

Better Magnets!



ELSOMA C10 Flux density measuring device

The demands on the accuracy of magnetic measuring systems, comprising magnetic sensors and permanent magnets as measuring scales, are constantly increasing. Rotary encoders or motor feedback systems must achieve ever greater precision in order to either position more accurately or achieve better efficiency and lower torque ripple. These requirements place new demands not only on the sensor technology, but also on the magnets used and, as a result, on the measurement techno-

logy used for incoming and outgoing goods inspections along the value chain. With cylindrical or cuboid dipole magnets, which are very often used for on-axis and off-axis angle measurement or for switching operations, material inhomogeneities or manufacturing defects can lead to asymmetrical magnetization or inhomogeneous magnetic field characteristics. With the ELSOMA C10 flux density measuring device, such errors are detected much faster than with previous solutions, such as Helmholtz coils.

Features

- Can be equipped with various measuring probes and devices for different areas of application. A four-channel measuring socket is available for this purpose
- Monochrome, graphic LC display with RGB backlighting
- USB interface for communication with a PC system
- Internal data memory for monitoring measurement series, e.g. for quality assurance or incoming goods inspections
- Network interface for data retrieval of saved measurement series
- Can be extended with a digital I/O module to integrate the measuring device into an automated cell or line
- Battery or mains operation

Your Benefits

- Flexible, precise measuring device for measuring the direction and magnitude of magnetic flux density and field strength
- Modular device enables a wide range of measurement tasks
- Portable solution, can be used flexibly for incoming and outgoing goods inspections as well as in the service area
- Easy integration via Ethernet and USB interfaces and optional digital I/O interface
- User-friendly configuration and evaluation via web interface, e.g. setting of limit values, logging of measurement data
- Compatible with NI™ Labview
- Can be used without expert knowledge
- Customer-specific software extensions are possible

Highlights



Ease of use

A special, highly sensitive and precise 3D sensor chip records all three magnetic field components with just one measurement. The measuring device provides the user with both the flux density components and the solid angles of the flux density vector. This allows magnetic misalignment angles on magnets to be checked quickly and precisely.



Precision

ELSOMA offers a wide range of axial and transverse measuring probes as well as devices with 3D probes to extend the measurement possibilities. These probes can be used to measure flux densities in the range 10 μT to 5 T with a resolution of up to 1 μT and a measurement error of less than 1 percent.



Easy programming

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





Easy data handling

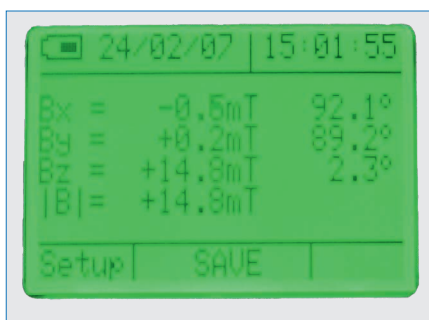
An internal data memory simplifies the monitoring of measurement series for quality assurance or incoming goods inspections. These measurement series can be conveniently retrieved via the network interface.

Connectivity

The portable C10 flux density meter, which is equipped with a rechargeable battery, enables simple and flexible integration into automated production systems via Ethernet and USB interfaces as well as an optional digital I/O interface.

Flexibility

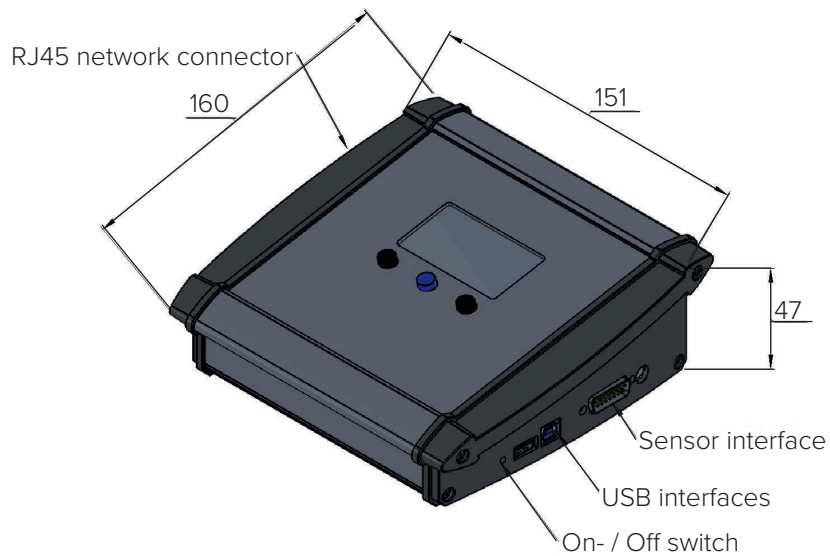
The C10 can be combined with different magnetic sensor technologies (Hall, MR), sensor versions (analog, digital) and other devices. Several field sensors can also be used simultaneously in a corresponding fixture, for example to carry out static measurements of multipole magnets.



Technical Data

Parameter	Value
Resolution	1 μ T (in the most sensitive measuring range)
Measuring ranges	± 5.00 T / ± 2000 mT / $\pm 1200,0$ mT / $\pm 400,00$ mT / $\pm 100,000$ mT
Maximum flux density	5 Tesla
Measuring error	1 % + 3 Digits (ambient temperature 20 °C \pm 5 °C)
Battery operation	> 5 h
Power consumption	maximum 3 W

Dimensions (in mm)



Accessories



Transversal probe TS5.1D

- 1D Hall probe for detecting fields in the range from 10 μ T to 5 T
- Length of the measuring tongue approx. 86 mm, width approx. 6 mm, thickness approx. 0.6 mm

Axial probe AS5.1D

- 1D Hall probe for detecting fields in the range from 10 μ T to 5 T
- Length of the measuring tube approx. 100 mm, diameter approx. 6 mm

3D probe FH2.3D

- 3D Hall probe for detecting the solid angle of the field vector
- Length of the measuring tongue approx. 86 mm, width approx. 4 mm, thickness approx. 2.4 mm

Measuring fixtures

- Fixtures can be created according to customer requirements (size, shape, resolution). Most types of magnetization according to DIN SPEC 91411 can be measured.



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