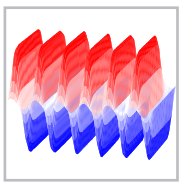
Rotary, linear and ring magnetic encoders

OnAxis™ sensing technology

Low cost modular OEM solutions

Industry standard mounting options



Robust linear and arc sensing technology

Bidirectional reference mark

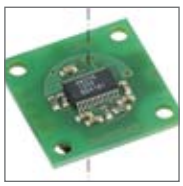
Easy to install

A RENISHAW associate company

Rotary magnetic encoders

Based on the proven OnAxis™ Hall sensor technology a range of incremental and absolute encoder solutions are produced for use in harsh environments. There are many housing options available for use in a wide range of applications including automotive, industrial, medical and marine. Custom designs can also be offered where needed to match specific design requirements.

OnAxis™ - The IC senses the angular position of a permanent magnet placed above it. The sine and cosine signals produced are then converted to absolute angle position data with a fast flash interpolator.



The sensor chip can be used directly on a circuit board or packaged into a protective housing.

The ability of the encoder to operate with a gap between the magnetic actuator and the encoder chip allows its incorporation into designs that need isolation of the moving elements.

Standard interface flanges with bearing/shafts can be provided for easy integration to existing designs.

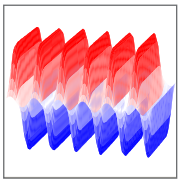
Why rotary magnetic?

- Resolutions to 13 bit (8192 cpr)
- High speed operation to 60,000 rpm
- Non-contact, frictionless design
- Excellent dirt immunity to IP68
- Operational temperature from -40 °C to +125 °C
- Industry standard absolute, incremental and analogue output formats
- Accuracy to ±0.2°
- Simple installation with self-locating design

Optional 58 mm mounting flanges

Linear magnetic encoders

The linear encoder range is based on the magnetoresistive sensing principle. The readhead detects the magnetic signature of the magnetised scale as it moves over it. The analogue signals are then processed to produce a range of digital resolutions to 1 µm. The system is suitable for linear and partial arc applications.



Sine and cosine signals are produced as the sensor moves along the scale. These analogue signals can then be interpolated internally to produce a range of resolutions to 1 µm.

The system is easy to install with a set-up LED on the readhead and an applicator tool for the tape scale.

A stick-on reference mark can be easily installed at the required position using the provided tool. Alternatively the reference mark can be ordered at a set position within the scale.

The scale can be supplied on a reel or cut to a specific length. A stainless steel cover strip can be provided to protect the scale.

Why linear magnetic?

- Selectable resolutions from 250 µm to 1 µm
- High speed operation
- Excellent dirt immunity to IP68
- Stick-on reference mark
- Integral set-up LED
- Axis lengths of up to 100 m
- Industry standard digital and analogue output options

Magnetic ring encoders

The ring encoder system consists of a compact readhead and a magnetised ring. As the ring rotates, the readhead detects the magnetic signature of the ring and processes these signals to the required output.

The LM13 features a compact sealed readhead that rides at up to 1.5 mm from the ring's surface. Simple to install, the LM13 features an integral set-up LED.

Integral bidirectional reference mark.

We offer a range of standard ring sizes for easy system integration.

Why magnetic ring?

- Resolutions from 1,280 to 327,680 cpr
- High speed operation to 25,000 rpm
- Excellent dirt immunity to IP68
- Integral set-up LED
- Industry standard digital output options

Applications

The robust RLS magnetic encoders are now becoming standard fitment in many diverse applications. The simple non-contact design provides reliable feedback in harsh environments where other encoders simply fail. With a large range of product configurations and excellent engineering support it is easy to see why so many applications now rely on these encoders.

Green energy

Advanced control systems using encoders are now standard in large scale renewable energy production. The ultra reliable RLS magnet encoders match this demand by surviving the harsh environmental conditions found in these remote installations.

Bomb disposal

The on-board RLS RMB20 rotary encoders detect the positions of all articulated components of the arm and track mechanisms, with the data being sent via a continuous telemetry stream back to the base station control.

AB Precision - The Guardian

Security cameras

CCTV cameras require excellent reliability and high repeatability in absolute positioning, but at low cost. The pan and tilt position of the camera is easily controlled with an encoder IC integrated within the camera mechanism and with no parts to wear, long term reliability is quaranteed!

Overview Ltd., UK
CCTV camera

Motor control

Arcus technology - NEMA 11

World's first all-in-one NEMA 11 microstep motor with driver, controller and encoder incorporates an AM256 magnetic encoder chip to the motor's back cap.

Machine control

Fast and reliable linear feedback can be easily added to machines with the fitment of the LM10 linear magnetic encoder and a digital readout.

Product range overview

OnAxis™ encoder ICs
AM4096, AM256, AM512B, AM8192B and AM8192B1

OnAxis™ encoder modules
RMB20, RMB28, RMB30 and RMF44

Rotary encoders
RM22, RM36, RM44, RE22, RE36 and RE58

Linear encoders
LM10, LM15 and magnetic scales MS

Ring encoders
LM13 and rings

Accessories
Magnets, magnet actuators, reference marks and USB interfaces

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