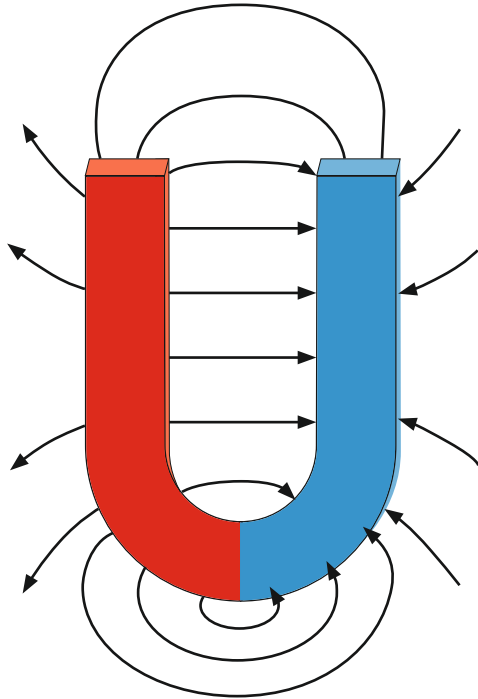


MAGNETIC FIELD METERS / PERMEABILITY METERS



INFORMATION

Magnetic Field Measuring



Magnetic fields are invisible. The magnetism of a workpiece can only be recognized by the effect on other steel parts or chips. Often, however, residual magnetism is an undesirable effect, and that is why it is increasingly the subject of quality audits. Magnetism is also an important component of mechanical engineering. Without a magnet, there is no electric motor. The functionality of a magnetic switch depends on the strength of the actual magnet. For the magnetization of ferrite or neodymium materials, strong magnetic fields are required, which must be dynamically measurable during generation.

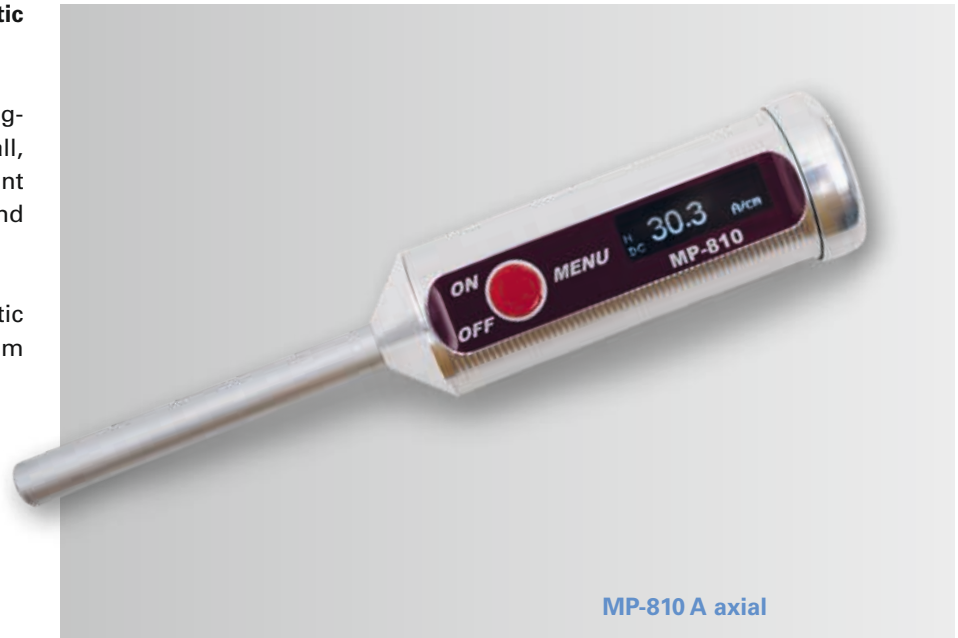
Our company name, "List-Magnetik", speaks for itself. For decades, magnetization and magnetic field measurements have been our core competences. Behind all of our customer-specific magnetizing systems, demagnetizing devices and the serial production of magnetic measuring devices, are our many years of comprehensive experience and well-founded know-how. Our measuring instruments recognize both magnetic fields with the minimum strength of the earth's magnetic field, as well as strong pulse fields, which enables us to meet all of your application requirements. We offer technically advanced solutions "Made in Germany", from the small hand-held compact device to the analog display on the oscilloscope. Special equipment such as flux meters and permeability measuring devices complete our range of services.

