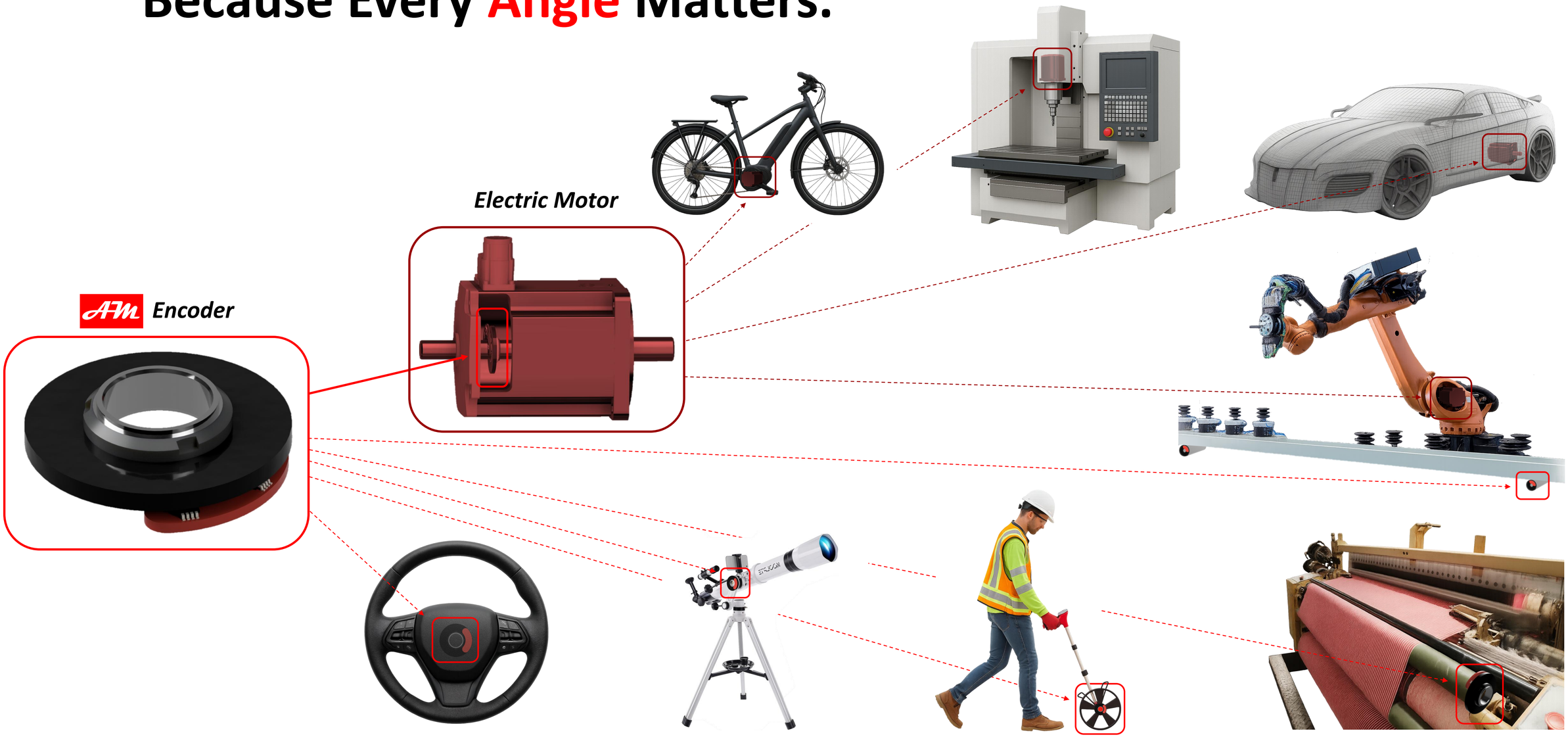
Absolute Magnetics

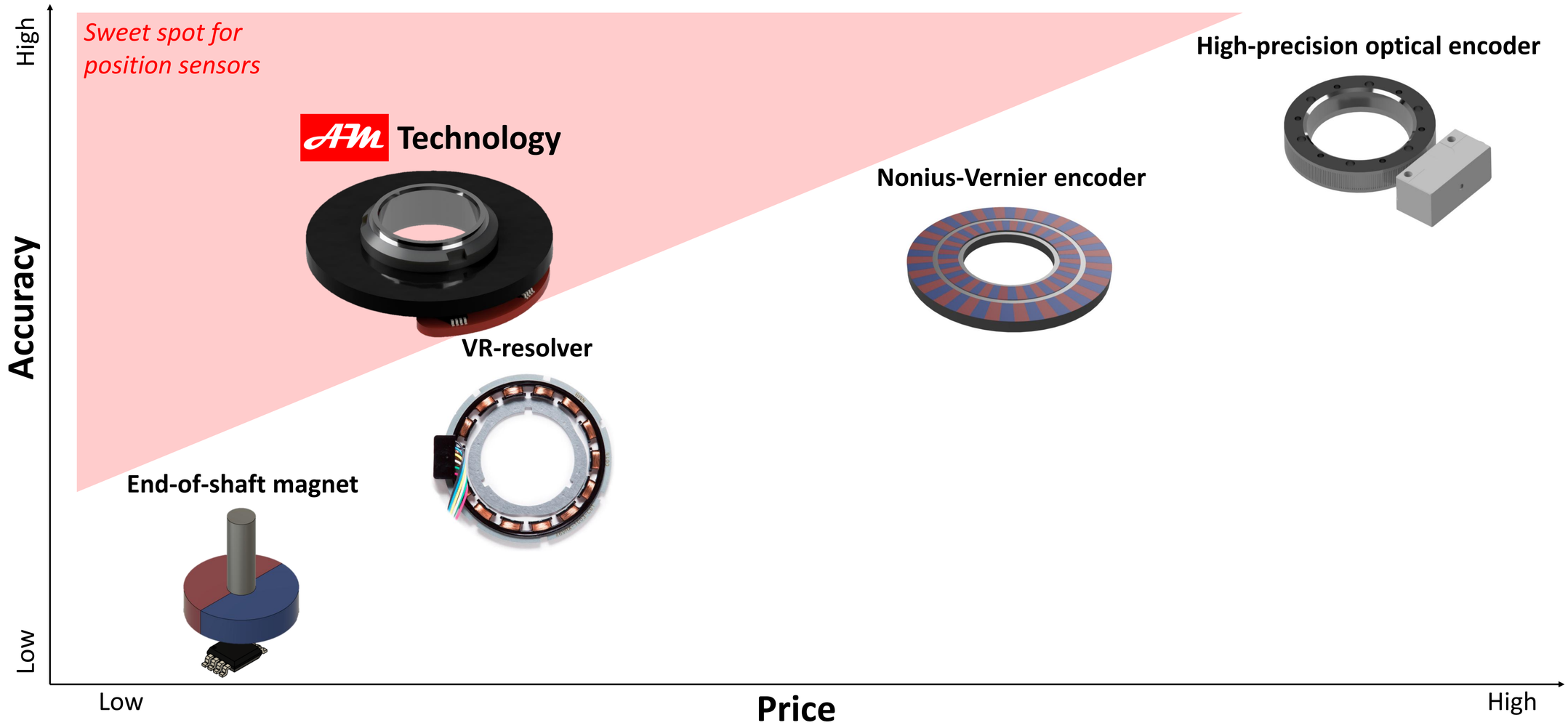
The Future of Magnetic Encoder Technology

