

MAG

INSTRUMENTS



MI-PM

PULSE MAGNETISER

www.mag-instruments.com

Compact and easy-to-use Pulse Magnetiser for magnetic treatment

Standalone
tabletop device
capable of
magnetizing discrete
samples in
magnetic fields up
to 12 Tesla

Ideal for
Isothermal
Remanent
Magnetization
experiments, especially
when dealing with
highly coercive
materials

Customizable
sample holders
and coils for various
sample sizes/
geometries
available on
request

Designed to be simple,
robust, and long-lasting...



Capacitor Voltage Indicator

Independent monitoring
of the capacitor charging

Control Interface

Knob and buttons allow quick
field adjustment and
application

Key features

Application-specific coils and holders

From research setups to manufacturing lines, we deliver custom coil and holder designs matched to your part geometry, target field, and magnetization process, including high-field solutions up to 12 T.

Application-specific validation systems

Beyond magnetization, we develop custom verification systems to ensure that magnetized assemblies meet your functional and quality targets.

Capacitor charge voltage indicator

Displays the capacitor charge voltage independently of the digital control system, providing an extra layer of safety and verification.

Precise field control

Provides accurate control of the magnetizing field strength in millitesla (mT) for consistently reliable results

Operable with or without a PC

Operate remotely from a connected PC or adjust the field strength directly using the knob beside the built-in LCD interface

Self-contained tabletop design

Compact dimensions (43 cm x 18 cm x 45 cm) and weight under 18 kg ensure easy integration into any laboratory setting

Seamless integration with other MI Instruments

Fully compatible with our laboratory PC software, enabling centralized control and data management across all connected instruments

Built-in temperature sensor for coils

Continuous temperature monitoring enables automated tuning of the internal capacitor voltage, ensuring a stable and consistent magnetic pulse

Technical Specifications

Property	Value
Peak field	customisable up to 12 T
Sample handling	manual (handler provided)
Power supply	110 or 230 V
Power consumption	450 W while charging
Charge time	< 20 s
Weight ¹	< 19 kg
Dimensions (W×D×H) ¹	48 cm × 48.5 cm × 20 cm



Operation



Flexible operation

Through its built-in graphic LCD display, control knob, and start-stop buttons, the tabletop Pulse Magnetizer can be fully operated standalone. At the same time, the PM is equipped with a USB interface for remote operation via a connected PC.



Magnetic field control

The PM provides high precision control over a strong magnetic pulse applied to rock samples and, therefore, over the acquisition of Isothermal Remanent Magnetization experiments.



Unified MI software

Seamless integration with our comprehensive laboratory software suite allows you to control all of your instruments from one unified system—a feature that sets the PM apart from any other solution on the market.



Temperature monitoring

Continuous coil temperature monitoring and active coil cooling during operation guarantees consistent magnetic pulses regardless of the coil temperature.



Precision & flexibility

Custom-designed coils can be provided for various sample dimensions. Custom-made sample holders ensure comfortable work with any type of specimen.

Areas of Application



Industrial Permanent Magnets & Tools

Effectively magnetize small permanent magnets, such as ferrite, NdFeB, and SmCo blocks, rings, and segments, as well as magnetic screwdrivers and bits. Pulse magnetizer is ideal for laboratories and production lines that need precise, repeatable magnetization of compact magnet components and magnetic hand tools.



Motors, Sensors & Audio Components

Use the Pulse Magnetiser to precisely magnetize rotors in small motors (e.g., RC, gimbal, and other compact BLDC designs), as well as magnets in tweeters, midrange drivers, small woofers, headphones, earbuds, and microphones. It also serves for magnetizing small magnets in sensors and actuators, including Hall and reed sensors, magnetic encoder rings and disks, relays, latching solenoids, and valves.



Environmental & Material Sciences

Magnetize soils, sediments, and engineered materials to characterize their intrinsic magnetic properties. The PM's stable, adjustable magnetic pulses enable investigations of pollution records and climate-related variations, as well as key parameters such as coercivity, saturation magnetization, and magnetic grain interactions.



Paleo and Rock Magnetism

Use the Pulse Magnetiser to impart a well-defined remanent magnetization to oriented rock samples. Its controlled field pulses enable detailed studies of coercivity and remanence, helping to reconstruct geomagnetic field pale-intensity and to identify magnetic carriers in volcanic and sedimentary rocks.



Archeology

Introduce controlled magnetization to soil and archaeological artifacts to enhance the interpretation of magnetic anomalies detected in archaeological surveys. This process improves the accuracy and resolution of magnetic mappings, aiding in more informed archaeological interpretations.

About Mag-Instruments



Who we are

Based in Munich, Germany, Mag-Instruments was founded in 2014 by robotics engineer Dr. Przemyslaw Kryczka and a group of specialists in geophysics, mechatronics, and robotics to bring state-of-the-art technology into magnetic measurements.

In cooperation with Prof. Nikolai Petersen from the Ludwig Maximilian University of Munich, Mag-Instruments continues to manufacture and service all products originally developed by Petersen Instruments.



What we do

We design and manufacture robust scientific equipment for laboratory and field applications. Combining geophysical know-how with mechatronics and robotics engineering, our team prioritizes reliable data quality. Our product line includes state-of-the-art magnetometers and magnetic field generating instruments.

Our in-house development process facilitates flexibility and cost reduction, allowing us to provide affordable, custom solutions for your research endeavor.



We can customize our products to best suit your individual application needs!

Contact us for new solutions, including automated measurement systems.



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