IQS624 Overview

Combination sensor including: Hall-effect rotation sensing, along with dual-channel capactive proximity/touch sensing, or single-channel inductive sensing.

The IQS624 ProxFusion™ IC is a multifunctional capacitive and Hall-effect sensor designed for applications where any or all of the technologies may be required. The two Hall-effect sensors calculate the angle of a magnet rotating parallel with the sensor. The sensor is fully I^2C compatible and on-chip calculations enable the IC to stream the current angle of the magnet without extra calculations.

Features

- **Hall effect angle sensor:**
  - On-chip Hall plates
  - 360° Output
  - 1° Resolution, calculated on chip
  - Relative rotation angle.
  - Detect movement and the direction of movement.
  - Raw data: can be used to calculate degrees on external processor.
  - Wide operational range
  - No external components required
- **Partial auto calibration:**
  - Continuous auto-calibration, compensation for wear or small displacements of the sensor or magnet.
  - Flexible gain control
  - **A**utomatic **T**uning **I**mplementation (**ATI**) – Performance enhancement (10 bit).
- **Capacitive sensing**
  - Full auto-tuning with adjustable sensitivity
  - 2pF to 200pF external capacitive load capability

Inductive sensing

- Only external sense coil required (PCB trace)

- **Multiple integrated UI**
  - Proximity / Touch
  - Proximity wake-up
  - Event mode
  - QRD (Quick release detection)
  - Wake Hall sensing on proximity
- Minimal external components
- Standard **I^2C** interface
- Optional RDY indication for event mode operation
- **Low power consumption:**
- 240uA (100Hz response, Hall)**,**
- 55uA (100Hz response, capacitive)**,**
- 65uA (20Hz response, Hall)
- 15uA (20Hz response, capacitive)
- 5uA (5Hz response, capacitive)
- Supply Voltage: 2V to 3.6V*****

***5V solution available on demand.**

DFN10

Representations only, not actual markings

Applications

- Anemometer
- Dial or Selector knob
- Mouse wheel
- Measuring wheel
- Digital angle gauge
- Speedometer for bicycle

Available Packages	
T_A	DFN(3x3)-10
-20°C to 85°C	IQS624-xyy

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The following patents relate to the device or usage of the device: US 6,249,089; US 6,952,084; US 6,984,900; US 7,084,526; US 7,084,531; US 8,395,395; US 8,531,120; US 8,659,306; US 8,823,273; US 9,209,803; US 9,360,510; EP 2,351,220; EP 2,559,164; EP 2,656,189; HK 1,156,120; HK 1,157,080; SA 2001/2151; SA 2006/05363; SA 2014/01541; SA 2015/023634

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