Melexis
INSPIRED ENGINEERING

The arctic fox: While hunting, the Arctic fox uses the magnetic north to locate its prey beneath the snow. No wonder it is the perfect metaphor for our wide portfolio of magnetic sensors. In addition the Arctic fox lives in some of the coldest places on earth. Yet, it does not start to shiver until the temperature drops to – 70 °C. Being able to function in even the most extreme weather conditions is a feat it shares with our products.

MLX90381

TRIAXIS® PICO-RESOLVER

MOTOR POSITION SENSOR

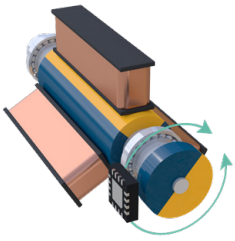
HIGH SPEED OPERATION AND FLEXIBLE THROUGH-SHAFT POSITIONING

MLX90381

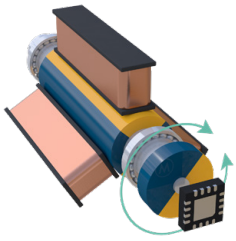
Beyond small, the world's first pico-resolver! The MLX90381 is a 3D magnetic resolver IC optimized for robust motor design: smallest footprint, programmable at module level, cost-effective and ASIL-ready. Its tiny DFN-6 (2 mm x 2.5 mm) package enables sensored mechatronic miniaturization. Its ability to measure the absolute angle ensure more efficient and safer motor control algorithms such as field oriented control algorithms. This ASIL-ready solution is programmable at module level and is best suited to rotor position detection in automotive and industrial applications.

KEY FEATURES

- Sine and cosine analog outputs (ratiometric)
- Output refresh rate 2µs (> 50'000 e-rpm)
- ISO 26262 ASIL B SEooC (Safety Element out of Context)
- AEC-Q100
- Onboard programming through I2C protocol
- Flexible mechanical design enabled by selectable magnetic field axis (X/Y - X/Z - Z/Y)
- Programmable sensitivity range:
  - mid field 10...70mT
  - high field 40...160mT
- End-of-shaft / through-shaft operation
- RoHS compliant package DFN-6 single die



Off-axis (Through-shaft)



On-axis

APPLICATIONS

- Absolute Rotary Position Sensor
- Brushless Motor Control
- Field-Oriented Motor Control

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