OPERATION MANUAL

MAGNETIC FIELD METER
GAUSSMETER

MP-1000

2025-08

List-Magnetik
A COMPANY OF PCE INSTRUMENTS

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INTRODUCTION

We have taken great care to ensure that these operating instructions are as clear and concise as possible. However, if you still have questions about the operation, please contact our competent service technicians who are always at the ready. They will be delighted to help you further.

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. With the easy one-button operation, magnetic field strength can be measured from the weak earth magnetic field up to strong field s of 20,000 A/cm, switchable in Gauss. 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.

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.

Applicable measuring probes are:

Axial probes **P-A2** and **P-W2** (angular axial probe)
Transversal probes **P-T2** and **P-Z2** (flexible reed probe)

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.

The device has the following measurement ranges:

0 - 100 A/cm
100 - 1,000 A/cm
1,000 - 10,000 A/cm (displayed as 1-10 kA/cm)
10,000 - 20,000 A/cm (displayed as 10-20 kA/cm)

The measurement range switching takes place automatically in DC or AC mode.

Unit conversion: 1 A/cm = 0.1 kA/m = 1.256 G (Gauss)

WARNINGS AND HAZARD INFORMATION

List-Magnetik expressly advises that the MP-1000 magnetic field measurement device may only be used for its proper intended purpose, the measurement of magnetic fields. Any other use is impermissible and involves the deliberate involvement of incalculable risks for the device and the operator.



The device operating company must ensure that it is only used by personnel who have access to these operating instructions and who have read and understood them.



The device and the sensor must not be brought into contact with electrical power sources that are not adequately insulated, under any circumstances. Disregard of this warning can result in a fatal hazard for the operator.



Although the device is splash-proof, it is not waterproof. The device must not be submerged in water or other liquids or cleaned with water. If the device comes into contact with a liquid medium, it must be switched off immediately.



Do not use the device in a potentially explosive environment (smoke, gases).

The use of any electrical device, even this battery-operated measurement device, can result in an explosion.



The device must only be opened to replace the battery. Do not carry out any repairs to the electrics yourself. Instead, send the device to us for diagnostics in the event of a fault.

OPERATION WITH MEASURING DUMMY – SAFETY INSTRUCTION

If you are using the MP-1000 with a special measuring dummy instead of a probe for the measurement in a magnetizing system, be sure to observe the following safety instructions:



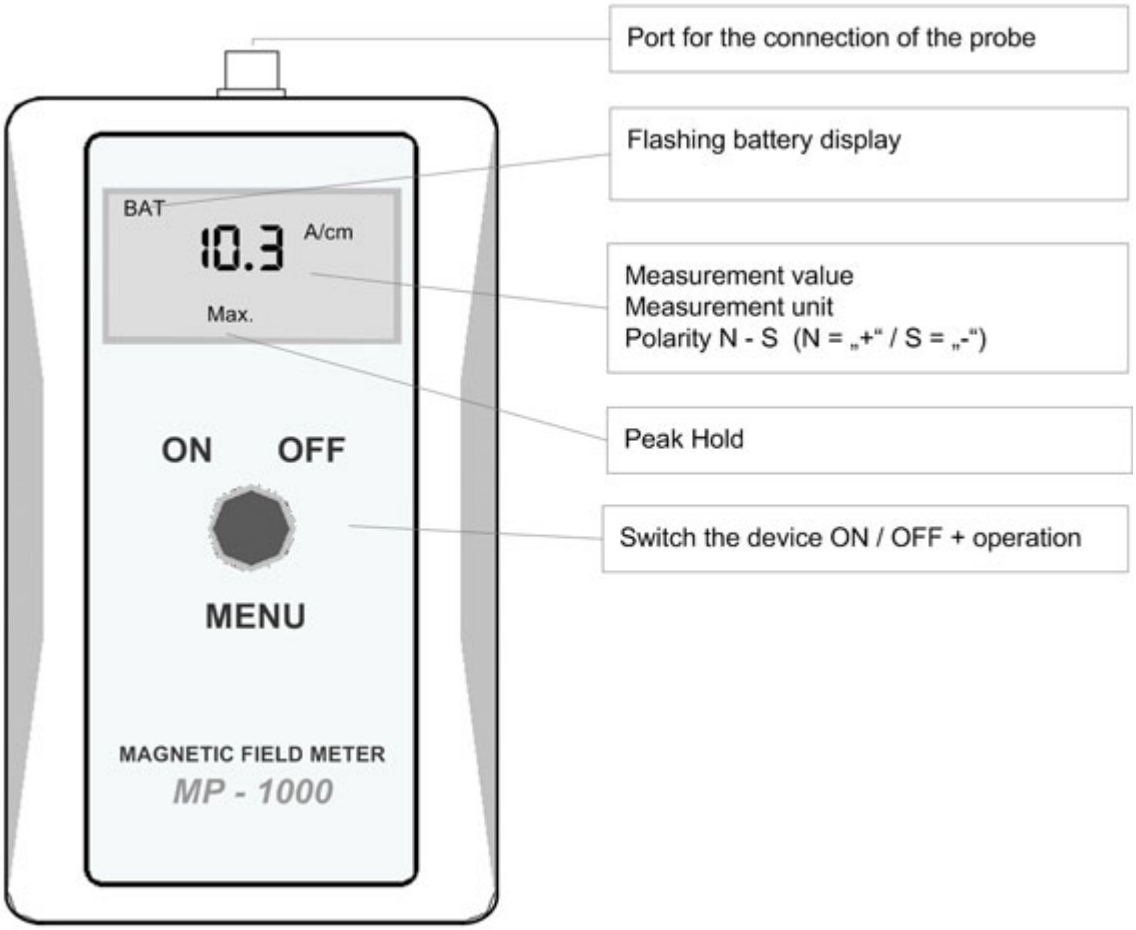
The complete measuring unit with MP-1000, measuring dummy and, connection cable may only be operated behind the closed and locked protection door at the magnetizing coil, according to Performance Level PLe ISO 13849.

