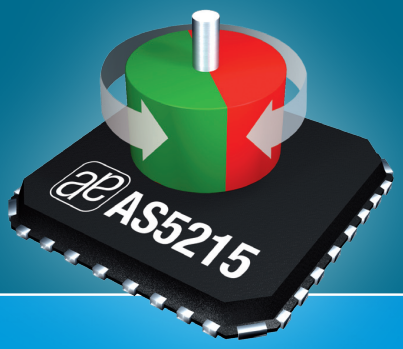
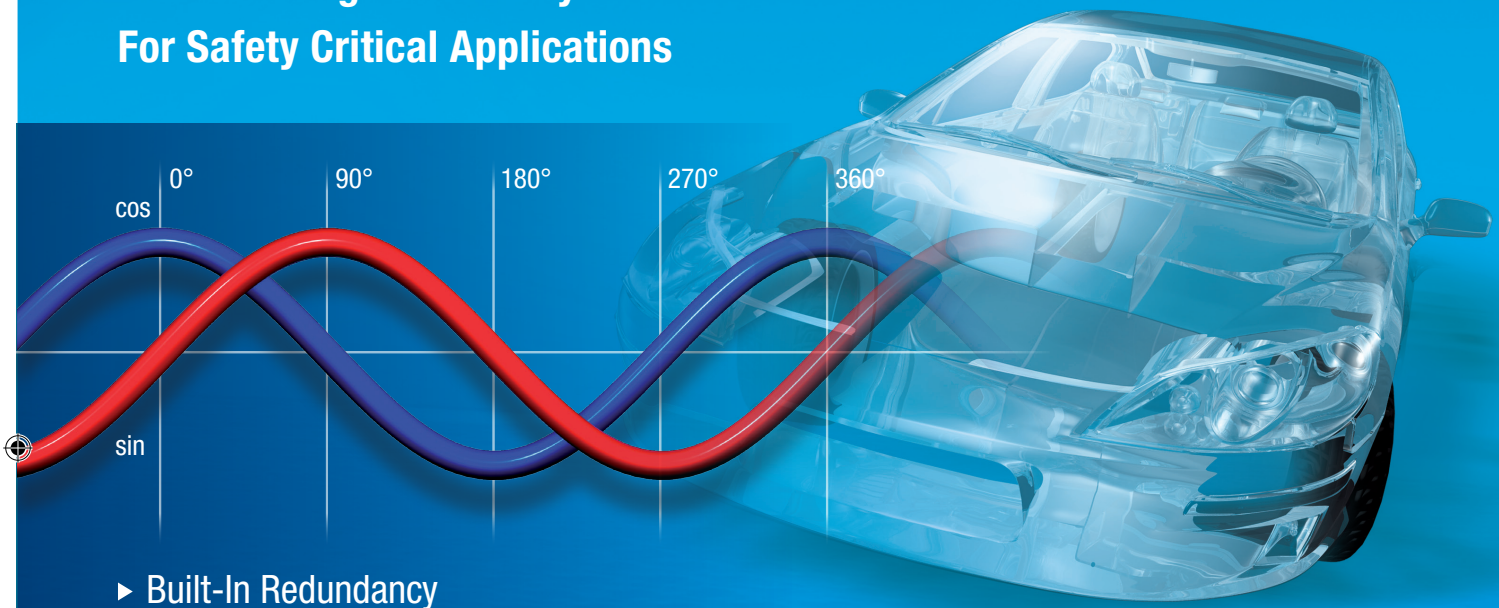
Simply Magnetic



AS5215

Fail Safe Magnetic Rotary Encoder
For Safety Critical Applications

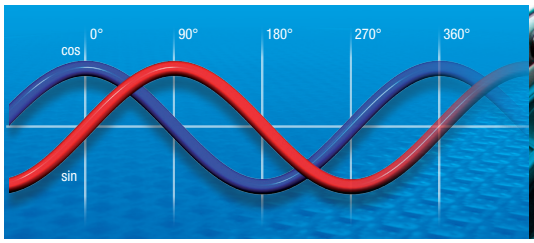


- Built-In Redundancy
- Analog Sin/Cosine output
- Adjustable output amplitude
- 150°C ambient temperature

Automotive AEC-Q100 qualified

austriamicrosystems

a leap ahead in analog



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Images: austriamicrosystems, sxc/Staszkinse

General Description

The AS5215 is a redundant, contactless rotary encoder sensor for accurate angular measurement over a full turn of 360° and over an extended ambient temperature range of - 40°C to +150°C.

Based on an integrated Hall element array the angular position of a simple two-pole magnet is translated into analog output voltages. The angle information is provided by means of buffered sine and cosine voltages. This approach gives maximum flexibility in system design, as it can be directly integrated into existing architectures and optimized for various applications in terms of speed and accuracy.
With two independent dies in one package, the AS5215 offers true redundancy. The sensitivity of the device, as well as the output mode, differential or single ended, is programmable to keep highest system flexibility.
An SSI Interface is implemented for signal path configuration as well as a one time programmable register block (OTP), which allows the customer an adjustment of the signal path gain for different mechanical constraints and magnetic fields.

The single die version AS5115 is available in an SSOP 16 package.

150°C
ambient temperature

Key Features

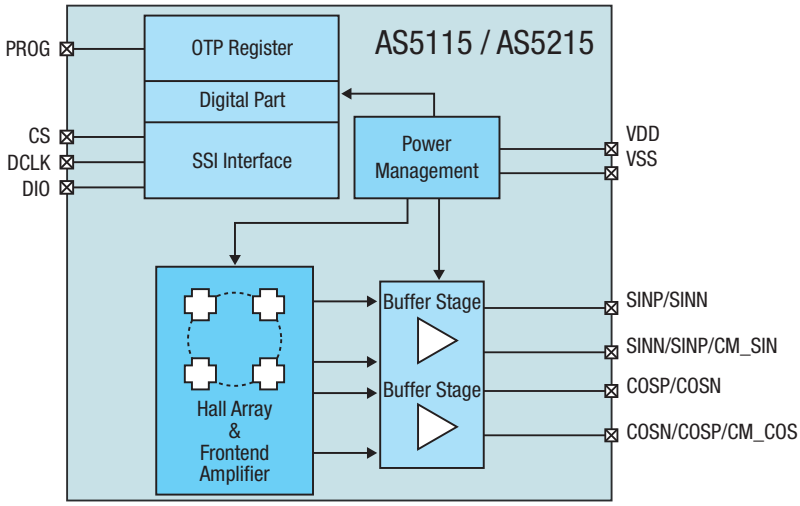
- Contactless angular position encoding
- High precision analog output
- Buffered Sine and Cosine signals
- SSI Interface
- Low power mode
- Programmable output modes:
  · differential
  · single ended
- Programmable sensitivity
- Wide magnetic field input range: 20 – 80 mT
- Wide temperature range: -40°C to +150°C
- Automotive qualified to AEC-Q100, grade 0
- Thin punched QFN 32 (7x7) package

Benefits

- Complete system-on-chip, no angle calibration required
- Ideal for applications in harsh environments due to magnetic sensing principle
- High reliability due to non-contact sensing
- Robust system, tolerant to horizontal misalignment, temperature variations and external magnetic fields

Applications

- Electronic power steering
- Contactless potentiometer
- Contactless rotary switches
- General industrial applications



Note: Block diagram shows only one die