19.11.2025

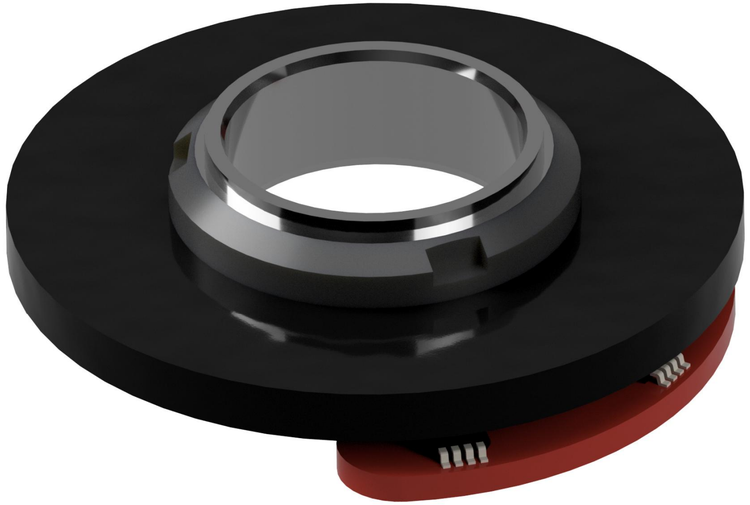
Next-Generation Encoder Technology.
Because Every Angle Matters.



