
# TEST EQUIPMENT

MATERIAL TESTING, COATING THICKNESS AND MAGNETIC FIELD MEASUREMENT

List-Magnetik
A COMPANY OF PCE INSTRUMENTS

# TESTING
# MEASURING INSTRUMENTS

## MEASURING INSTRUMENTS OF THE HIGHEST PRECISION

### Made in Germany

All List-Magnetik instruments are manufactured in our headquarter in Germany and guarantee you the highest quality and reliability.

The many years of experience of the engineers in the design and manufacture of coating thickness measuring devices, magnetic field measuring devices, instruments for determining permeability and magnetic flux, who have been researching and developing technologically very advanced and increasingly innovative products for years, make the company a serious and reliable partner all over the world.

List-Magnetik is a member of the PCE Instruments SE.

This alliance allows all to continuously expand comprehensive expertise. Under the PCE Instruments umbrella, List-Magnetik's expertise is united with the proven competencies of companies like A & P Instruments and Drive Test GmbH. For the customers, this means a broader and deeper spectrum of industrial measurement technology, all from a single source.

Our commitment to the highest "Made in Germany" quality remains unchanged. The development and production of our products continue at our Leinfelden-Echterdingen location. Customers value List-Magnetik for its reliability, precision, and innovative strength.

Discover List-Magnetik's more comprehensive solutions for your demanding measurement tasks here!




## List-Magnetik

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## COATING THICKNESS MEASURING

With coating thickness gauges, you can quickly and easily measure the thickness of paint, resin, electroplated coatings, anodized aluminum, plastic, rubber or ceramic on all kinds of metals. Coatings made of chrome, cadmium, zinc, aluminum and many other substances on steel can also be precisely measured.

A layer thickness measuring device provides information about corrosion protection and the probable service life of a base material. In this way, the qualitative suitability of a product and its appearance can be guaranteed and conformity with a large number of international standards can be established.

## MAGNETIC FIELD MEASUREMENT

Portable digital magnetic field measuring devices with microprocessor technology, compact and handy, enable a high-precision analysis of magnetic constant fields, alternating fields or pulse fields. They are used in the control of materials with residues of machining magnetism, in the medical field for the scattering of magnetic fields generated by magnetic resonance devices, in all situations in which magnetic fields are present.

Magnetic field measuring devices play a fundamental role in the preventive control of materials that have been magnetized or demagnetized for various reasons, and they are also important for mapping the magnetic field profiles in the field of magnetic resonance.


## MAGNET PERMEABILITY METERS

Magnetic permeability is an indication of how strongly a material can be magnetized. It is useful in situations where no magnetism is actually desired, such as stainless steel.

Our instruments measure in the low permeability range up to μr=5 and are mainly used in the production of components for the aerospace and electronics industries.

## FERRITE CONTENT METERS

Steel must be corrosion and acid resistant to maintain its strength under stresses such as pressure, heat, or chemicals.

Therefore, welds must be checked to ensure that the ferrite content is high enough to withstand the heat. Too much ferrite can promote corrosion.

# FERRITE CONTENT MEASUREMENT
# FERRITE CONTENT METER

## FERRITE-CHECK 240 / LM-FC240

**For measuring the ferrite content in austenitic and duplex steels, with external probe**

The ferrite content meter List-Magnetik FERRITE-CHECK 240 is an easy-to-use instrument with color display and external probe for measuring the ferrite content in austenitic and duplex steels according to the Basel standard DIN EN ISO 8249 using the magnetic induction method.
Ferrite content measurement is especially important for welded duplex steels to know if the weld has sufficient ferrite content to ensure weld strength. If there is insufficient heat input or cooling in the weld area, the ferrite content may be too low.
The FERRITE-CHECK 240 is supplied with 3 calibration standards traceable to the NIST standard.
The Ferrite Content Meter has a graphic LCD touch panel.

