

## USB HALL PROBES



HU-PT1-164005

### • Description

Magnet-Physik USB Hall probes allow reading the magnetic field strength or flux density directly into a computer, without need of an additional measuring instrument. They are connected to a USB port. Easy-to-use data acquisition and display software is included. It allows acquiring single data readings or logging multiple readings into lists or data files. The user can also integrate the probes into own software projects. Programming examples are available.

Key features:

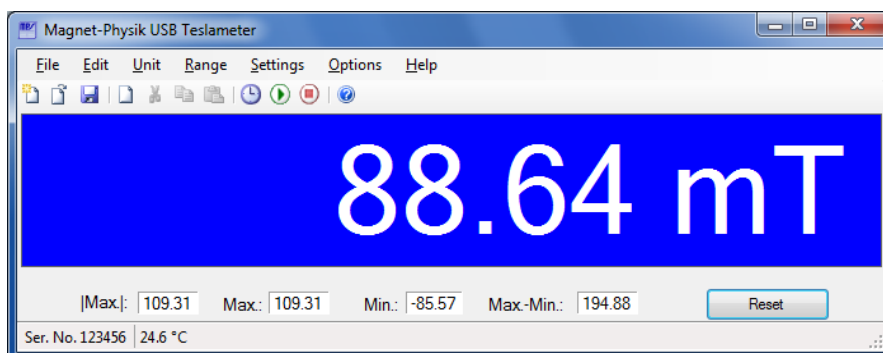
- Automatic or manual range selection
- Linearity correction
- Temperature correction ("professional" probes only)
- Adjustable filter function (moving average)
- Adjustable sampling rate
- Automatic probe zeroing
- No driver installation required

### • Applications

USB Hall probes can for example be applied in the following areas:

- Quality control of permanent magnets
- Quality control of soft magnetic components
- Quality control of magnet systems (motors, loudspeakers, magnetic clamps, couplings etc.)
- Materials research
- Development of magnet systems
- Magnet testing
- Magnet sorting
- Material analysis
- Automated testing
- Process control

### • Gauss-/Teslameter Software



- Units: T, G, A/m, A/cm, Oe
- Data acquisition timer
- Set ranges or auto range
- Collect data in a table
- Save data to text files
- Copy and paste data
- Log data to files
- Capture max. and min.
- Zero probe
- Set filter
- Set sampling rate



## • Designs

The probes are offered in two designs: "standard" and "professional". Please refer to the following table for the specific features.

## • Technical Data

Design Model	Standard		Professional	
	HU-ST1-184605	HU-SA1-264605	HU-PT1-164005	HU-PA1-4805
Orientation	transverse	axial	transverse	axial
Thickness	1.8 mm max.	2.6 mm	1.6 mm max.	-
Diameter	-	-	-	4.8 mm
Width	4.6 mm	4.6 mm	4.0 mm	-
Length	55 mm			
Cable length	approx. 2 m (7 ft)			
Probe surface	Heat-shrink tubing		Fiberglass	
Units	T (Tesla), G (Gauss), A/m, A/cm, Oe (Oersted)			
Usable resolution	0.01 mT / 0.1 G / 0.01 kA/m / 0.1 A/cm / 0.1 Oe			
- without filter, approx.	0.001 mT / 0.01 G / 0.001 kA/m / 0.01 A/cm / 0.01 Oe			
- with filter, approx.				
Maximum reading	2 T / 20 kG / 1.6 MA/m / 16 kA/cm / 20 kOe		5 T / 50 kG / 4 MA/m / 40 kA/cm / 50 kOe	
Accuracy	2 %		0.5 % up to 1.5 T 1 % up to 3 T	0.5 % up to 1.5 T 1.5 % up to 3 T
Temperature correction and temperature display	no		yes	
Temperature coefficient of sensitivity	approx. -0.04 %/°C		± 0.02 %/°C max.	
Active area	0.4 mm nominal diameter			
Data acquisition rate	adjustable, approx. 4 to approx. 242 readings per second			
Frequency range	DC			
Operating temperature range	0 °C to 75 °C			
Supported operating systems	Microsoft Windows® Vista, 7, 8, 10			
Power supply	from USB			

Due to continuous product improvements, specifications are subject to change without notice.

## • Package Content

The probes are supplied in a storage case. The data acquisition program *USB Teslometer*, operating instructions and help in English, German and French languages, as well as programming examples in Microsoft Visual C# and Visual Basic.NET and a description for using the probes with National Instruments LabVIEW are available for download from [www.magnet-physik.de](http://www.magnet-physik.de).

Standard probes (S) are supplied with a calibration confirmation without measured values. A full proprietary calibration certificate or a calibration in our ISO/IEC 17025 accredited calibration laboratories in Germany or in the USA is available for an extra charge.

Professional probes (P) are supplied with a proprietary calibration certificate. A calibration in our ISO/IEC 17025 accredited calibration laboratories in Germany or in the USA is available for an extra charge.

## • Accessory (not included in package)

Magnetic shielding chambers: see datasheet *NK Shielding Chambers*