

TM6140B Precision Magnetometer



1 Summary

TM6140B is a high-precision, multi-functional magnetic field measuring instrument, equipped with a high sensitivity, low drift Hall sensor and advanced digital signal processing technology. The instrument is applied for measuring the magnetic field density of DC (constant) or AC magnetic field. It can be used as a magnetic field measurement standard to calibrate DC magnetometers.

2. Features

- Measuring Range: 0 ~ 3000 mT.
- Accuracy Class: 0.05.
- Switch between DC or AC Mode.
- Support Frequency Display.
- 7-digits Display with a Minimum Resolution of 1 nT.
- Unit Switch: G, mT, Oe, A/m.
- +/- Polarity Display.
- Relative Measurement Mode.
- Support Offset Value Input.
- Data statistics, Stability Analysis.
- Alarm of Exceeding the Upper / Lower Limit.
- Probe Temperature Compensation.
- Set Magnetic Field Integration Period.
- Radial and Axial Hall Probes are optional.

- RS 232 Output Digital Signal.
- Optional Magnetic Shielded Cavity for Zero Drift Calibration.
- Large Size LCD Touch Screen.

3. Specifications

Range	Resolution	Accuracy		Zero Drift ± μT / h	Temperature Coefficient ± ppm /k
		±(ppm of reading + μ T) ^①			
		DC	AC (effective value)		
3 mT	1 nT	0.1% + 100	1% + 100	15	50
30 mT	10 nT	0.05% + 100	1% + 100	20	50
300 mT	100 nT	0.05% + 100	1% + 200	50	50
3000 mT	1 μT	0.05% + 150	1% + 300	75	50

Remarks: ① (ppm = parts per million) (e.g., 10ppm = 0.001%)

② The above uncertainty is the index of the measurement period ≥ 1 s ; if the measurement period is set to < 1 s, the uncertainty will be doubled, for example, the DC uncertainty of the 300 mT range becomes 0.1%*RD + 200μT .

- Measuring range: 0 ~ 3000 mT, AC frequency range: 1 Hz ~ 400 Hz
- Display digits: DC: 7-digits, AC: 5-digits

4. General Specifications

Power Supply	AC (220 ± 22) V , (50 ± 2) Hz
Temperature Performance	Operating temperature: (23 ± 5) °C; Storage temperature: -20°C ~ 70°C
Humidity Performance	Operating humidity: 40% ~ 80 % R·H, non-condensing Storage humidity: < 80% RH, non-condensing
Weight	About 5 kg
Interface	Hall probe input interface, RS232 interface
Dimensions	190 mm (W) × 300 mm (D) × 200 mm (H)