ISO calibrated

- according to the Basel standard DIN EN ISO 8249
- color LCD touch panel
- ferrite content in austenitic and duplex steels
- measurement of ferrite content in welds
- measurement units: Fe% and FN
- smallest measuring area is ø 2 mm
- data logger with 10,000 measurements, flexibly divisible
- fast and Continuous Ferrite Content Measurement
- wireless interface
- Windows PCs, Android and iOS apps


## APPLICATION

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Applications | Measurement of ferrite content in austenitic and duplex steels |
| Probe | FERRITE-2000, special probe for ferrite testing, externally connected |
| Measurement units | Fe% and FN |
| Measuring range | 0.2 - 100 Fe%<br>0.2 - 140 FN |
| Measurement method | Single measurement or scanning |
| Smallest measuring area | ø 2 mm |
| Accuracy | 5 % |
| Resolution | under 10: 0.01, over 10: 0.1 |
| Ambient temperature range | 0 ... 50 °C |
| Display | LCD color touch panel 320 x 480 pixels |
| Multilingual menu | English, German, Italian, French, Spanish |
| Data logger | 10,000 measurements, flexibly divisible |
| Statistics | count / maximum / minimum / average / standard deviation |
| Interface | wireless interface for communication with Android, iOS and Windows |
| App for Android, iOS, Windows | free via Google Play Store, Apple App Store, List-Magnetik website |
| External control | USB and SCPI communication interface |
| Power supply | 3 x 1.5 V AA Mignon.<br>External power supply can be connected via USB |
| Operating time | approx. 25 hours with battery, unlimited with external power supply |
| Dimensions | 150 x 85 x 35 mm |
| Weight | 320 g with batteries |

Subject to change without notice

# MAGNETIC FIELD MEASUREMENT
# MAGNET PERMEABILITY METER

## FERROPRO COMPACT / LM-FERRO-PRO

### Magnet permeability meter for measuring the relative magnetic permeability µr

The List-Magnetik Magnet Permeability Meter FerroPro compact can be used to determine the relative magnetic permeability µr of materials and components in the range between 1.000 and 5.000. Magnetic permeability is an indication of how strongly a material can be magnetized. The statement is useful where no magnetism is actually desired, for example with stainless steel.

Applications include quality control of stainless steels, non-destructive testing of structural components, material selection for electron/ion physics and nuclear magnetic resonance equipment, and detection of material changes in highly stressed parts.
FerroPro compact has a graphical LCD touch panel with an innovative user interface and a resolution of 320x480 pixels.

ISO calibrated

- according to ASTM A342 test methods 1 and 4, EN 60404-15 method 6 and VG 95578
- relative magnetic permeability µr between 1 and 5
- convenient and robust
- count, maximum, minimum, average standard deviation
- graphical LCD touch panel
- innovative user interface
- data logger with 10,000 measurements, flexibly divisible
- flexible data logger
- wireless interface
- Windows PCs, Android and iOS apps


## APPLICATION

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Measuring range | µr = 1.000 to 5.000 |
| Probe | FPC-5, interchangeable, with separately interchangeable cable |
| Accuracy at 20 °C | (µr - 1) x 5 %, against traceable calibration standards, can be readjusted |
| Resolution | 0.001 |
| Ambient temperature range | 0 - 50 °C |
| Display | LCD color touch panel 320x480 pixels |
| Temperature range | 0 to 50 °C |
| Multilingual menu | English, French, German, Italian, Spanish |
| Data logger | 10,000 measurements, flexibly divisible |
| Statistics | Count / Maximum / Minimum / Average / Standard deviation |
| Interface | wireless interface to communicate with Android, iOS and Windows |
| App for Android, iOS, Windows | free via Google Play Store, Apple App Store, List-Magnetik website |
| External control | via USB and SCPI communication interface |
| Power supply | 3x 1.5V AA Mignon. External power supply connectable via USB |
| Operating time | Approximately 25 hours with battery, unlimited with external power source. |
| Dimensions | 150 x 85 x 35 mm |
| Weight | 320 g with batteries |