AM Technology: Elevated Performance. Exceptional Value.



Robust, Accurate and Stray-Field Immune Encoder Solution Without Any Calibration.

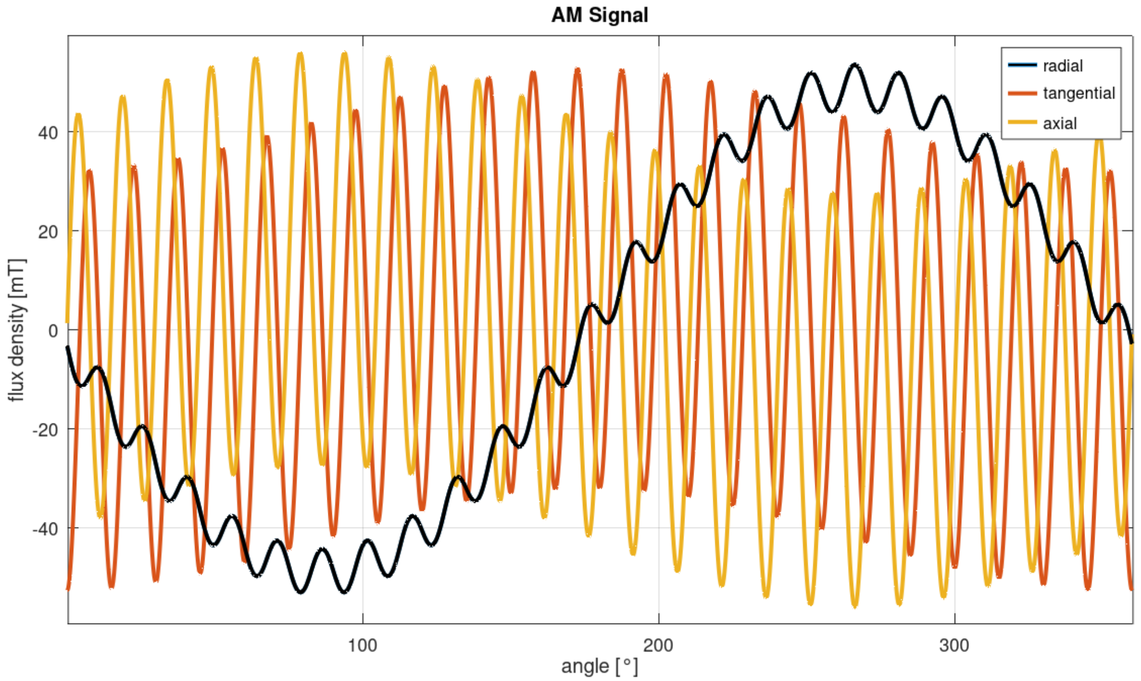


Link to Video:
AM Encoder Performance Tests

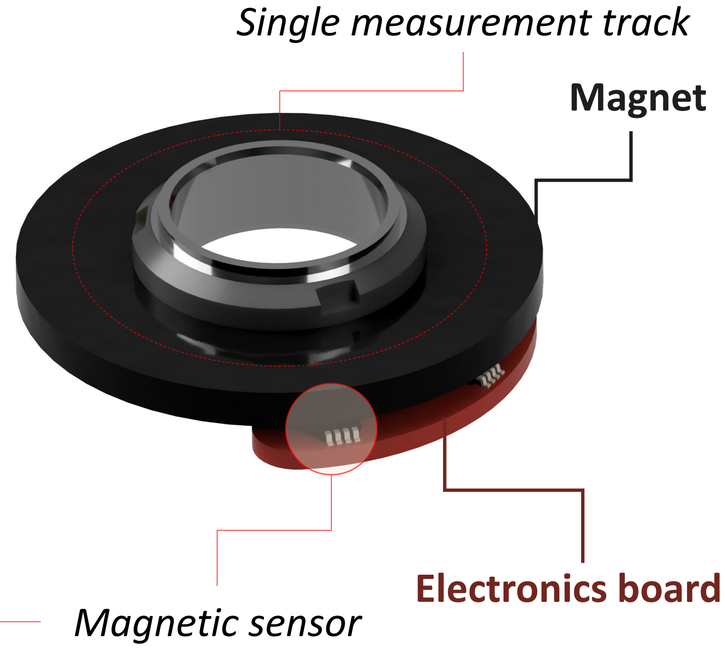
- ✓ **Absolute position** encoder
- ✓ **No calibration** needed (0.5° accuracy)
- ✓ Robust against external **stray fields**
- ✓ Wide **mounting tolerances** (±0.5 mm)
- ✓ **Air gap** variation (±1 mm)
- ✓ **High-speed** (30’000 rpm)
- ✓ **Tailor-made, compact** design
- ✓ **Cost-effective** price

The Secret Lies in the Patented Technology for Multi-Periodic Magnetization.

Using **multi-periodic** signals enable us to combine high precision and absolute detection on a single measurement track.