QUICK START

You can measure immediately with the device and do not need to make any complicated settings.

Just switch on the device with the red button. Automatic zero balancing takes place when the device is switched on. Therefore, the probe should not be in a magnetic field when doing so. The last measured value appears briefly on the display when in peak mode, otherwise 0 or the Earth's magnetic field strength value.

That's all, now you are ready to take the first measurement in the last selected mode (DC/AC/Peak). The factory setting is **DC**.



OPERATION

Switch on the device with the button until the current measured value appears on the display and a short acoustic signal. The last measured value appears briefly on the display when in peak mode, otherwise 0 or the Earth's magnetic field strength value.

To operate the device, press and hold the red button until the following functions appear one after the other:

Display:	Function:
-0-	Perform zero balancing
oFF	Switch off
dc	Select DC field range
Ac	Select AC / alternating field range
P1	Select peak value range Peak up to 160 A/cm (200 G)
P2	Select peak value range Peak from 160 A/cm (200 G)
un	Change the measurement unit A/cm – G (Gauss)
rES	Reset the device – load factory calibration

In order to activate the function #

-0- / Zero balancing and **oFF / Switch off**

briefly release the button, when the function is displayed.
To activate the other functions

dc - Ac - P1 - P2 - un - rES

briefly release the button and then **press the button again within 5 seconds**.

MENU FUNCTIONS

-0- CALIBRATE - ZERO POINT SETTING

Press and hold the red button until **-0- Calibrate** is displayed. Then release the button immediately. A zero-point calibration is now performed. The measuring probe must not be located in any magnetic field.

After the zero balancing is done, the display shows a value of ± 0.2 due to the influence of the earth's magnetic field when moving the measuring probe.

oFF - SWITCH OFF

Press and hold the red button until **oFF** is displayed. Then release the button immediately, the device will be switched off.

The device also switches off automatically when the last value does not change within 2 minutes.

dc - SELECT DC FIELD RANGE

In order to switch to the **DC** field range, press and hold the red button until **dc** is displayed. Then release the button immediately. **dc** flashes. Now **press the red button again** to confirm the change.

In DC fields, the north polarity is displayed without sign, the south polarity with a minus sign.

Ac - SELECT ALTERNATING FIELD RANGE

In order to switch to the **AC** field range, press and hold the red button until **Ac** is displayed. Then release the button immediately. **Ac** flashes. Now **press the red button again** to confirm the change.

In the **AC** field range the unit of measurement is displayed **blinking**. As value the respective effective value (true RMS) is displayed.

P1 / P2 - SELECT PEAK MEMORY

The peak memory measures both DC and AC fields.

The peak memory can only be used from 5 A/cm, for lower field strengths please switch to **DC** or **AC**.

In order to switch to the peak memory, press and hold the red button until **P1 or P2** is displayed. Then release the button immediately. **P1** / **P2** flashes. Now **press the red button again** to confirm the change.

