BROCKHAUS
MEASUREMENTS

- Determination of the magnetic properties of electrical steel and other soft magnetic materials
- Freely configurable with specific measuring coil systems
- Simultaneous connection of up to 12 parallel measuring coil systems
- Fully digitized data documentation
- Very fast measurements
- Measuring coil systems and evaluation according to IEC 60404 ff. and ASTM for measurement with Epstein frame and sheet measuring coil
- Automatic coil changeover for convenient operation
- Module for measurement of stators, rings, ring strip cores, stacked punched parts, etc.
- MPG Expert software for measurement, display and integration into QM systems
- Extensive diagnostic functions
- Software options: free curves, DC bias offset, pulse-width modulation signals, higher harmonics

Measuring categories

Specific hysteresis loss
Maximum polarization
Effective polarization
Maximum field strength
Effective field strength
Remanence
Coercive field strength
Permeability
Differential permeability
Specific apparent power
Hysteresis display
Form factor
J(H) values for graphic display

Measuring Technology for Soft Magnetic Materials

Measuring Unit MPG 200 D

Measuring Unit MPG 200 D

Operating principle

In a measuring coil a material sample is exposed to a defined magnetic field and magnetic flux is created in the steel sample. The electric current required is supplied by a power amplifier. The current is measured by means of a temperature-stable, low inductivity precision resistor (shunt) or via field coils.

Determination of the polarization is by sampling of the induced voltage, conversion and integration. Parallel recording of the H and J sizes with separate analogue-digital converters guarantees absolutely simultaneous measurement.

Standard measurement is performed under sinusoidal polarization. By using a control algorithm the secondary voltage can be checked and constantly regulated in accordance with the nominal value. Optionally excitation on the primary side is possible with free curves or PWM signals. The nominal voltage is supplied by a highly stable, digital frequency generator. Amplitude and frequency are set by software according to the sample data entered and the default values. Operation, measurements and evaluation are via the BROCKHAUS® Software MPG-Expert which enables completely free parametrization and combination of the measuring processes. The BROCKHAUS® Software MPG-Expert runs on Windows XP and higher.

Additional software packages are available for individual measuring operations such as DC bias offset, pulse-width modulation signals, free curves and higher harmonics.

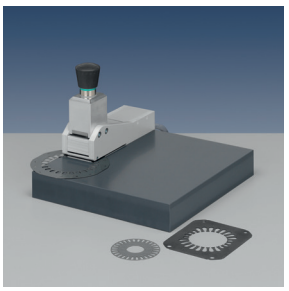
Measuring coil systems

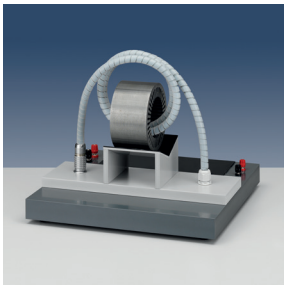
- Epstein frame for freq. of 50 Hz / 60 Hz up to 20 kHz according to IEC 60404-2 and -10
- C 510 measuring coil for punched parts, strips and sheet material
- Single-strip measuring sensor for Epstein strips, comparable to IEC 60404-3
- Single-sheet tester according to IEC 60404-3 (500 x 500 mm)
- Module for stators, rings and transformer cores
- Custom-made Epstein frames, single-sheet and single-strip measuring coils

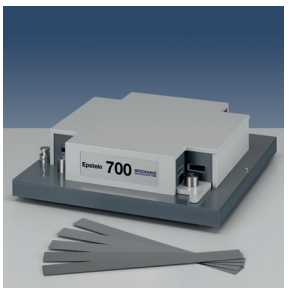
Technical Data

Repeatability	0.1 %
Comparability of the measured results	according to IEC 60404 ff.
Setting accuracy of the nominal value	according to IEC 60404 ff.
Maximum current	40 A peak (optional 52A)
Maximum voltage	100 V peak
Coil connectors	up to 12 coils parallel
Operating mode	PC / software
Model	table or cabinet version
Measuring frequency	3 Hz – 20 kHz (optional DC) DC with adjustable rise time for primary signals and flux alteration control dΦ/dt. Optional for higher harmonics up to 200 kHz (in combination with an additional amplifier)
Power supply	3 x 220–440 V AC, 50/60 Hz

Strip measuring sensor


Punched part sensor


Ring core sensor



Epstein frame


Single-sheet tester

Other measuring systems
Electrical Steel: C 510
Inline: EBA
Surface Resistance: Franklin Tester

Product divisions
Measuring Technology for Hard Magnetic Materials
Magnetizing Technology
Services

BROCKHAUS MEASUREMENTS

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