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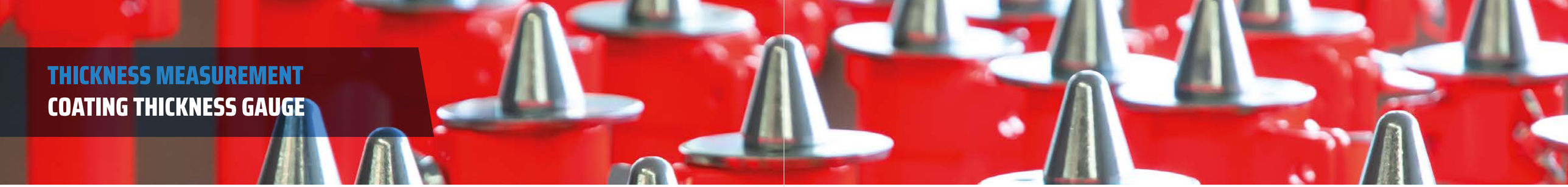

# THICKNESS MEASUREMENT
# COATING THICKNESS GAUGE

## MEGA-CHECK DX / LM-MCDX-52D

### Coating Thickness Gauge with dual function probe

The List-Magnetik MEGA-CHECK DX Coating Thickness Gauge can be connected to a wide range of specialized digital probes. Applications on very small apertures, thick layers and small measuring points are easily possible. Special functions such as scan measurement on rough surfaces and duplex measurement on galvanized and additionally coated steel complete the range of features.

A completely newly developed digital probe technology ensures very stable measurements thanks to a high sampling rate. The signals are digitized in the probe for absolutely interference-free and precise measurements. The result is highly accurate, reproducible coating thickness measurements.

ISO calibrated

- dual probe with sliding sleeve and prism
- on non-ferrous metal up to 2000 µm coating thickness
- iron and steel base up to 5000 µm
- standards: ISO 2178, ISO 2360, BS 5411, ASTM
- data logger with 10,000 measurement
- wireless interface for communication with Android, iOS and Windows


## APPLICATION



## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Application | Depending on the selection of the probe, measurement of paint, lacquer, plastic and galvanic layers on steel, measurement of insulating layers on non-ferrous metals with automatic recognition of the base material. |
| Standards | ISO 2178, ISO 2360, BS 5411, ASTM |
| Measuring probe | DX52-D dual function probe with sliding sleeve and prism |
| Measuring range | on steel up to 5 mm (5000 µm)<br>on NF metals up to 2 mm (2000 µm), |
| Min. measuring surface | ø 8 mm |
| Min. radius of curvature convex | 4 mm |
| Min. radius of curvature concave | 38 mm |
| Accuracy | below 100 µm ±1 µm, 100-1000 µm: ±1 %, 1000-2000 µm: ±3 %, > 2000 µm: ±5 % |
| Resolution | 1-100 µm: 0.1 µm, 100-1000 µm: 1 µm, >1000 µm: 10 µm |
| Measuring units | µm and mils |
| Ambient temperature | 0 ... 50 °C |
| Display | LCD touch panel color 320 x 480 pixel |
| Multilingual menu | English, German, Italian, French, Spanish |
| Scan function | for accurate measurement on rough or blasted surfaces |
| Duplex function | for exact determination of single layer thickness when measuring insulating layers on galvanized steel parts (zinc layer must be >60 µm) |
| Data logger | 10,000 measurements, flexibly divisible |
| Statistics | Count / Maximum / Minimum / Average / Standard deviation |
| Calibration memory | flexible number of calibration configurations storable |
| Interface | wireless 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 |
| External control | via USB and SCPI communication interface |
| Power supply | 3 x 1.5 V AA Mignon. External power supply can be connected via USB |
| Operating time | approx. 25 hours with battery, unlimited with external power supply |
| Dimensions | 150 x 85 x 35 mm |
| Weight | 320 g with batteries |

