



## THREE-AXIS HALL MAGNETOMETER THM1176 – TECHNICAL SPECIFICATIONS

### Measurement

Ranges:	100 mT, 500 mT, 3T, 20T (automatic or manual ranging)			
Data output:	- $B_x$ , $B_y$ , $B_z$ (ASCII or binary, single point or array, calibrated or not) - Temperature (uncalibrated) - Time stamp (10ms resolution)			
Units:	T, mT, G, kG, MHz p (NMR frequency of proton)			
Sample rate: - Immediate trigger (default) - Timed trigger - Bus trigger (via USB)	Approx. 12 kHz (free-running, until internal buffer is full) 0.36 Hz to 2.048 kHz (timer resolution of at least 0.24 ‰; continuous read-out in blocks of 2048 samples) Up to approx. 400 Hz (until internal buffer is full) <i>Notes: 1 sample = (<math>B_x</math>, <math>B_y</math>, <math>B_z</math>); Internal buffer size = 2048 samples</i>			
Bandwidth:	DC to 1 kHz			
Resolution: - No averaging - Averaging 100 samples	100 mT range 300 $\mu$ T 30 $\mu$ T	500 mT range 500 $\mu$ T 50 $\mu$ T	3 T range 3 mT 300 $\mu$ T	20 T range 15 mT 1.5 mT
Accuracy:	The greater of 1% of reading or specified resolution			Specified 0-3 T
User offset correction:	To be performed before each series of measurements, in Zero Gauss Chamber supplied			

### Interface

Interface:	USB 2.0, full speed (12 Mbps)
Class / USB driver:	USBTMC (USB Test & Measurement Class) / USB488 DFU (Device Firmware Upgrade)
Protocol:	IEEE 488.2, SCPI (Standard Commands for Programmable Instruments)
Connector:	USB Type A
Power:	USB bus-powered, 4.3V to 5.25V 35 mA min (idle, power-saver on), 90 mA max
Wake-up time from power-saver:	100 ms

Revision Date: 12 MAY 2008

#### Manufacturer:

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### Operating conditions

Operating temperature:	0°C to +40°C
Storage temperature:	-20°C to +60°C
Operating magnetic field:	Instrument electronics: 3 T max

### Mechanical

<p>Size:</p> <ul style="list-style-type: none"> <li>- Instrument electronics</li> <li>- Probe with housing</li> <li>- Probe without housing</li> </ul>	<p>76 x 22.5 x 14 mm<sup>3</sup> 113 x 16 x 10 mm<sup>3</sup></p>
Stationary mounting point:	For M2.5 screw (not included)
Weight:	<ul style="list-style-type: none"> <li>- With 2 m cable</li> <li>- With 5 m cable</li> </ul>
Size of field sensitive point:	150 μm x 150 μm x 10 μm
Sensor dimensions and location of field sensitive point:	<p>"+" marks the field sensitive point.</p>

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### Desktop kit

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Contents:	<ul style="list-style-type: none"><li>- 3-Axis Hall Probe with 3 or 6 meter cable</li><li>- Zero Gauss Chamber</li><li>- Full-range calibration on 0.1, 0.5 and 3 T ranges; 20 T range to 3 T</li><li>- CD with acquisition software for PC (Windows XP/Vista), LabVIEW source code for all PC software, and user's manual</li><li>- Software license from Metrolab, including free updates</li></ul>
Software functions:	<ul style="list-style-type: none"><li>- Numerical and graphical display of data (including total field)</li><li>- Range and units selection</li><li>- Hold and Maximum</li><li>- Record to file and recall file</li></ul>
Record file format:	ASCII tab delimited; compatible with Handheld file format

### Handheld kit

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Contents:	Contents of the desktop kit, plus: <ul style="list-style-type: none"><li>- Industrial-quality PDA</li><li>- Heavy duty Li-Ion battery (2600 mAh), plus spare (1200 mAh)</li><li>- AC adaptor/charger (100-240 VAC 50/60 Hz, 500 mA) with wall socket adaptor plugs for Europe, UK, USA, Australia</li><li>- USB-Host adaptor cable to connect PDA to THM1176</li><li>- USB-Device adaptor cable to connect PDA to PC</li><li>- Pre-installed acquisition software, with licenses from Metrolab, including free updates, and from National Instruments</li><li>- CD with acquisition software for PC (Windows XP/Vista) and PDA (Windows Mobile), LabVIEW source code for all PC and PDA software, and user's manual</li><li>- Carrying Case</li></ul>
PDA type:	Windows Mobile® 5.0 with USB host interface
PDA size:	127 x 75 x 21 mm <sup>3</sup>
PDA weight:	230 g with 2600 mAh battery, stylus and USB adaptor cable

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## THREE-AXIS HALL MAGNETOMETER THM1176 – TECHNICAL SPECIFICATIONS

### Handheld kit (continued)

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Display:	64K colour TFT LCD, 3.5", 240 x 320 pixels
Input Device:	Stylus or fingertip
Connectors:	<ul style="list-style-type: none"><li>- Power jack</li><li>- 2.5mm audio headset jack</li><li>- 26 pin connector for ActiveSync, USB 1.1 host and USB 2.0 client</li><li>- CompactFlash and SDIO expansion slots</li></ul>
Audio:	Built-in microphone and speaker
Memory:	128 MB SDRAM, 256 MB NAND Flash
Wireless LAN:	IEEE 802.11 b/g; internal antenna
Bluetooth:	V2.0 + EDR class 1
Battery life:	6 hours min.
Record file format:	ASCII tab delimited; compatible with Desktop file format
Pre-loaded software:	<ul style="list-style-type: none"><li>- Acquisition software (same functionality as desktop software)</li><li>- Word Mobile, Excel Mobile, PowerPoint Mobile</li><li>- Outlook Mobile, IE Mobile, MSN Messenger Client</li><li>- Windows Media Player 10.2 Mobile</li><li>- ActiveSync Client</li><li>- Socket Mobile Wi-Fi Companion</li><li>- Programmable Home Screen, Calculator, Utility programs</li></ul>
PDA operating temperature:	0° to 50°C
PDA operating magnetic field:	1 T max. The PDA may experience forces as high as 50 N. Note: The touch screen of the PDA will cease to function. The power of the PDA must be cycled to restore full operation.

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## THREE-AXIS HALL MAGNETOMETER THM1176 – TECHNICAL SPECIFICATIONS

### Warranty, Calibration, Certification and Maintenance

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Warranty	2 years
Recommended calibration interval:	18 months (3-Axis Hall Probe only)
Certification	CE approved
Maintenance	Firmware upgradable by end user

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