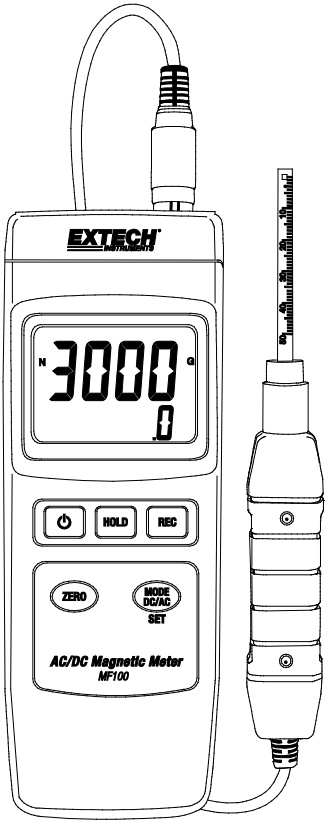
EXTECH

USER MANUAL

AC/DC Magnetic Meter

Model MF100



Introduction

Thank you for selecting the Extech MF100 Magnetic Meter. This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit our website (www.extech.com) to check for the latest version of this user manual and customer support.

Features

- High Accuracy DC and AC magnetic field measurements
- North and South pole indication
- Easy-to-read display
- Data Hold and MIN-MAX recording
- Automatic temperature compensation
- Zero button for DC, AC magnetic function
- Separate probe for remote measurements
- Advanced functionality with programmable user settings
- Ideal for a variety of laboratory and field uses
- Heavy duty, compact housing with hard-shell carrying case
- Auto power OFF (APO) conserves battery energy

Meter Power

The meter is powered by one 9 V battery (rear compartment) or by using the supplied power adaptor. Refer to the Battery Replacement section for replacement instructions.

Safety

International Safety Symbols


This symbol indicates the user must refer to the manual for further information.


Double insulation

Safety Notes

- Remove the battery if the device is to be stored for longer than 60 days.
- Never dispose of batteries in a fire. Batteries may explode or leak.

Cautions

- Read and understand this user manual before operating the meter.
- If you use the equipment in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Description

Meter Description

1. Probe connection
2. Display (LCD)
3. HOLD button
4. POWER button
5. REC button
6. ZERO button
7. MODE DC/AC/SET button
8. Tilt-stand and battery compartment on rear
9. Reset button
10. Power adaptor jack

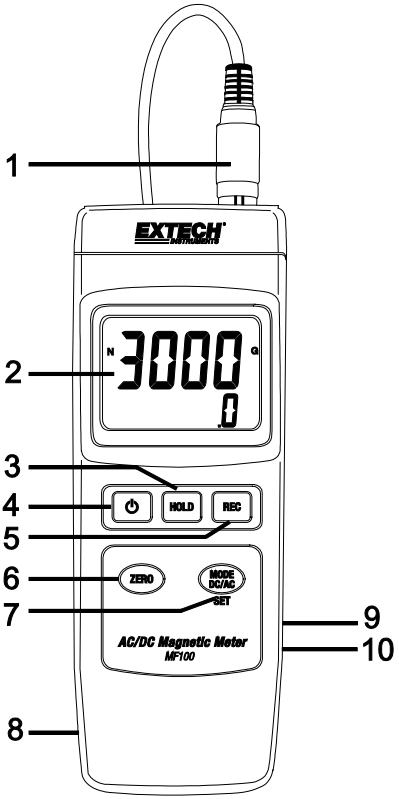


Fig. 1 – Meter description

Probe Description

1. Probe sensing head
2. Probe handle
3. Probe cable
4. Probe cover

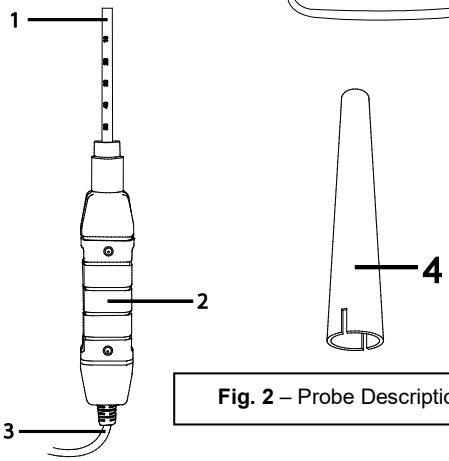


Fig. 2 – Probe Description

Display Description

1. North **N** or South **S** indication
2. Unit of measure
   (**G** for Gause or **mT** for milliTesla)
3. AC or DC field and resolution information
4. Magnetic reading