Use the peak memory **P1** to measure magnetic fields **up to 160 A/cm (200 G)** and the peak memory **P2** to measure magnetic fields **from 160 A/cm (200 G).**

After the peak memory is switched on the **Max.** symbol appears on the display to show that that peak memory is switched on.
If there is already a measured value in the peak memory and a higher measured value is recorded then the old measured value will be overwritten by the new one. A short acoustic signal is sounded when the measured value is exceeded.
When measuring AC fields in peak memory mode, the peak value and not the effective value will be saved if the AC field is sinusoidal.

un - CHANGE THE MEASURING UNIT (A/CM – G, GAUSS)

The factory setting is the measuring unit **A/cm**.

In order to switch between the unit **A/cm and G (Gauss)**, press and hold the red button until **un** is displayed. Then release the button immediately. **un** flashes. Now **press the red button again** to switch to the other measuring unit. The measuring unit remains active even after switching off the device.
1 A/cm = 1.256 G (Gauss)

Magnetic fields from 1,000 A/cm are displayed in kA/m.
Magnetic fields from 1,000 G (Gauss) are displayed in kG.

rES - RESET THE DEVICE – RELOAD FACTORY CALIBRATION

Reset **rES** resets all device settings to the factory settings. This function should be used if settings have been changed and the device does not work properly (strongly fluctuating measured values) or if the calibration of the probe does not work properly.

In order to perform the reset, press and hold the red button until **rES** is displayed. Then release the button immediately. **rES** flashes. Press the red button again to reset the device.

APPLICABLE MEASURING PROBES

Measuring range 0 – 20.000 A/cm

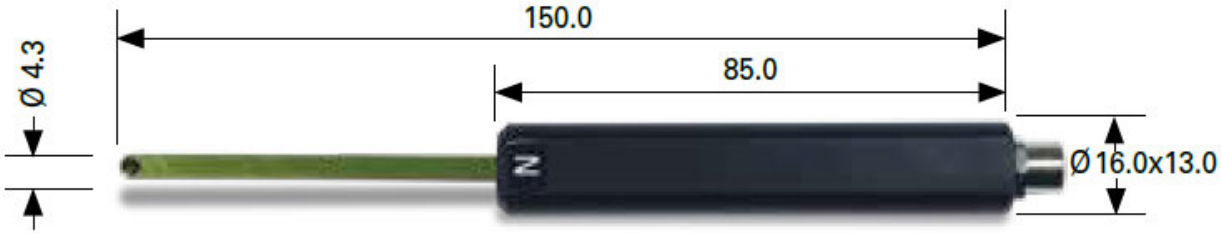
Axial Field Probe P-A2



Tangential Field Probe P-T2 1.7 mm thickness



Flexible Reed Probe P-Z2 0.9 mm thickness



Angular Axial Probe P-W2



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.

IMPORTANT NOTES / FAULT ANALYSIS

- **'- - -' appears on the display**

  The measurement range of 20,000 A/cm (Gauss) has been exceeded.
  Or: The measurement range in the peak memory P1 has been exceeded –> select measurement range P2

- The battery must be replaced as soon as the **flashing BAT** symbol is displayed when the device is switched on.

- If you keep the button pressed for a longer time when switching on, the **firmware version** of the device and the connected probe will be displayed.

- If the device is switched on without a measuring probe connected, or the connected probed is defect, or an incompatible probe P-A4/P-T4/P-Z4 is connected, **n.Pb** (no probe connected) is displayed and the device automatically switches off again.

