

THREE-AXIS HALL MAGNETOMETER THM1176-HFC – “High Field Compact”

To go where no 3-axis magnetometer has gone before

The bore of small-aperture magnets or the gap between rotor and stator are inaccessible to most magnetometers – and completely out of the question for 3-axis magnetometers. This is doubly unfortunate because in these applications, small manufacturing tolerances can make a big difference and make the magnetic field particularly hard to predict.



The THM1176-HFC is designed to address these applications. It features a novel 3-axis Hall probe as thick as about 5 sheets of paper. Functionally identical to the standard THM1176 Hall probe, it has the same wide range and microscopic active volume.

A complete system

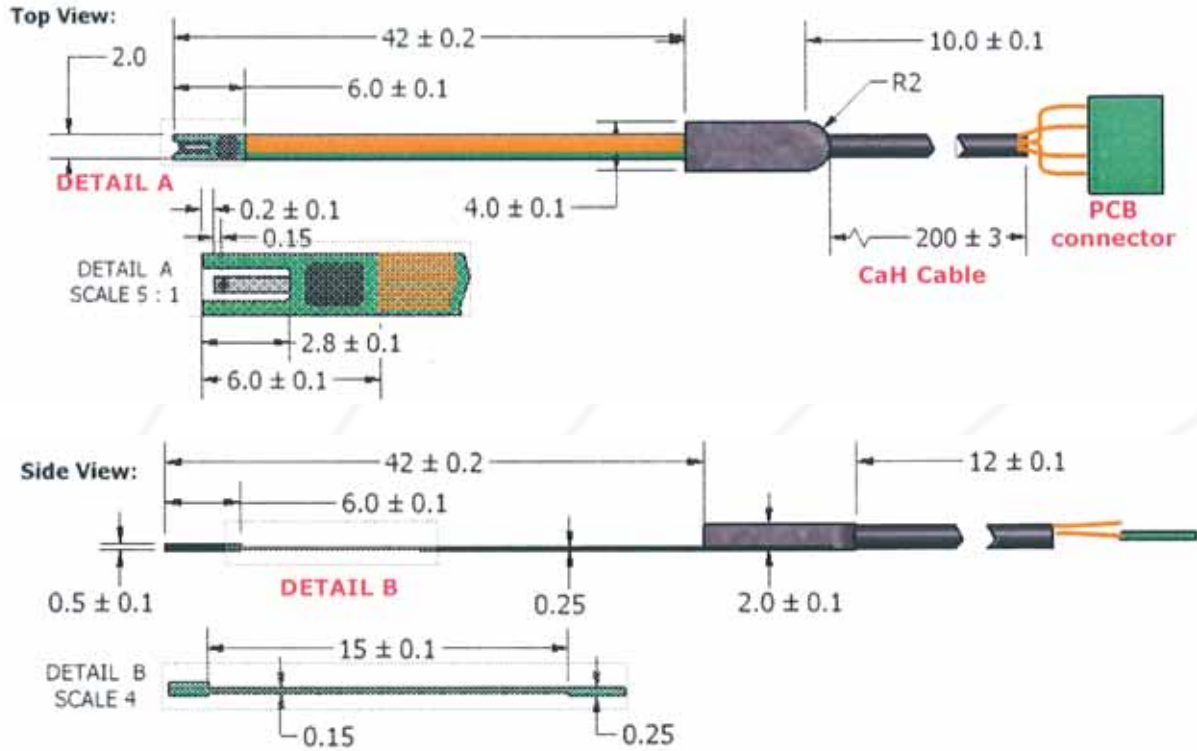
The THM1176-HFC is easy to use as well as revolutionary, featuring an ultra-compact form factor, USB interface, standards-based communication protocols, full-featured instrument command set, turnkey operation on a desktop or handheld computer, and easy programmability via LabVIEW. The same software drives any of the probes in the THM1176 family, and an optional handheld kit facilitates field measurements.

Key specifications

See the THM1176 data sheet for complete specifications.

Output	B_x , B_y , B_z , temperature, time
Ranges	0.1, 0.5, 3, 20 T; calibrated to 1.5 T
Accuracy	$\pm 1\%$ of reading, limited by resolution
Resolution	0.3 mT (0.1 T range); improved by oversampling $\sim 1/\sqrt{N}$
Bandwidth	DC to 1 kHz
Sample rate	< 12 kHz (free-run), ≤ 2 kHz (timed), < 400 Hz (triggered)
Probe size	0.5x2x42 mm. See back for mechanical drawings. Probe is shipped in a protective housing that should also be used for storage. Two thin ceramic plates are supplied to improve rigidity and planarity, if needed.
Field sensitive point	150 x 150 x 10 μm

Mechanical drawings



Part Numbers

THM1176-HFC-PC

Desktop kit with High-Field Compact 3-Axis Hall Magnetometer

- 3-axis High-Field Hall Magnetometer with 3 meter cable
- Calibration to 1.5T
- Zero Gauss Chamber
- CD with acquisition software for Windows and Mac, LabVIEW source code, and user's manual
- Software license from Metrolab, including free updates

THM1176-HFC-PDA

Handheld kit with High-Field Compact 3-Axis Hall Magnetometer

Includes desktop kit THM1176-HFC-PC, plus:

- Industrial-quality PDA
- Heavy duty battery (2600 mAh)
- Adaptor cable
- Pre-installed acquisition software, with licenses from Metrolab including free updates, and National Instruments
- CD with acquisition software for Windows, Mac and PDA (Windows Mobile), LabVIEW source code, and user's manual
- Carrying Case