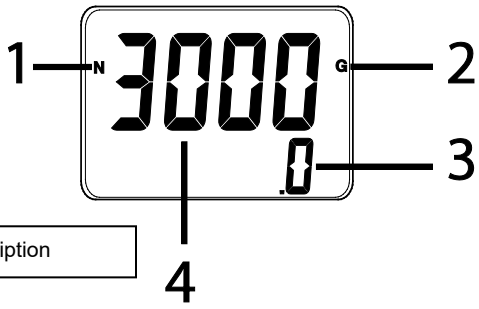


Fig. 3 – Display description

Button Descriptions

1. POWER button: Short press to power the meter ON or OFF.
2. HOLD button: Short press to freeze reading (**HOLD** will appear); press again to exit.
3. REC button: Short press to start recording MAX and MIN readings. Short press to step through saved MAX and MIN readings. Long press to exit.
4. MODE, DC/AC/SET button: Short press to switch between AC and DC and to select the resolution. Long press to access the Settings menu.
5. ZERO button: Short press to zero (reset) the display before taking a reading.

Reset button (right side compartment; not pictured below): If the meter is unresponsive, press to reset to factory default settings.

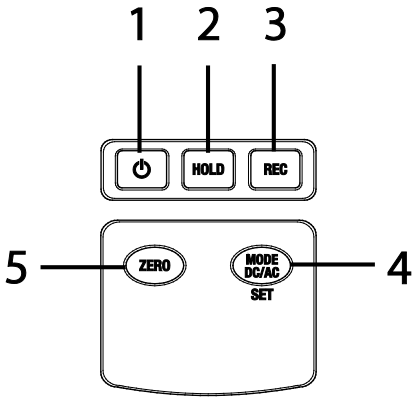


Fig. 4 – Button descriptions

Operation

AC/DC Magnetic Field Measurement

Press the power button to switch the meter ON. Use the **MODE** button to step through the screens in sequence, as shown below:

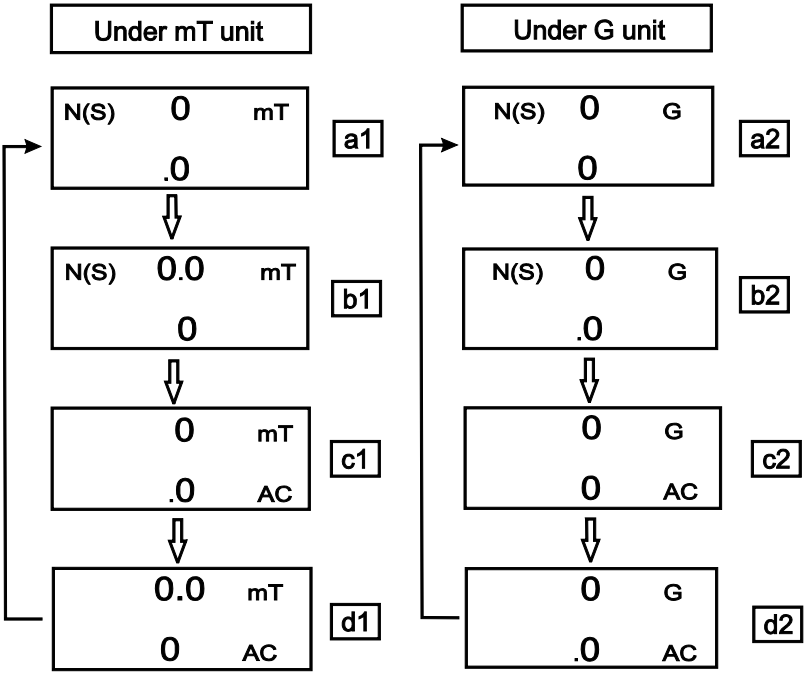


Fig. 5 – Programming screens

Each screen represents the resolution for the respective unit of measure:

a1 screen for 0.1 mT DC resolution measurements

b1 screen for 0.01 mT DC resolution measurements

c1 screen for 0.1 mT AC resolution measurements

d1 screen for 0.01 mT AC resolution measurements

a2 screen for 1 G DC resolution measurements

b2 screen for 0.1 G DC resolution measurements

c2 screen for 1 G AC resolution measurements

d2 screen for 0.1 G AC resolution measurements

For DC magnetic field measurements, the display will show either the **N** (north) or **S** (south) indicator. For AC magnetic field measurements, the display will show the **AC** indicator (the **N** or **S** indicators will not be shown).

Press the probe head to the testing material (see Fig 6). The display will show the magnetic field value along with the unit of measure (mT = MilliTesla or G=Gauss) and AC, if an AC field.

