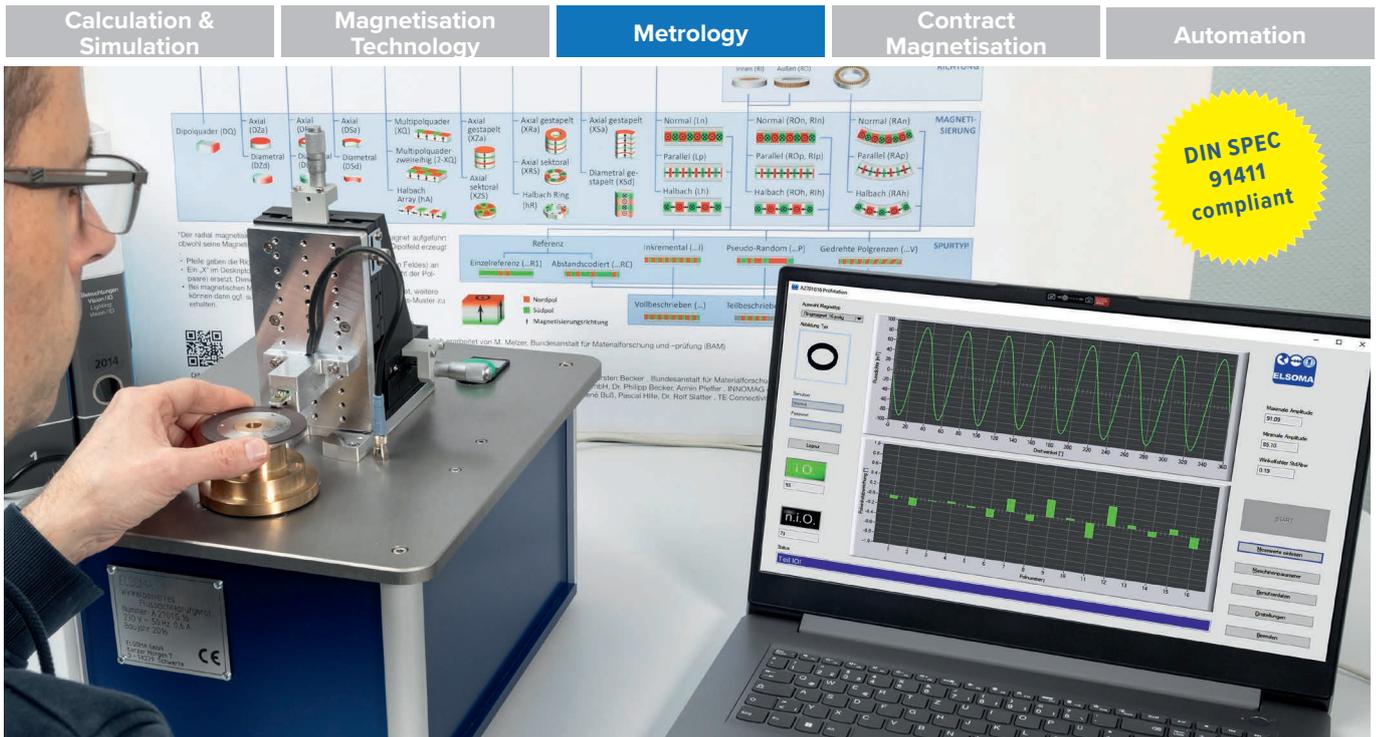


## Better Magnets!



# ELSOMA A05 Angle-based flux density measuring device

The demand for magnetic encoders and electric motors is continuously increasing. This also increases the demand for fast, precise measurement technology to check and ensure the quality of the two-pole and multi-pole ring and segment magnets used. The flux density of the magnetic field must be measured precisely, productively and cost-effectively. This is where the CE-marked flux density measuring device A05 for angle-based measurements comes into play. The device has a special, highly sensitive and precise 1D or 3D sensor chip for recording all three ma-

gnetic field components with just one measurement. The magnets or assemblies to be tested are mounted on a drive shaft with a backlash-free, preloaded bearing using an interchangeable holder. This shaft is driven by a toothed belt to avoid any interference field influence from the rotary drive. A high-resolution optical angle measuring system is used as a reference to record the angle of rotation of the shaft. The factory-calibrated 3D Hall sensor measures the flux density.

