REED

Model GU-3001

Milligauss Meter

Instruction Manual

MILLI-GAUSS METER
RANGE : -3000 mG ~ 3000mG
GU-3001

reedinstruments

Table of Contents

Features

- Measures DC and AC magnetic field measurement
- Wide measure range: ± 3,000 milligauss
- The meter can detect magnetic fields as small as 0.1 milligauss
- N pole/S pole indicator
- High precision magnetometer, even can measure the absolute environment Earth's magnetic field as reference
- Zero adjustment button for relative measurement
- Heavy duty & compact housing with hard carrying case, designed for easy carry out & operation
- Easy to read LCD with backlight
- Auto power off or manual power off
- Data hold, record max. and min. reading
- High accuracy microcomputer circuit
- Power by UM3/AA (1.5 V) x 6 batteries
- USB/RS232 Computer interface
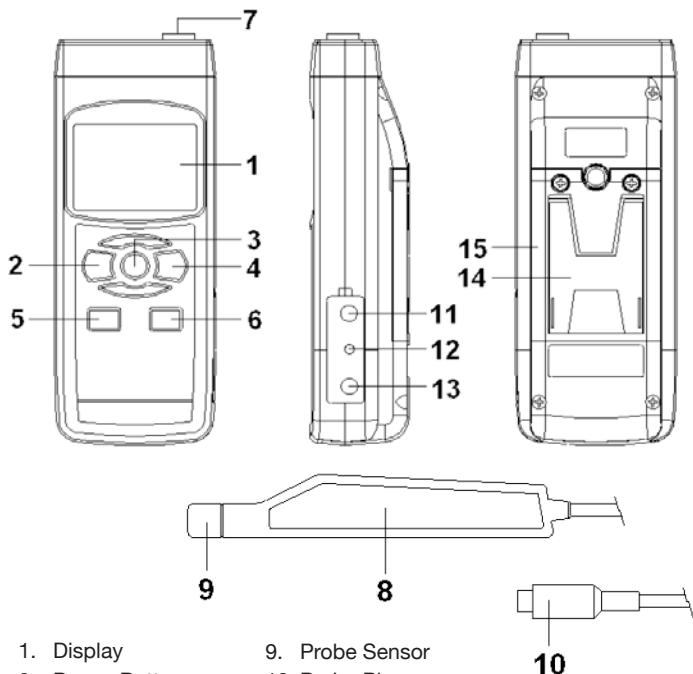- Separated probe for easy measurements of multiple environments

For service on this or any other REED product or information on other REED products, contact REED Instruments at info@reedinstruments.com

Specifications

Circuit:	Custom microprocessor LSI circuit
Display:	52mm x 38mm LCD
Measurement Units:	mG & uT
Range:	-3000mG - 3000mG, -300uT - 300uT
Resolution:	0.1mG: -199.9 - 199.9mG
	1mG: ≥200 or ≤ -200mG
	00.1uT: -19.9 - 19.9uT
	0.1uT: ≥20 or ≤ -20uT
Accuracy:	±(2% + 2mG)
Frequency Response:	AC/DC: 40 Hz to 10 KHz
Field Direction:	Uniaxail
Sampling Time:	Approx. 1 second
Data Output:	RS 232/USB PC computer interface
Operating Temperature:	0-50°C (0-122°F)
Operating Humidity:	Less than 85% R.H.
Power Supply:	UM3/AA (1.5 V) x 6 batteries
Weight:	Meter: 350g/0.lb; Probe: 78g/0.17lb
Dimensions:	Meter: 173 x 68 x 42mm;
	Probe: 177 x 29 x 17mm
Includes:	Probe and hard carrying case
Optional accessories:	USB cable (USB-01)
	RS232 cable (UPCB-01)
	Data Acquisition Software (SW-U801-WIN)

Visit us at www.reedinstruments.com for more information on our optional accessories, or e-mail us at info@reedinstruments.com

Instrument Description

1. Display
2. Power Button
3. Hold Button
4. REC Button
5. Unit/Zero Button
6. AC/DC Button
7. Input Socket
8. Probe Handle
9. Probe Sensor
10. Probe Plug
11. USB/RS232 Output
12. Reset Button
13. AC/DC 9V Power Adapter Input Socket
14. Stand
15. Battery Compartment/Cover

Operating Instructions

While in DC measuring mode, North Poles (positive fields) will be represented on the screen with an "N". South Poles (negative fields) will be represented on the screen with an "S" and a negative sign. While in AC measuring mode, the screen will display "AC".