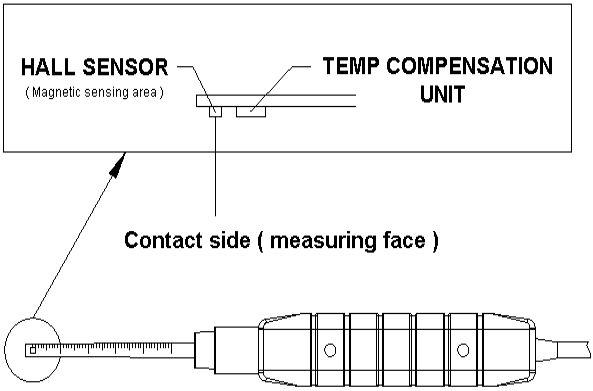


Fig. 6 – Touching probe to test material

Note: When the meter is ON, the display may show a non-zero value (because of environmental interference). Before taking a measurement press the **ZERO** button to reset the display.

Data Hold

During measurements, press the **HOLD** button to freeze a reading (**HOLD** will be shown). Press the **HOLD** button to exit.

Maximum and Minimum Recording

Press the **REC** button to start recording (**REC** will appear). Press the **REC** button again to view the maximum reading (**REC MAX** will be shown). Press the **REC** button again to view the minimum value (**REC MIN** will be shown). Long press the **REC** button to exit.

Note: When making DC magnetic field measurements, while the **RECORD** function is active, the user cannot toggle between north and south poles.

User Settings

Long press the **SET** button to enter the settings mode. Press the **SET** button to cycle through the three settings, listed below. After approx. 8 seconds, the meter will automatically exit the settings mode.

(POFF) Auto Power OFF (APO) Enable/Disable

- In the settings mode, with **POFF** displayed, press the **REC** button.
- Use the **ZERO** and **MODE** buttons to select **YES** or **NO**.
- Selecting **YES** enables APO
- Selecting **NO** disables APO
- Press the **REC** button to confirm the setting

(UNiT) Selecting Units of Magnetic Field

- In the settings mode, with **UNIT** displayed, press the **REC** button
- Use the **ZERO** and **MODE** buttons to select **mT** or **G**
- Select **mT** for milliTesla units
- Select **G** for Gauss units
- Press **REC** to confirm the setting

(CLr) Factory-only function

In the settings mode, with **CLr** displayed, please press **REC** to skip this factory-only function.

Factory Default Reset

If the meter becomes unresponsive, press the **RESET** button (right-side compartment), with the meter ON. The meter will reset to its factory default condition, clearing the user settings.

Battery Replacement

When the low battery icon appears, replace the 9 V battery. Several hours of accurate readings are still possible after the icon appears.

1. Remove the Phillips screw that secures the rear battery compartment.
2. Remove and safely set the compartment cover and screw aside.
3. Replace the 9 V battery observing correct polarity.
4. Replace the battery compartment cover with the Phillips screw.

Do not dispose of used batteries or rechargeable batteries in household waste. Do not dispose of this instrument in household waste. Please recycle batteries and meter responsibly.

Specifications

Display type and size	LCD; 2.0 x 1.5 in. (52 x 38 mm)			
Measurement units	mT		MilliTesla	Resolution
	G		Gauss	
Measurement range (DC)	mT	Range 1	300.00 mT	0.01 mT
		Range 2	3,000.0 mT	0.1 mT
	G	Range 1	3,000.0 G	0.1 G
		Range 2	30,000 G	1 G
Measurement range (AC)	mT	Range 1	150.00 mT	0.01 mT
		Range 2	1,500.0 mT	0.1 mT
	G	Range 1	1,500.0 G	0.1 G
		Range 2	15,000 G	1 G
Accuracy @ 73°F ± 9°F	DC		± (5% rdg. + 10 dgt.)	
	AC		± (5% rdg. + 20 dgt.)	
Frequency response	AC measurement: 50 / 60 Hz			
Sensor	Hall Effect Sensor with automatic temperature compensation			
Field direction	Uni-axial			
Display sampling time	Approx. 1 second			
Operating temperature	32 to 122°F (0 to 50°C)			
Operating humidity	< 85% R.H.			
Power supply	9 V battery or supplied power adaptor			
Power consumption	Approximately 15 mA DC			
Weight	9.7 oz. (275 g); meter and probe			
Dimensions	Meter: 7.8 x 2.67 x 1.18 in. (198 x 68 x 30 mm)			
	Probe: 7.68 x 0.98 x 0.75 in. (195 x 25 x 19 mm)			

Two-year Warranty

Teledyne FLIR warrants this Extech brand instrument *to be free of defects in parts and workmanship for* ***two years*** *from date of shipment. To view the full warranty text please visit:*
https://www.flir.com/support-center/warranty/instruments/extech-product-warranty/

Calibration and Repair Services

Teledyne FLIR offers calibration and repair services *for the Extech brand products we sell. We offer NIST traceable calibration for most of our products.*

Customer Support

Local Telephone Support List: *https://support.flir.com/contact*

Return Material Authorization (RMA): *https://customer.flir.com/Home*

Customer Service: *https://support.flir.com/ContactService*

Technical Support: *https://support.flir.com*

www.extech.com

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