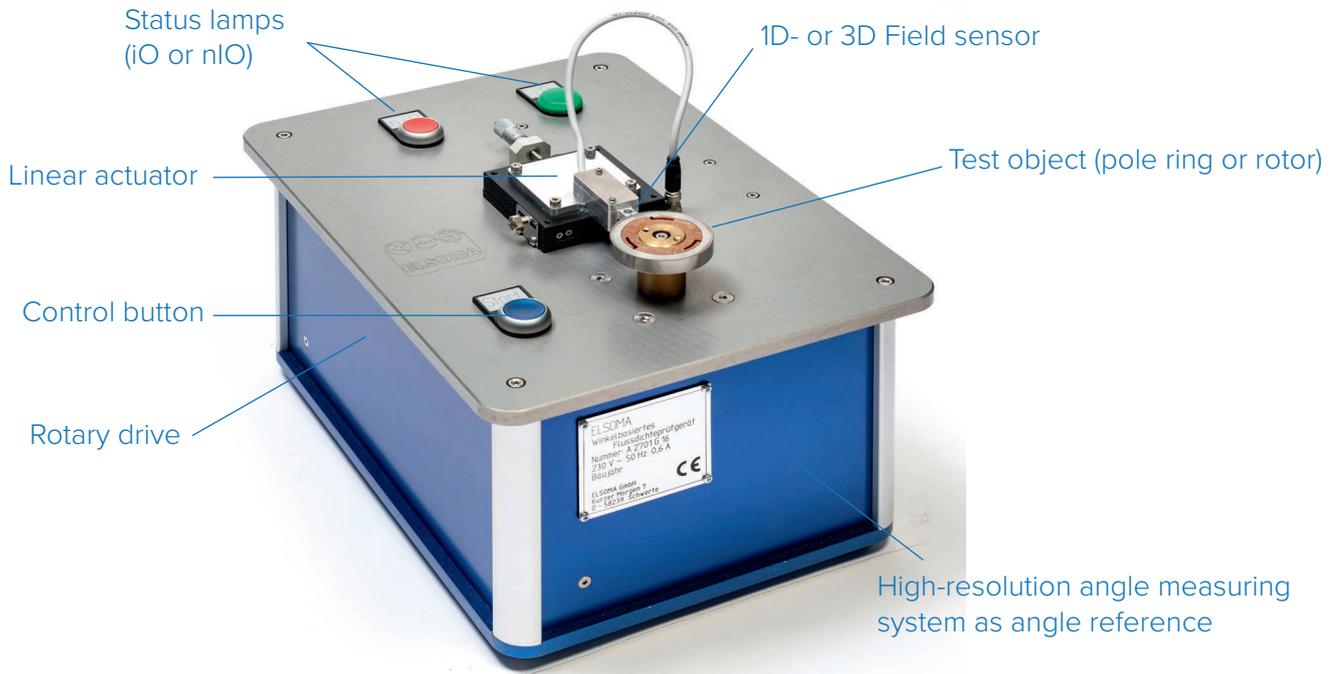
### Features

- Manually operated flux density meter with PC support
- Recording of radial, axial and tangential flux density components and assignment to the rotation angle position
- Interchangeable holders made of non-magnetic material for recording different workpieces
- Internal 16-bit A/D converter with 2 MHz sampling rate
- Two independent analog differential inputs as standard (can be expanded to up to six differential inputs on customer request)
- Use of factory-calibrated Hall sensors
- DIN SPEC 91411-compliant data evaluation
- Customer-specific software solutions for evaluating the measurement results possible

### Your Benefits

- Flexible, precise measuring device to measure the direction and magnitude of magnetic flux density and field strength with an angular reference
- Modular device enables a wide range of measuring tasks
- Portable solution, can be used flexibly for incoming and outgoing goods inspections as well as in the service area
- User-friendly configuration and evaluation via PC interface, e.g. setting of limit values, logging of measurement data
- Can be used without expert knowledge

# Highlights



## Ease of use

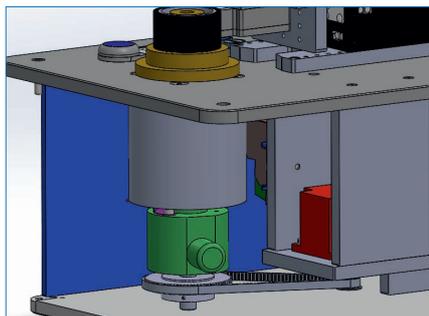
A special, highly sensitive and precise 3D sensor chip detects all three magnetic field components with just one measurement. This allows magnetic misalignments on magnets to be checked quickly and precisely.