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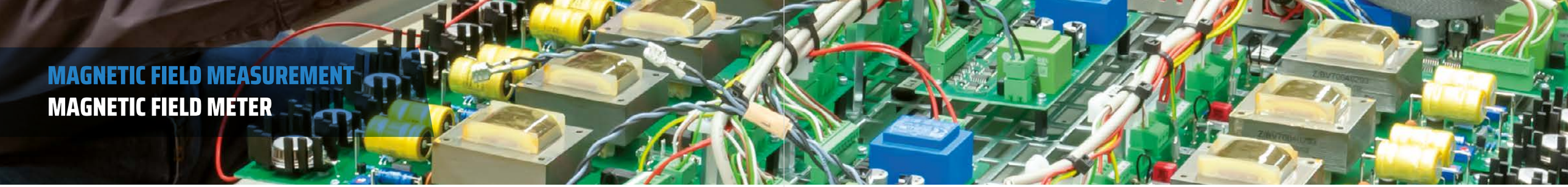

## MP-4000 / LM-MP4000-4T

### Magnetic Field Meter MP-4000 with transversal field probe PM4-T

Experience a revolution in measurement technology with the List-Magnetik MP-4000, a professional magnetic field meter. This powerful device belongs to a new generation of magnetic field meters. It uses external digital axial and transverse field probes to precisely measure DC, AC, and pulsed magnetic fields.
It is ideally suited as a digital gaussmeter, magnetometer, or tesla-meter for recording and analyzing magnetic field strength, intensity, and flux density. Its highly sensitive magnetic field sensors ensure reliable magnetic measurements.
This magnetic field measuring system can be used to measure weak geomagnetic fields and strong fields with field strengths of up to 40,000 A/cm.

ISO calibrated

- inclusive Transversal Field Probe PM4-T
- measurement of magnetic fields for direct, alternating, and pulsed fields
- measurements in A/cm, kA/m, Gauss, Tesla
- high resolution of magnetic fields
- accurate and interference-free
- Scan and pulse field
- data logger
- wireless interface
- Windows PCs, Android and iOS app


