

Press Release

Azoteq announces the IQS624, the world's first Hall rotation sensor optimized for consumer electronics

Azoteq's IQS624 is the first Hall rotation sensor with additional capacitive and inductive sensing capabilities in a single DFN (3x3)-10 package

Austin, Texas, March 17th - **Azoteq**, a pioneer in sensor fusion, today announced the release to market of the IQS624. The IQS624 is the first Hall rotation sensor, not only optimized for the consumer electronics industry, but also embedding two additional sensor technologies: capacitive touch and proximity, along with inductive sensing – all in a single, low-profile DFN (3x3)-10 package.

The IQS624 ProxFusion™ IC is a multifunctional Hall-effect, capacitance and inductance sensor designed for applications in which any or all of the technologies may be required. The two Hall-effect sensors calculate the angle of a magnet rotating parallel with or perpendicular to the on-chip sensor. The sensor is fully I²C compatible and on-chip calculations enable the IC to stream the current angle of the magnet without extra calculations. The inductive sensing is suitable for the detection of metallic objects, while capacitive sensing provides human touch and proximity detection.

“The IQS624 is a truly revolutionary device that rivals the price point of traditional optical or mechanical encoders, but at an accuracy of 1 degree and capable of 10,000 rpm max measurements,” said Jean Viljoen, VP of Marketing.

Features:

- **Hall-effect sensor:**
 - On-chip Hall plates
 - 360° output
 - 1° resolution, calculated on chip
 - Detects movement and the direction of movement
 - Relative rotation angle
 - Raw data: can be used to calculate degrees on external processor
 - Wide operational range
 - No external components required
 - Continuous auto-calibration, compensation for wear or small displacements of the sensor or magnet
- **Capacitive sensing:**
 - Full auto-tuning with adjustable sensitivity
 - 2 pF to 200 pF external capacitive load capability
 - Proximity / touch
 - Proximity wake-up

- Wake Hall sensing on proximity

Inductive sensing:

- Only external sense coil required (PCB trace)

Low power consumption:

- 240 uA (100 Hz response, Hall)
- 55 uA (100 Hz response, capacitive)
- 65 uA (20 Hz response, Hall)
- 15 uA (20 Hz response, capacitive)
- 5 uA (5 Hz response, capacitive)
- Standard I²C interface
- Optional **RDY indication** for event-mode operation
- Supply voltage: 2.0 V to 3.6 V (5 V version available on special request)

Applications

- Mouse wheel
- Speedometer
- Dial or selector knob
- Water- or dust-proof rotation input devices

Pricing and availability

The IQS624 is priced at \$0.76 in quantities of 1 K and \$0.30 for orders greater than 1 M.

IQS624 samples, production quantity and evaluation kits are available from Mouser now. Comprehensive engineering support is available from the [ARM® mbed™ community](#). Sample code for Arduino Uno is available on Azoteq's website with STMicro's Nucleo following shortly.

About Azoteq (Pty) Ltd

Azoteq (www.azoteq.com) is a pioneer in sensor fusion. With more than 12 years of capacitive sensing experience, the sensor offering is now expanded to include multi-sensor technologies on single ICs. The first generation of ProxFusion™ offers capacitive sensing, Hall-effect, IR, PIR, inductive and ambient light sensing. Azoteq has design and manufacturing centers in South Africa and China, and sales offices and distributors in South Africa, Asia, Europe and the USA.

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