The Magnetic Probe senses either a magnetic push or pull. The sensing area is the flat tip of the sensor.

When the measurement value is over ±3500mG, the display will show "----" (≥ 3500mG) or "----" (≤ -3500mG).

When you first turn the meter on, the display will not show a zero value due to the present natural magnetic field. Be sure to follow the Zero Adjustment procedures described in the DC Magnetic Field procedures.

DC Magnetic Field Measurement

As the device has extremely high sensitivity, the LCD display will vary greatly even a slight movement the probe. It is recommended to firmly fix the probe before measurement.

1) Turn on the meter by pressing the Power Button. To turn the meter, hold the Power Button for over 2 seconds.

2) Press the Unit Button to select the unit (mG, uT).

3) Zero Adjust:
Press and hold the Zero Button until the screen displays a zero value and an "O" symbol. To measure the environment magnetic value, press and hold the Zero Button again and the "O" symbol will disappear and the meter will return to showing the Environment's magnetic field value.

4) Hold the Probe Sensor on or close to the testing material. The Display will show the magnetic field value along with the unit (mG, uT).

AC Magnetic Field Measurement

Press the AC/DC Button to switch to AC the Measuring Mode. The display will show a "AC" symbol, indicating the meter is now in AC Magnetic Field Mode.

Data Hold

While taking a measurement, press the Hold Button once and the measured value will hold on the screen, and a HOLD symbol will appear. Press the Hold Button once again will release the data hold function.

Data Record (Max., Min. reading)

The data record function records the maximum and minimum readings. Press the REC Button once to start the Data Record function and a "REC" symbol will appear on the display. With the "REC" symbol on the display:

1) Press the REC Button once, and a "REC. MAX." symbol along with the maximum value will appear on the display. To delete the maximum value, press the Hold Button once and the display will show a "REC." symbol only and execute the memory function continuously.

2) Press the REC Button again, and a "REC. MIN." symbol along with the minimum value will appear on the display. To delete the minimum value, press the Hold Button once, and the display will show a "REC." symbol only and execute the memory function continuously.

3) To exit the memory record function, press the REC button for 2 seconds. The display will revert to the current reading.

Note: The max and min values present the value of the absolute measurement value (ignore the negative mark). For example, if the measurement values are: -19.03uT, -19.02uT, -17.31uT, then the Max value is -19.03uT, the negative label is just present to show the direction of the South Pole only.

Auto Power OFF Management

The power management is defaulted to Manual Power off, however the meter can default to Auto Power off.

1) Press and hold the AC/DC Button until the Display shows "P OFF".
2) Press the Unit Button and the AC/DC Button together to select "0" for Manual Power off or "1" for Auto Power off. Press the REC Button to save the setting, or press the Hold Button to exit without saving.

System Reset

If an error occurs, press the Reset Button with a Pin. If the Reset Button does not fix the error, please send in the unit to our Calibration Lab for repair. E-mail info@reedinstruments.com for more information.

Battery Replacement

1) When the left corner of LCD display shows ⊠, it is necessary to replace the battery
2) Loosen the screws of the Battery Cover and remove
3) Remove the batteries and replace with Six DC 1.5 V batteries (UM3, AA, Alkaline/heavy duty)
4) Make sure the battery cover is properly secured after changing the battery

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PC Serial Interface

The instrument features an PC output via 3.5 mm terminal. The connector output is a 16 digit data stream which can be utilized to the user's specific application. An USB RS232 lead with the following connection will be required to link the instrument with the PC serial input.

Meter (3.5mm Jack Plug)	PC (9W "D" Connector)
Center Pin	Pin 2
Ground/Shield	Pin 5

The 16 digit data stream will be displayed in the following format:
D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0

D0	End Word
D1 to D4	Upper Display reading, D1= LSD, D4= MSB
D5 to D8	D5=? D6=? D7=? D8=?
D9	Decimal Point (DP) for display 0 = No DP, 1 = 1 DP, 2 = 2 DP, 3 = 3 DP
D10	D10 = 0
D11	D11 = 0
D12	D12 = 0
D13	D13 = 0
D14	D14 = 0
D15	Start Word

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