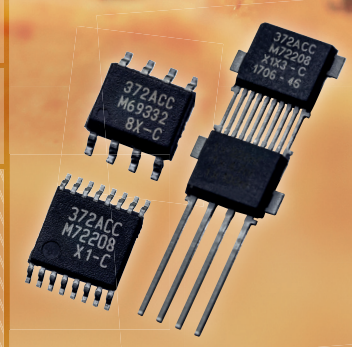




MLX90372

TRIAxis® GEN III

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.

MAGNETIC FIELD SENSOR

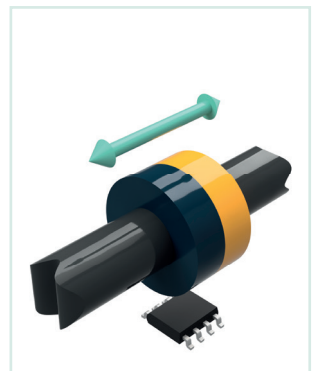
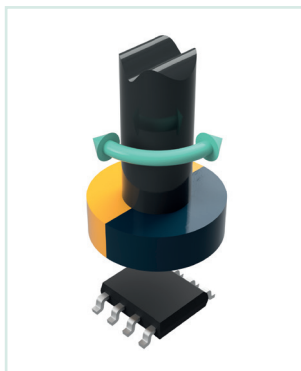
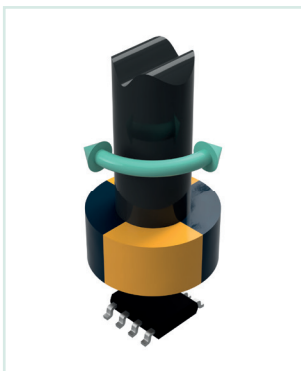
The MLX90372 is the newest addition to the Melexis position sensing portfolio bringing stray field immunity to the Triaxis® family. Featuring a SENT or PWM output signal the MLX90372 supports a wide variety of automotive position sensing applications from powertrain actuators to human machine interfaces.

MLX90372



Building upon the long legacy of the Triaxis® sensors the MLX90372 brings substantial improvements over the previous generation. The new stray field immune mode drastically reduces or eliminates the effect of stray fields from other magnets or current carrying conductors found in electrified vehicles and supports both on-axis rotary or linear motion with a four-pole or two-pole magnet, respectively. For customers not requiring stray field compatibility, or those requiring off-axis sensing, the MLX90372 is also backwards compatible in both pinout and magnetic design to the MLX90366 and MLX90367 that utilize a two-pole magnet. Additionally many aspects of the sensor are improved including EMC capability, higher temperature operation (up to 160°C ambient), and thermal drift performance.

Finally with its ASIL-C (SEooC) readiness, and fully-redundant dual-die package option, the MLX90372 is well placed to support the majority of automotive sensing applications.



- ✓ Highly flexible and robust position sensor
- ✓ Stray field immune (up to 4kA/m) mode of operation
- ✓ SENT or PWM output
- ✓ EMC capable to automotive OEM requirements
- ✓ ASIL-C (SEooC) component
- ✓ SOIC-8, single-die package
- ✓ TSSOP-16, redundant dual-die package
- ✓ DMP-4, single-die PCB-less package
- ✓ In-application programmable
- ✓ $T_a = -40 \dots 160^\circ\text{C}$

AUTOMOTIVE SENSING APPLICATIONS

The MLX90372 lends itself to a wide variety of automotive position sensing applications from powertrain actuators to HMI like shifters. The new stray field immune mode reduces design constraints especially in electrified vehicles and meets OEM requirements for stray fields up to 4kA/m. Additionally, the 160°C temperature capability allows for use in actuators exposed to hot environments like a turbocharger wastegate while the enhanced linearization capability reduces accuracy errors caused by tolerances in the mechanical assembly. The MLX90372 also includes the ability to read an external signal and multiplex it onto the SENT bus. This can facilitate higher integration, reduction of wire harness size and complexity, and opens new possibilities for combining pressure, temperature, or additional position sensor measurements in one module.



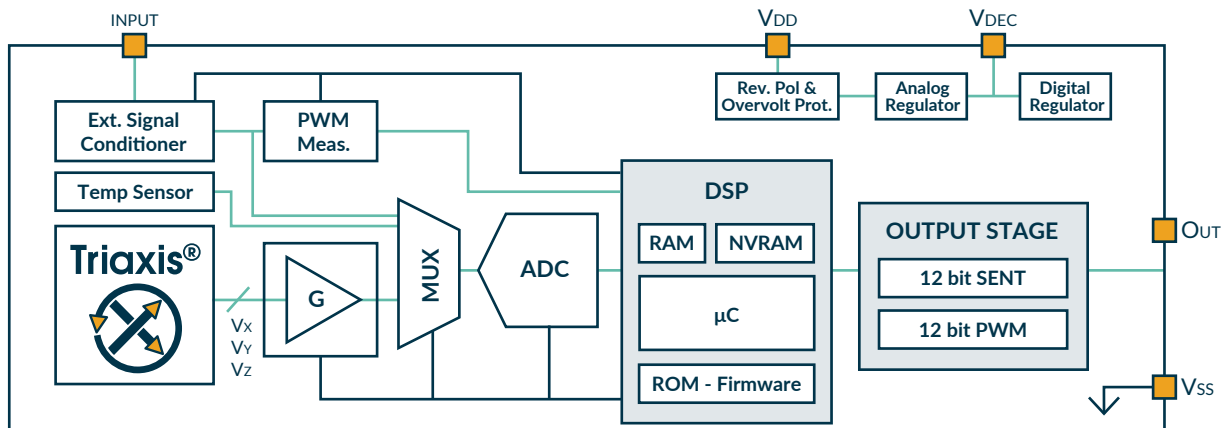
MULTIPLE DIFFERENT SENSING MODES:

	Motion				
	On-Axis Rotary		Off-Axis Rotary	Linear	
Stray Field Immune	Yes	No	No	Yes	No
Magnet Poles	4	2	2	2	2
Range	180 deg	360 deg	360 deg	15mm+	25mm+

MAIN APPLICATIONS

1. Automotive Powertrain
 - Electric throttle body sensor
 - Coolant valve sensor
 - Turbo wastegate sensor
2. Human-Machine Interfaces
 - Shifters (rotary knob and lever type)
 - Selection (menu, volume) knobs
3. Automotive Transmission
 - Clutch and fork position sensing
 - Lever/slide switch linear stroke
4. Automotive Chassis & Safety
 - Ride-height sensor
 - Fuel level sensor
 - Accelerator, brake, and clutch sensor

BLOCK DIAGRAM



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