Patented technology
WO2022152996
WO2024110102

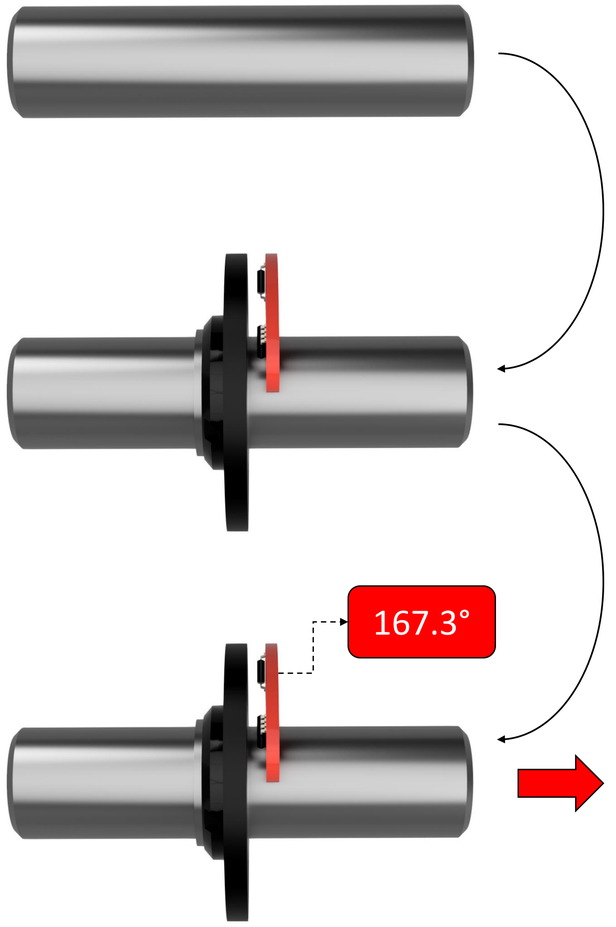


These **multi-periodic** signals enables angular detection on different scales simultaneously:

Global position = angle on complete mechanical turn + Local position = angle on fine magnetic increment

↳ *absolute position* ↳ *high accuracy*

No Calibration Required. No Reference Turn, No Homing. Redefining Simplicity in Encoder Technology.

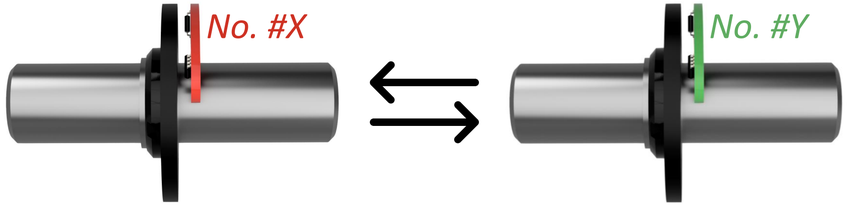


Step 1
Mount magnet and electronics board

Step 2
⏻ Power on

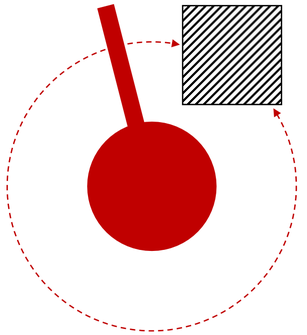
System immediately outputs angle

Interchangeable parts



No matching of magnet & electronics necessary.

