

**Group3**

# DTM-133

**Digital Teslameter**

**RS-232 or GPIB Communication**



*Serial RS232C*



*GPIB*

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## Product Description

- Temperature coefficient is -100 ppm / ° C max when used with LPT-130, or -140 ppm / ° C when used with MPT-132 probe.
- Accuracy and temperature specifications include performance of probe.
- The probe's characterisation information is stored in the probe assembly itself so any Group3 probe can be used with any Group3 DTM. However, for probes without temperature compensation such as MPT-132 and LPT-130, the DTM-133 is the most appropriate teslameter to use.
- Two buttons on the front panel are used to select the operation of the teslameter. The following modes can be selected for the display - magnetic field, peak hold of magnetic field, AC component of field.
- Digital filtering (time averaging) can be enabled to suppress short term fluctuations.
- Several teslameters with the serial communications option (up to 31) can be formed into a local communications loop, all of them talked to by the one serial port on the control computer. The system can be operated in a trigger mode, where the timing of the measurements by several teslameters can be synchronised
- Internal switches select serial data format, baud rate, device address, string terminators, filtering, gauss or tesla units, data format, service request action, EOI action, and reset system to defaults.
- An analog output is available. This is a buffered version of the raw probe signal, and is not corrected for linearity or temperature. It offers an instantaneous field value, (0 to 9kHz)
- Panel mount versions are available, and panels with correct cut-outs and mounting hardware.
- The operating temperature range of the probe and instrument is 0 to 50 ° C

### DTM-133 performance with listed probe

DTM-133 performance with listed probe	Active area (mm)	Resolution of display	Max field	Finest resolution	Accuracy at 25° C	Tempco ppm /°C	zero drift $\mu T/°C$
LPT-130	4 x 1.6	1 in 120,000	3T	50 $\mu T$	± 0.03%	±80	±12
LPT-230	4 x 1.6	1 in 12,000	0.3T	5 $\mu T$	± 0.03%	±620	±8
MPT-132	1 x 0.5	1 in 120,000	3T	50 $\mu T$	± 0.03%	±140	±40
MPT-230	1 x 0.5	1 in 12,000	0.3T	5 $\mu T$	± 0.03%	±620	±8

### Resolution using probe MPT-132/LPT130 with Filter ON

Range	Display resolution		Serial / GPIB Output Resolution	
	Gauss	Tesla	Gauss	Tesla
0.3	0.5	0.00005	0.01	0.000001
0.6	1	0.0001	0.02	0.000002
1.2	2	0.0002	0.04	0.000004
3.0	5	0.0005	0.1	0.00001

### Resolution using probe MPT230/LPT-230 with Filter ON

Range	Display resolution		Serial / GPIB Output Resolution	
	Gauss	Tesla	Gauss	Tesla
0.03	0.05	0.000005	0.001	0.0000001
0.06	0.1	0.00001	0.002	0.0000002
0.12	0.2	0.00002	0.004	0.0000004
0.3	0.5	0.00005	0.01	0.000001

## Specifications

- 0.03% of reading ± 0.03% of range at 25° C when used with an LPT-130 or MPT-132 probe

### Temperature Stability with LPT-130 probe

- calibration: -100 ppm of reading / ° C max.
- Effect of probe cable: Add -3ppm / ° C for each metre of probe cable.
- Zero drift: ± (8 $\mu T$  + 0.0015% of full scale) / ° C max.

### Temperature Stability with MPT-132 probe

- calibration: -100 ppm of reading / ° C typical.  
-140 ppm of reading / ° C max.
- effect of probe cable: add -3ppm / ° C for each metre of probe cable
- zero drift: ± (15 $\mu T$  + 0.0010% of full scale) / ° C typical.  
± (40 $\mu T$  + 0.0015% of full scale) / ° C max.

## Features

- Display in Gauss or Tesla
- Filter, Zero and Hold Function
- Maximum Field Reading up to 3 Tesla (LPT-130, MPT-132)
- 4-range operation, Auto ranging
- Time stability of ± 0.1% max. over 1 year
- Interface via RS232 or IEEE488/GPIB
- Optical Fibre output for high voltage environment application
- Analog Output gives instantaneous field value (0 to 9kHz), not corrected for probe linearity
- DC, or in AC mode 8 to 3,000 Hz
- 30 fully corrected measurements per second
- 10 display updates per second
- 7-digit, red LED display. 8 additional indicators for range, units, peak hold and filter
- All metal enclosure, with tilt stand on bench models, bezel mount on 19" standard rack models
- Dimension 217 x 125 x 50mm
- Weight 1.2 kg

## Applicable Hall Effect Probes

### Standard Sensitivity 0.3, 0.6, 1.2, 3.0 Tesla



MPT-132



LPT-130

### High Sensitivity 0.03, 0.06, 0.12, 0.3 Tesla



MPT-230



LPT-230

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