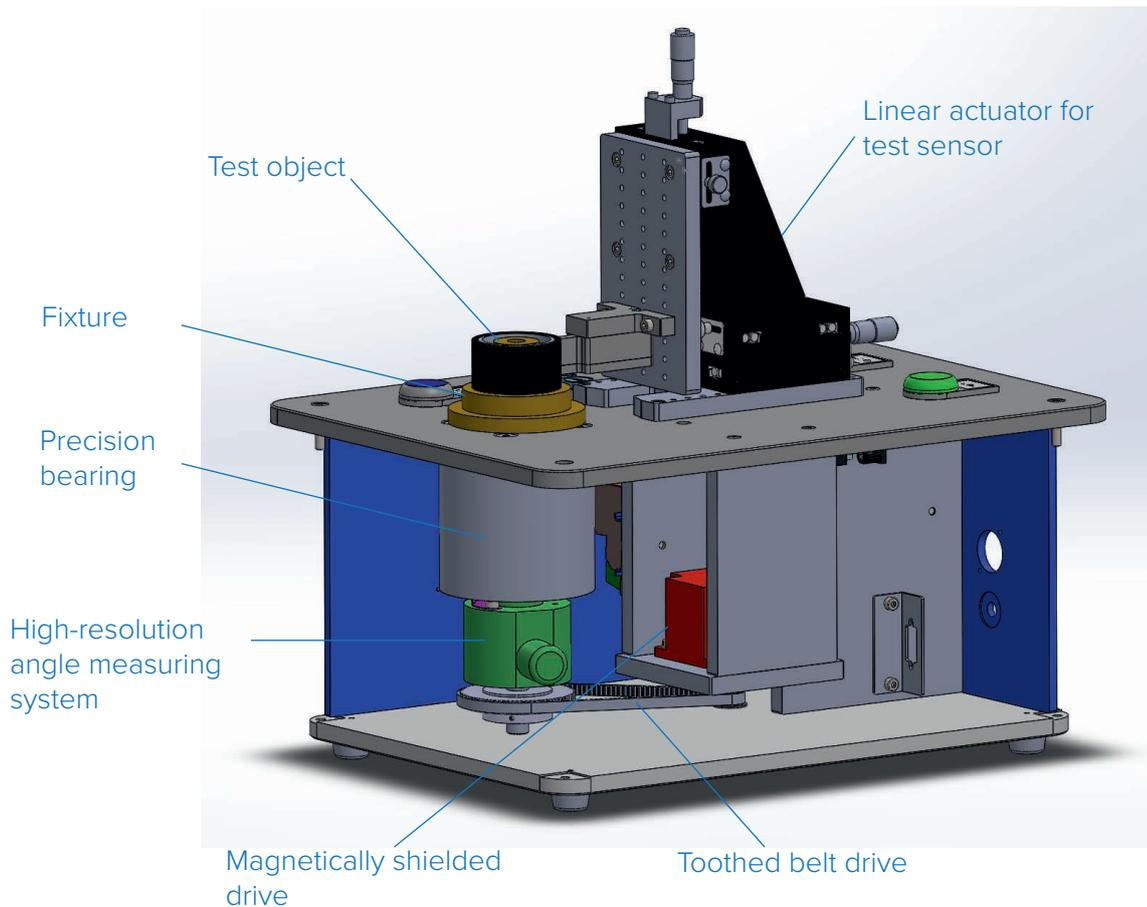
## Precision

A high-resolution optical, incremental angle measuring system with reference index serves as an angle reference. The system accuracy in the arc second range ensures a high-resolution angular reference for the measured flux density components.