For limited-rotation applications



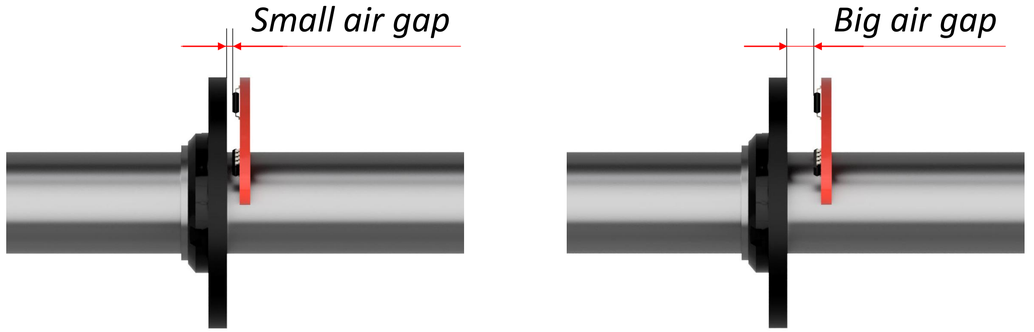
Ideal for applications where a full mechanical rotation is not possible.

Engineered to Tolerate Misalignment. Even During Operation.

Air gap

- ✓ Big air gaps up to 5 mm
- ✓ Air gap variation of ±1 mm

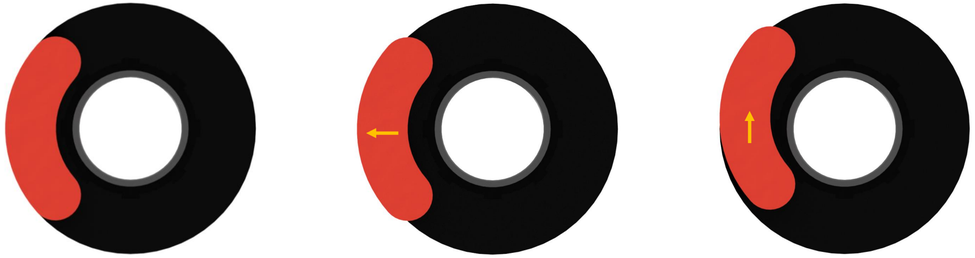
Link to video: Air gap variation



Misalignment shaft / electronics

- ✓ Misalignment of ±0.5 mm does not increase error

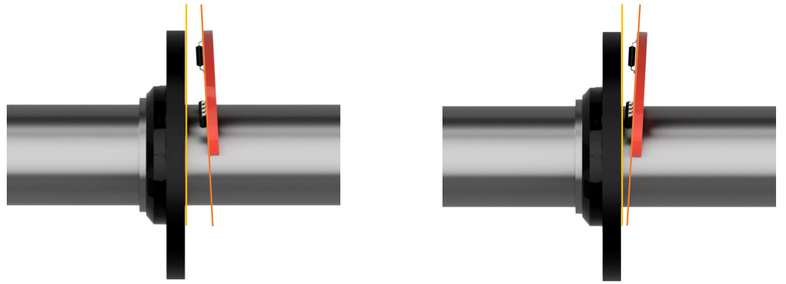
Link to video: Misalignment / eccentricity