MP-810 Magnetic Field Meter

The smallest and most attractive magnetic field meter

The addition to our series of precise magnetic field measurement devices: The small, compact and attractive hand instrument **List-Magnetik MP-810** is easy to operate and comfortable to use.

To measure accurately all kinds of magnetic fields: AC fields, DC fields and maximum values in impulse fields.



MP-810 A axial

The measurement ranges and different units A/cm, kA/m, Gauss/Oersted, Tesla fulfill every requirement .

Magnetic field measurement in new design

MP-810 is available with fixed **axial probe** (MP810 A) or with **tangential probe** (MP810T)

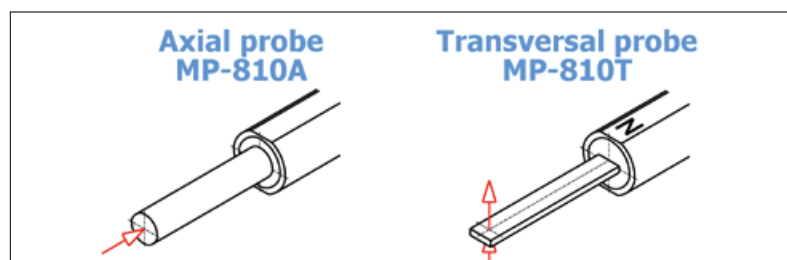
The axial field probe measures the field in direction of the probe axis in precise distance of 2 mm. It is suitable for measurement on plain surfaces, or specifically in drilled holes.

The tangential field probe measures in 90 degree angle to the probe axis particularly in air gaps, cavities and on the surface of work-pieces, suitable for crack detection.



MP-810 T transversal

Measuring directions with axial and transversal probe ►



MP-4000

Magnetic Field Meter

with unique measuring technology for professional measurement of magnetic direct and alternating fields as well as pulsed fields

Experience a completely new and unique measuring technique with the **List-Magnetik MP-4000** professional magnetic field meter. Externally connected axial and transversal field probes perform perfect measurements of magnetic direct and alternating fields and especially pulse fields of all kinds. The range of application extends from the earth's magnetic field up to a field strength of 40,000 A/cm.

MP-4000 has a graphical LCD touch panel with an innovative operator guidance and a resolution of 320x480 pixels. An outstanding feature of the new probe electronics is the fast digitized measured value processing with up to 200 kHz, which allows pulse curves from 0.1 msec to be displayed. This provides an accurate picture of the pulse curve of a magnetic field. Maximum value and pulse length are indicated exactly. Also alternating field curves up to 20 kHz frequency can be displayed and stored.

The device supports all areas of application of magnetic field measurement with flexible Data logger, combined digital and analog display and peak value measurement. Via the Bluetooth interface, you can transfer the data to the Windows PC as well as to the Android or iOS app. Via the USB-C interface, the device can be connected to an external power source in continuous operation.

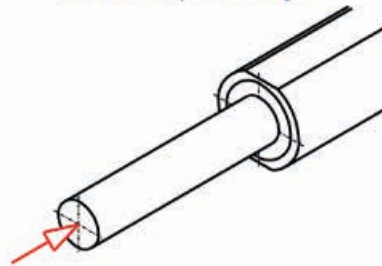
Especially at very low magnetic field strengths, an absolutely interference-free and precise measurement is crucial. The measuring electronics work directly in the probe and digitize the signals of the Hall sensor.