BATTERY REPLACEMENT

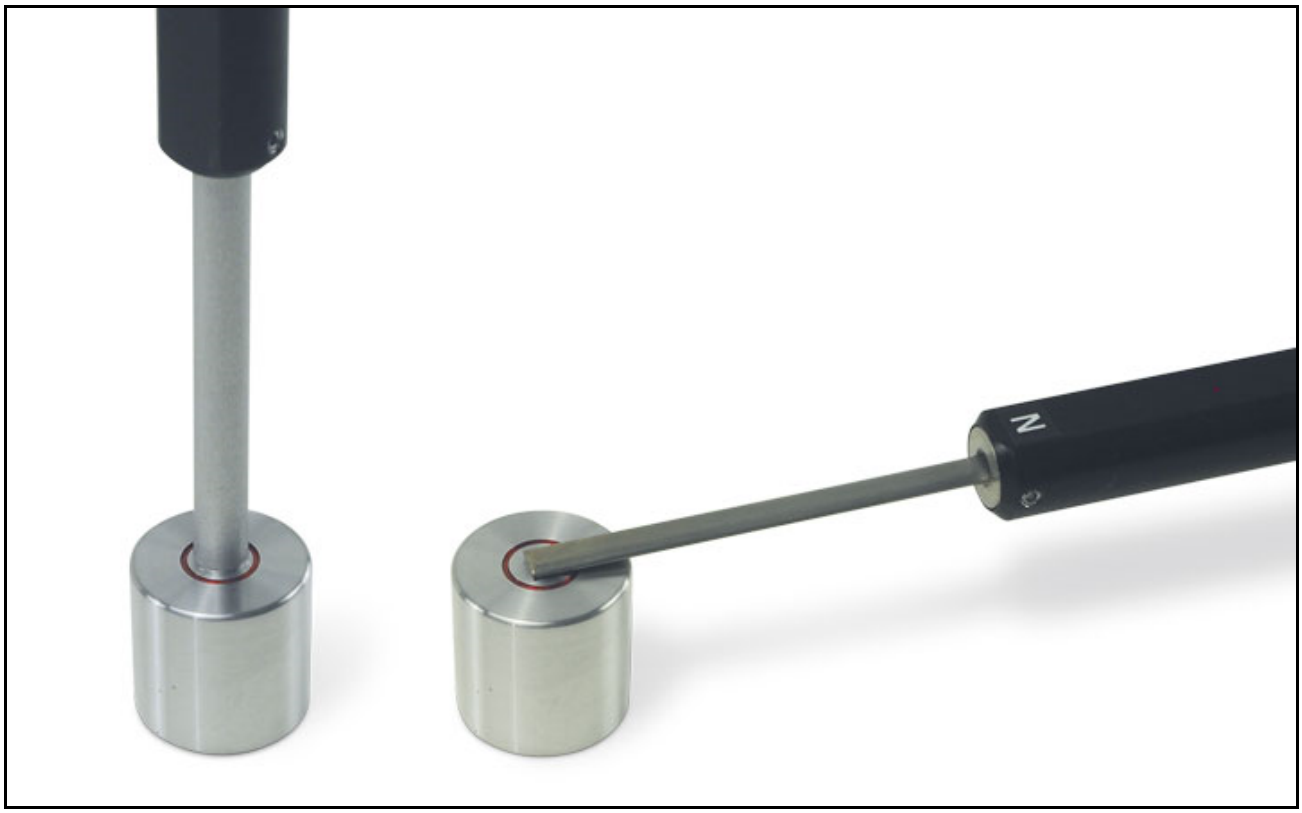
The batteries must be replaced as soon as the **BAT** symbol flashes on the display when the device is switched on. The device switches itself off automatically at an insufficient battery voltage. **Please use only leak-proof batteries.**

CHECKING WITH CALIBRATION STANDARD

No instrument calibration is required. The probes are pre-calibrated and interchangeable.
A calibration standard with a reference value of **180 A/cm** is optionally available to check the instrument with the probe.

The procedure is as follows: Place the probe in the center of the ring and determine the maximum reading by moving (turning or pushing) the probe. Compare the displayed value with the value of the calibration standard.

If the value is within tolerance, the instrument and probe are working properly. If there is a discrepancy, the entire package of instrument, probe, and calibration standard should be returned to the manufacturer for inspection and recalibration.



TECHNICAL DATA MP-1000

Measuring units:	A/cm – Gauss (G) switchable (1 A/cm = 1.256 Gauss)
Applicable measuring probes:	Axial probes P-A2 and P-W2, Transversal probes P-T2 and P-Z2
Measuring range DC:	0-20,000 A/cm
Measuring range AC:	20-20,000 A/cm
Accuracy:	in the homogeneous field ± 1 A/cm up to 50 A/cm, ± 2 % of measured value from 50 A/cm
Resolution:	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:	10 Hz – 5 kHz
Peak Hold:	with impulse duration >= 0.1 msec
Display:	LCD display 3-digit
Power supply:	2x 1.5 V AA Mignon
Operating time:	approx. 35 h
Dimensions:	105 x 65 x 26 mm
Weight:	137 g with batteries
Warranty:	12 months on the device, 3 months on the probe

We supply:

- Coating Thickness Meters
- Magnetic Field Meters
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We provide expert advice and design metrology solutions tailored to your specific needs.

Fast calibration and repair service

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