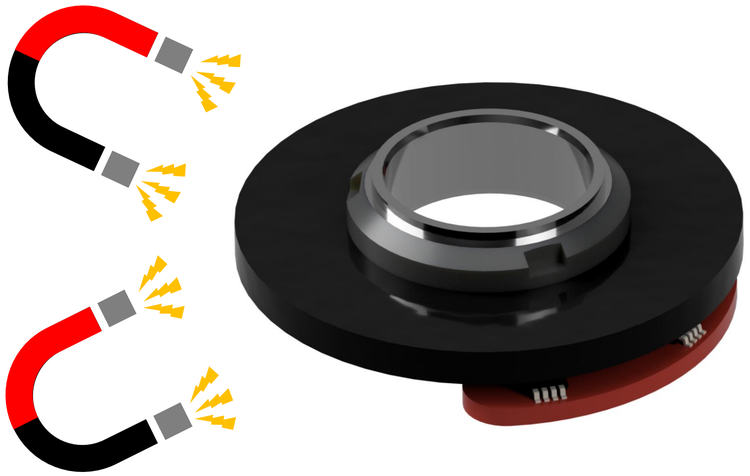
Stable even with extreme combined misalignments

- ✓ Combinations of mechanical alignments (air gap, tilt, eccentricity) can be handled without substantial error increase

Link to Video: Worst case mechanical misalignment

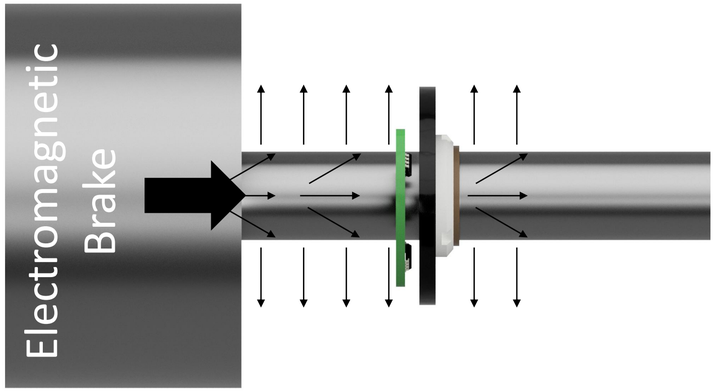


Built to Resist Magnetic Interference.



Magnetic stray-fields influencing AM Encoder

Link to video:
Stray field immunity
(using 8-times max. ISO norm stray-field)



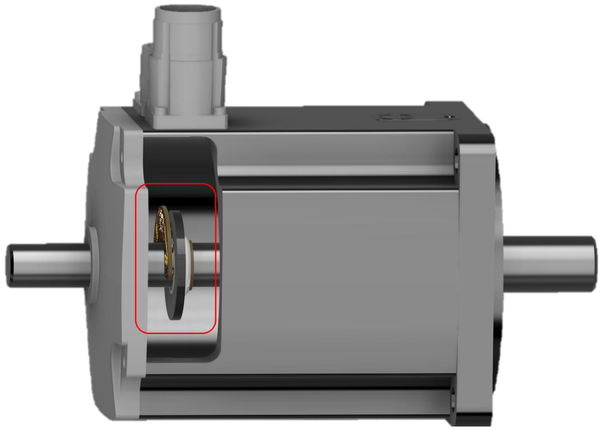
Stray-fields through ferromagnetic shaft

Link to video:
Electromagnetic brake

External stray-fields hardly influence encoder performance

- ✓ **Robust against static and dynamic stray-fields**
- ✓ **Operates with stray-fields from any direction**
- ✓ **No shielding necessary**
- ✓ **Usage with electromagnetic brakes possible**

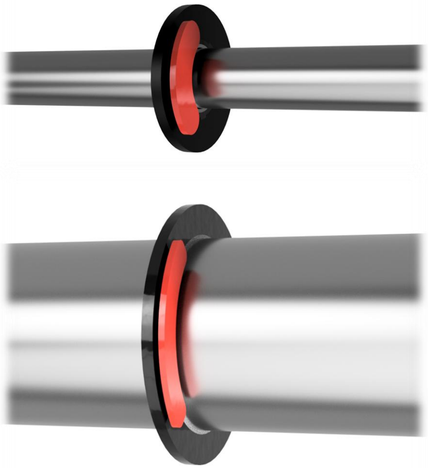
Tailor-Made for Your Application. Designed for Your Needs.



System integration

Save space where it is most needed.