In the range of stable DC fields, a magnetic field can be recorded over a wide area with the scan function and statistically evaluated. In the case of pulse fields, the measuring probe of the **MP-4000** processes the measurements at an enormous speed of less than 0.1 msec. The measured values generated in this way can be displayed in the **MP-4000** as a graph and provide an accurate picture of the pulse progression of a magnetic field.

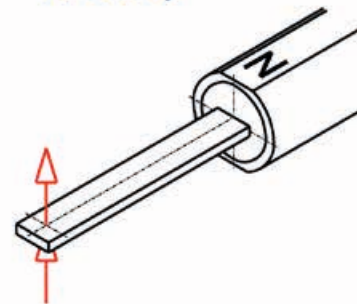


MEASURING PROBES for Magnetic Field Meters MP-4000 and MP-1000

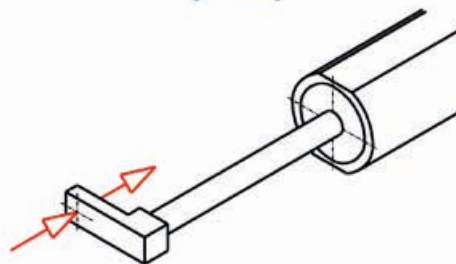
Axial probe
(PM2-A, PM4-A, P-A2,
MP-810A, MP-80)



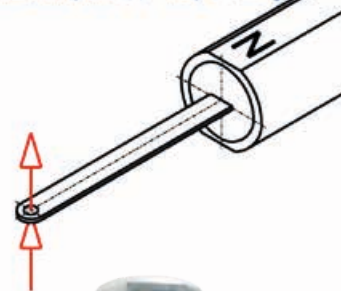
Transversal probe
(PM2-T, PM4-T, P-T2,
MP-810T)



Angular axial probe
(P-W2)



Transversal flexible reed probe
PM2-TR, PM4-TR, P-22)



Checking with Calibration Standard

It is not necessary to calibrate the device – it is pre-calibrated at the factory.

A calibration standard with 180 A/cm is available as an option, in order to be able to check the device.

If a deviation is detected when checking with the calibration standard, we advise returning the device for recalibration at the factory.

Axial Field Probe

Place the probe inside the ring on top of the calibration standard and position or rotate the instrument until the maximum value is displayed. Then compare the displayed value to the value of the calibration standard.

Transversal Field Probe

Place the probe in the center of the ring on the top of the calibration standard with the N (North Pole) mark facing up. Position the probe until the maximum value is displayed. Then compare the displayed value to the value of the calibration standard.



MP-80

Residual magnetic field meter

With the handy, battery-operated **List-Magnetik MP-80 residual magnetic field meter**, you can quickly and reliably determine the residual magnetism, also known as remanence, on ferromagnetic iron and steel parts. The measuring device can also be used to check demagnetized parts.

The „little brother“ of the MP-800 has its particular strength in the area of weak magnetic fields. With its compact design and metal housing, the device is robust and insensitive to harsh environments such as oily vapors or moisture.

The supplied calibration standard of 5 A/cm always gives you the certainty that your device is working correctly.



MP-1000

Magnetic Field Meter

The **List-Magnetik MP-1000** magnetic field meter is a handy universal device with externally connectable transversal and axial field probes for the precise measurement of all types of magnetic fields: steady DC fields, alternating AC fields and pulsed fields.

A separate built-in micro controller in the **MP-1000's** measuring probes digitizes and linearizes the analog measurement signals of the hall sensor into the probe. This gives an extremely trouble-free and precise measurement, especially at high magnetic field strengths. The probe cable is pluggable at both ends, at the display unit and the probe, which is particularly service-friendly, as the cable can simply be replaced if it becomes faulty. Applications of the **MP-1000** are the test for residual magnetism, the measurement of magnetic fields of all kinds, as well as the localization of stray fields for crack detection.