## APPLICATION

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Measuring units | A/cm - kA/m - Gauss / Oersted - Tesla switchable<br>(1 A/cm = 0.1 kA/m = 1.256 Gauss = 1.256 Oersted = 0.1256 mT) |
| Probe | transversal probes PM4-T |
| Measuring range direct field / DC | 0 ... 40,000 A/cm |
| Measuring range alternating field / AC | 0 ... 40,000 A/cm |
| Accuracy | in homogeneous field<br>±1 A/cm to 50 A/cm,<br>±2 % of measured value from 50 A/cm,<br>±3 % of measured value from 20,000 A/cm |
| Resolution | 0 ... 1000 A/cm: 0.1 A/cm,<br>> 1000 A/cm: 1 A/cm |
| Frequency range AC | 2 Hz – 20 kHz |
| Peak value memory | at pulse time >= 0.1 msec |
| Display | LCD touch panel color 320x480 pixel |
| Multilingual menu navigation | German, English, Italian, French, Spanish |
| Data logger | 10,000 measurements, flexibly divisible |
| Statistics | count / maximum / minimum / average / standard deviation |
| Interface | wireless interface for communication with Android, iOS and Windows |
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| App for Android, iOS, Windows: | free of charge via Google Play Store, Apple App Store, List-Magnetik website |
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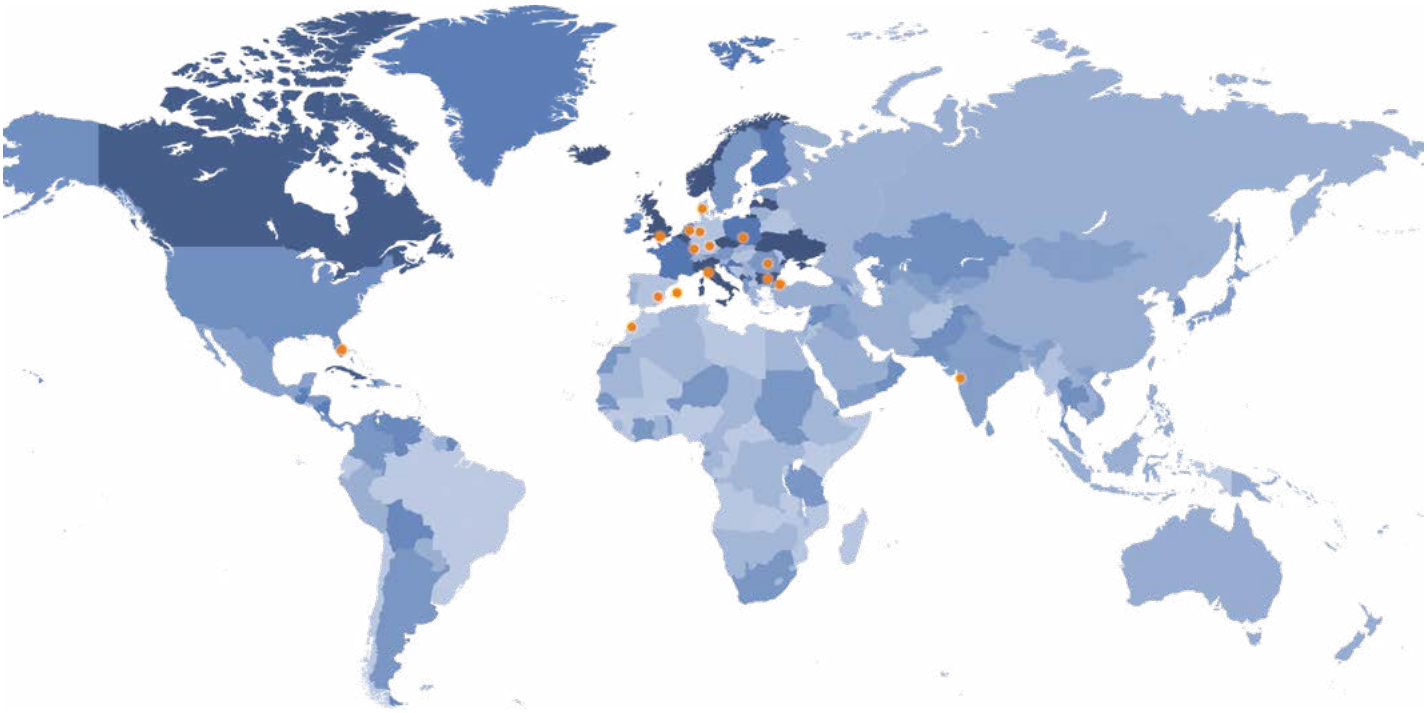
**Transversal Field Probe PM4-T**

| | |
|---|---|
| Hall Sensor distance | 0.9 mm |
| Probe thickness | 1.8 mm |
| Total length of the probe | 127 mm |
| Length of the probe handle | 65 mm |
| Width of the probe tube | 5.6 mm |

Subject to change without notice

# COMPANY LOCATIONS WORLDWIDE

## PCE Instruments SE



## CONTACT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www.pce-instruments.com


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|---|---|---|
| Germany | PCE Deutschland GmbH | www.pce-instruments.com/deutsch |
| Germany | DriveTest GmbH | www.drivetest.de |
| Germany | A & P Instruments GmbH | www.apinstruments.de |
| Germany | List-Magnetik GmbH | www.list-magnetik.com |
| Spain | PCE Iberica S.L. | www.pce-instruments.com/espanol |
| USA | PCE Americas Inc. | www.pce-instruments.com/us |
| UK | PCE Instruments UK Ltd. | www.pce-instruments.com/english |
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