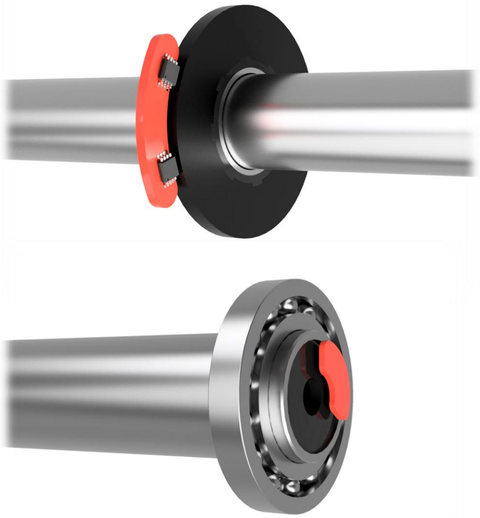
Compact design utilizing synergies of your assembly (no additional bearings, housing etc.)



Customizable size

AM Technology can be adapted to a wide range of shaft diameters.

- ✓ Small shafts from 4 mm
- ✓ Big shafts up to 160 mm



Design flexibility

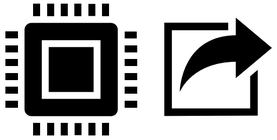
Axial or radial design.

No need to sacrifice shaft end for position sensing.

Integration into hollow shaft possible.

Temperature & Environment

Output Interface



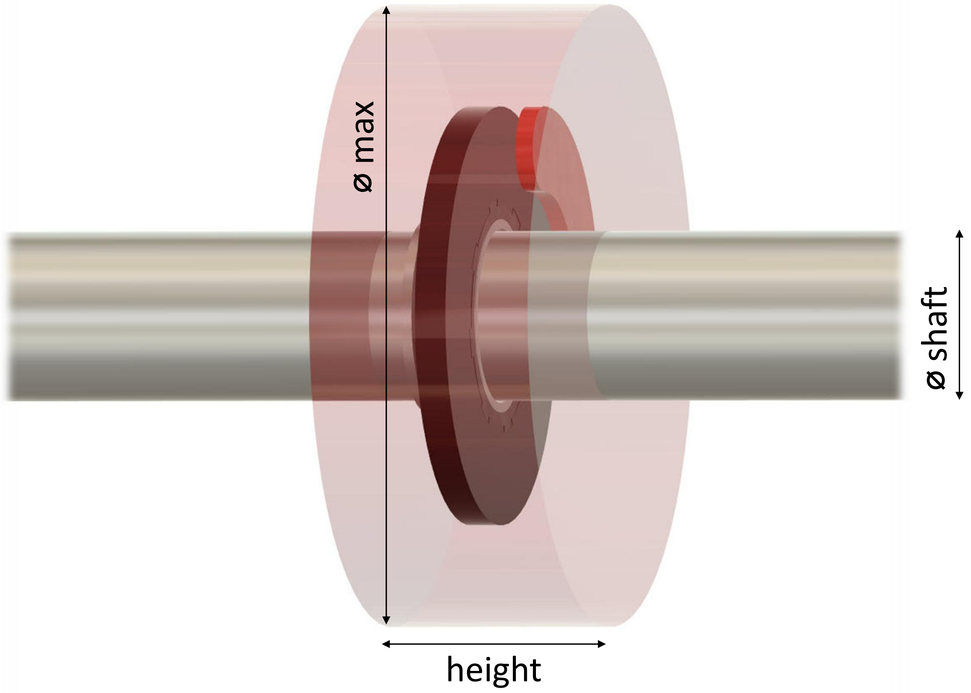
Adaption to your special requirements

Magnet materials can be made waterproof and oil resistant.

A wide range of output interfaces available.

Let Us Have Your Specifications.

Installation space



Property	Your specification
Installation space	CAD model, drawings
Accuracy	Desired, must-have
Max speed	Continuous, peak
Operating temperature	Min, max temperature
Relative movement	Thermal expansion, tolerances
Output signal	ABI, SPI, SSI, fieldbus etc.
Environment	Stray-field, humidity etc.

Initial feedback can be provided with this information.

Contact Us.

Absolute Magnetics AG

Auwiesenstrasse 1

8406 Winterthur - Switzerland

contact@absolute-magnetics.com

www.absolute-magnetics.com

And test our technology with the AM Evaluation Kit