FL-4 – Fluxmeter

The **Fluxmeter FL-4** is a measuring device for the determination of the magnetic flux Φ (Phi) of a magnet system or a single magnet.

In combination with the List-Magnetik Helmholtz moment coil HM-1, the magnetic flux of permanent magnets can be determined very accurately, since the entire volume of the magnet is measured independently of position. The effect of the magnet on the coil is determined in the form of an electrical voltage and converted into the flux value.



FerroPro compact Magnet Permeability Meter

With the Magnet permeability meter **Ferromaster** you can easily measure the relative magnetic permeability μ_r of feebly magnetic materials and workpieces with a permeability between 1.001 and 1.999.

The permeability is measured by touching the workpiece with the probe tip and reading the result from the display.

Typical applications are: non-destructive testing of materials, e. g. quality control of stainless steel, material selection for electron-/ion-beam equipment, detection of material defects induced by mechanical or thermal stress.



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Performance table and technical Data

MP-4000 · MP-810 · MP-80 · MP-1000

	MP-4000	MP-810A / MP-810T	MP-80	MP-1000
Measuring units	A/cm – kA/m – Gauss / Oersted – Tesla			A/cm – Gauss / Oersted
Applicable probes	Axial probes PM2-A and PM4-A, Transversal probes PM2-T, PM2-TR, PM4-T and PM4-TR	MP-810A: integrated axial probe MP-810T: integrated transversal probe	integrated axial probe	Axial probes P-A2 and P-W2, Transversal probes P-T2 and P-Z2
Measuring range direct field / DC	0-40,000 A/cm	0-20,000 A/cm	0-100 A/cm	0-20,000 A/cm
Measuring range alternating field / AC	0-20,000 A/cm	2-20,000 A/cm	–	20-20,000 A/cm
Accuracy in homogeneous field	± 1 A/cm to 50 A/cm, ± 2% measured value from 50 A/cm, ± 3% measured value from 20,000 A/cm	± 1 A/cm up to 50 A/cm, ± 2% of measured value from 50 A/cm	± 0,3 A/cm up to 10 A/cm, ± 3% of measured value from 10 A/cm	± 1 A/cm up to 50 A/cm, ± 2% of measured value from 50 A/cm
Resolution	0-200 A/cm: 0.1 A/cm, > 200 A/cm: 1 A/cm, > 10,000 A/cm: 10 A/cm		0,1 A/cm	0–100 A/cm: 0,1 A/cm, ≥ 100 A/cm: 1 A/cm, ≥ 1,000 A/cm: 10 A/cm, ≥ 10,000 A/cm: 100 A/cm
Frequency range AC	2 Hz – 20 kHz	20-100 Hz	–	10 Hz – 5 kHz
Display	LCD Touch panel color 320x480 pixe	OLED Graphic Display illuminated		LCD display 3 digit
Multilingual menu navigation	English, German, French, Italian, Spanish	English, German, French, Italian, Spanish, Hungarian, Polish, Dutch		–
Data logger	10,000 measurements, flexibly divisible	4,000 measurements, flexibly divisible		–
Statistics	Count / maximum / minimum / average / standard deviation			–
Interface	Bluetooth Low Energy interface for communication with Android, iOS and Windows			–
App for Android, iOS, Windows	free of charge via Google Play Store, Apple App Store, List-Magnetik website			–
Power supply	3x 1.5 V AA Mignon. External power supply can be connected via USB-C	1x 1.5V AA Mignon		2x 1.5 V AA Mignon
Dimensions	150 x 85 x 35 mm	Ø 28 x 180 mm	Ø 28 x 103 mm	105 x 65 x 26 mm
Weight	320 g with batteries	73 g with batteries	70 g with batteries	137 g with batteries

1 A/cm = 0.1 kA/m = 1.256 Gauss = 1.256 Oersted = 0.1256 mT (Millitesla)



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