

DESCRIPTION:

Low Noise Teslameter with integrated Hall Probe incorporates a high accuracy magnetic field-to-analog-voltage transducer with a high-level, temperature compensated output signal for each of the three components of the measured magnetic flux density. A digital module is additionally applied to the analog transducer to form the digital Teslameter. Digital Teslameter provides the possibility of automatic data acquisition via a USB serial interface by a host computer. In this way, customers can easily integrate a measurement routine into their measurement system using its programming tools such as Basic, C, C++, Delphi, LabVIEW, etc.

The temperature measurement feature allows user to obtain current temperature values while monitoring the magnetic field.

The transducer consists of two modules:

1. Hall probe and Cable (Module H), and
2. Electronics (Module E).

The Low-Noise Digital Teslameter is a high accuracy temperature-stabilized instrument for the precise measurement of magnetic field.

Each Transducer is calibrated with the individual correction data for the connected probe, so the probe is replaceable.

KEY FEATURES:

- Teslameter for Laboratory Applications
- Teslameter with integrated 1-,2-,3-axis Hall Probes for measuring DC & AC magnetic fields up to 5kHz
- Very High Resolution: 2ppm at magnetic field range: 0.2T, 2T, 20T
- Accuracy better than 0.005%
- High temperature stability (< 20ppm/°C)
- Units in gauss (G), tesla (T)
- TFT LCD graphic display, displaying Bx, By and Bz components and the temperature value measured on the Hall Probe
- Data Acquisition & Visualization PC Software runs on Windows 7/XP (USB 2.0)

TYPICAL APPLICATIONS:

- Quality control and monitoring of permanent magnets & magnet systems (generators, motors)
- Development of magnet systems & process control
- Magnetic field mapping



Figure 1. Low-Noise Teslameter 3MH5A with integrated Hall Probe

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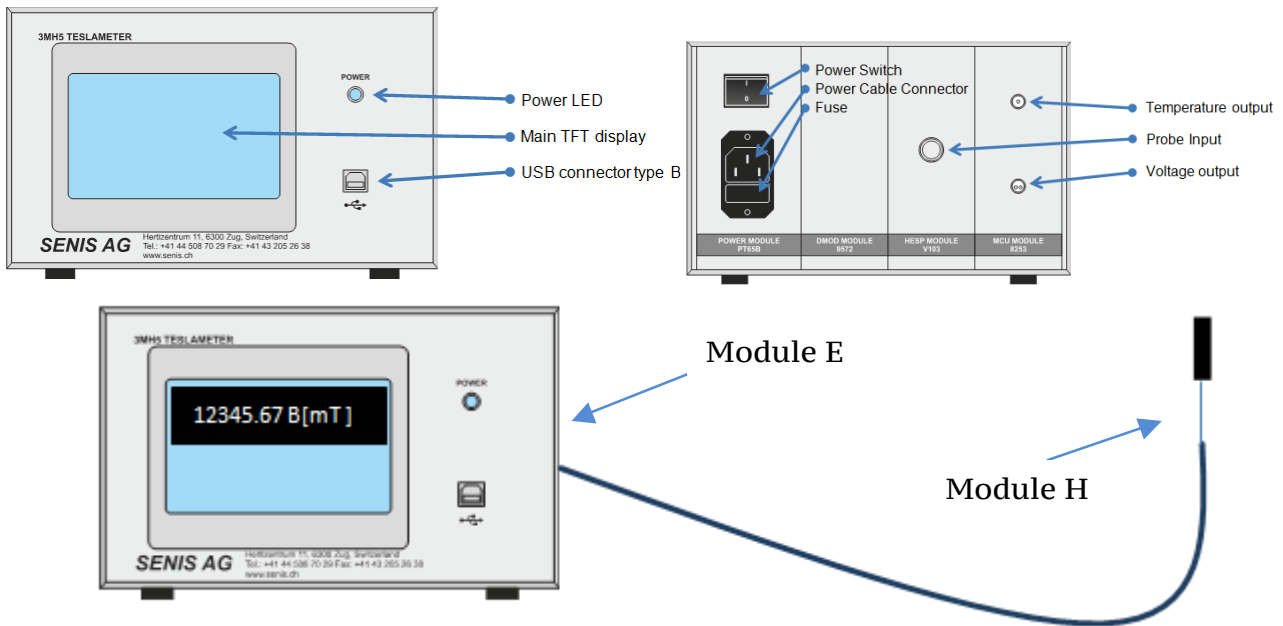


Figure 2. Structure of the Low-Noise Teslameter 3MH5A with integrated Hall Probe
 - Module H, consisting of the Hall Probe and the CaH Cable;
 - Module E, analog and digital electronics for signal conditioning.

HALL PROBE SPECIFICATIONS (Module H):

The Hall Probe contains a CMOS integrated circuit, three groups of mutually orthogonal Hall elements and a temperature sensor. The integrated Hall elements occupy very small area (150 μ m x 150 μ m), which provides very high spatial resolution of the probe.

The output of the Hall Probe are high-level analog voltages proportional to the measured components of a magnetic field and a voltage proportional with the probe temperature.

There are a number of different geometries/dimensions of Hall probes available, in order to fulfill a wide range of customer's application requirements.

For Probe selection, please see Hall Probes Sections at www.senis.ch

HALL PROBE KEY FEATURES

The unique advantages of the fully integrated probe include:

- Measurement of magnetic field components
- Very low noise and offset fluctuations
- High disturbance immunity
- Virtually no planar Hall Effect
- Negligible inductive loops
- The probe provides a temperature signal for an efficient compensation of temperature effects

MAGNETIC AND ELECTRICAL SPECIFICATIONS:

(FOR DETAILS, PLEASE SEE THE SPECIFIC DATASHEET WITH SELECTED HALL PROBE)

Magnetic field measurement range: ± 200 mT, 2T, 20T (different ranges available)

Total measuring Accuracy: 0.005%