## Easy configuration

A PC-based user interface supports the quick configuration of the device and the visualization of measurement results. Customer-specific software extensions are possible at any time.





## Axial and radial scanning possible

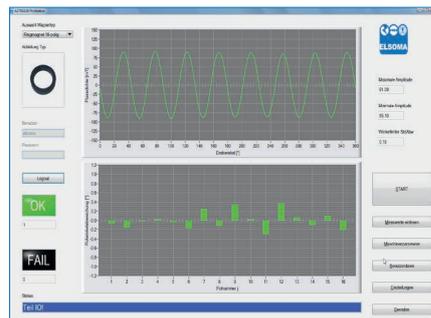
Rotors or multi-pole rings can be scanned in both radial (left image) and axial (right image) directions. There is a wide range of mechanical adaptation options to enable measurement of the most common magnet geometries.

## DIN SPEC-compliant data evaluation

Measurement reports are created in accordance with the new DIN SPEC 91411 „Requirements for the technical representation of magnetic measurement scales in design drawings“. Measured variables such as pole length or pole position deviations can be measured and displayed alongside flux density deviations.

## Flexibility

The device can be used flexibly for incoming or outgoing goods inspections. Several interfaces simplify integration into automated production systems.



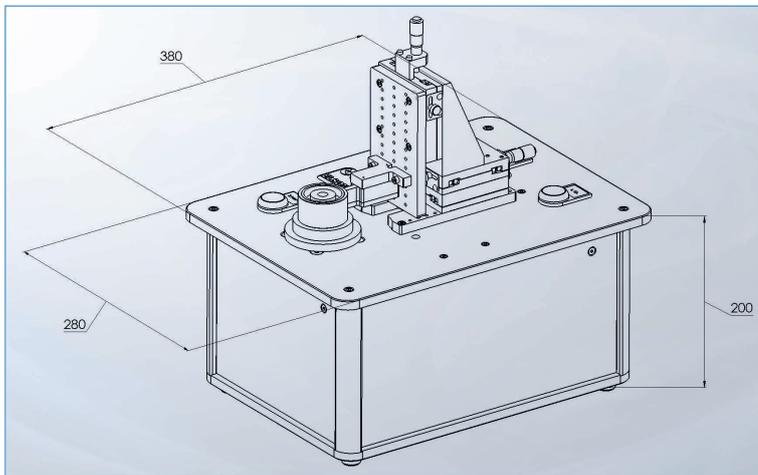
## Technical Data (Standard)

Parameter	Value
Resolution of the angle measurement system	14400 pulses/revolution (= 0.025 °)*
System accuracy of the angle measurement system	+/- 0.05° (= +/- 18")**
Amplitude resolution	10 µT (± 1.25 %)
Measuring range	150 mT (depending on the measuring sensor used)
Operating voltage	230 V +10 % +15 %, 50 Hz
Dimensions (L x W x D)	380 x 280 x 200 mm

\* Higher resolutions available on request

\*\* Higher system accuracies available on request

## Dimensions (in mm)



## Options



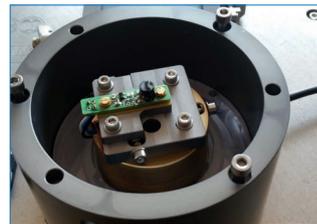
### Fine adjustment for axial and radial scanning

- Fine adjustment using micrometer screws is available to precisely set the air gap between the magnet and sensor.
- Motorized adjustment axes are also possible.



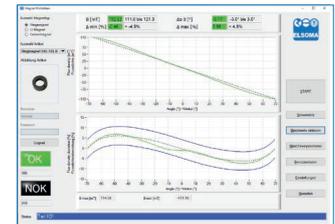
### Length measurement system

- The repeatability and detection of the air gap can be supported by a high-resolution length measuring system.



### Rotating sensor

- It is possible to position the magnet stationary and rotate the sensor relative to the magnet.



### Software options

- Numerous software options are available, including customer-specific software solutions that are optimized for the application of the magnet to be tested.
- Intelligent software-based evaluation and assessment of magnets.

 **Areas of application: Magnet manufacturers | magnet users | encoder manufacturers | sensor manufacturers | motor manufacturers | automotive suppliers**