

# TENMARS

Magnetic Field Meter

TM-191



HB2TM1910003



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## 1 Introduction

Safety precautions should be taken against electric appliances in places including medical institutions, schools and residential districts, where people usually stay for a long time, to prevent patients, babies and senior citizens from exposure to high electromagnetic waves. An electromagnetic wave simply means the wave motion of the electromagnetic field (**EMF**).

The change in electric fields produces magnetic fields, and the change in magnetic fields can also generate electric fields. The fluctuation of correlation between each other is known as "electromagnetic waves", which is a form of energy similar to light and heat that can be transmitted either by radiation in the air or by an electric conductor.

It is suggested that rearrangements should be made in families and work locations where electromagnetic fields are detected the strongest in order to avoid prolonged exposure to excessive electromagnetic fields.

## 2 Application

- This meter is applied to measuring electromagnetic fields of extremely low frequency (**ELF**) of 30 to 300Hz.
- It is capable of measuring the electromagnetic field radiation intensity that is produced from electric transmission equipment, power line, microwave oven, air conditioner, refrigerator, computer monitor, video/audio device and so forth.
- The magnetic field unit is Tesla (T), Gauss (G), mini-Gauss (mG) or micro-Tesla ( $\mu$  T).
  - 1 T = 10,000 G
  - 1 G = 1,000 mG
  - 1  $\mu$  T = 10 mG

## 3 Features

- Switch between the display of micro-Tesla and mini-Gauss is available.
- Data hold (HOLD) 、maximum (MAX) Hold function.
- Range display(20,200,2000).
- Low battery detector “”.
- Over load display “OL”.

## 4 Identifying Parts



1. Sensor position.
2. LCD
3. Power on/off.
4. maximum hold button
5. Data hold button
6. mG unit select button
7.  $\mu\text{T}$  unit select button
8. Range select button
9. Battery cover.

## 5 Measurement Procedures

- Press  to power on.
-  Select for  $\mu\text{T}$  unit or  for mG unit.
- Position the front (refer to Figure 1) of the meter to measure the electromagnetic waves. Try to change the measurement angle or position for obtaining the highest reading value (please refer to Figure 2 to 6).
- Read the measured value. The display of “OL” on the left highest position indicates there is an overload on the reading. Please press  to select a higher range for measurement again.

- Due to the environmental magnetic field factors, this magnetic field meter could display a reading value that is lower than 0.5mG prior to measuring. This is not a malfunction of the device.
- To permanently lock and keep the reading displayed on the LCD, press  or press  again to unlock.
- To retain the maximum value, press  and the reading value displayed on the LCD will keep updating to the maximum value.



Figure 1



Figure 2

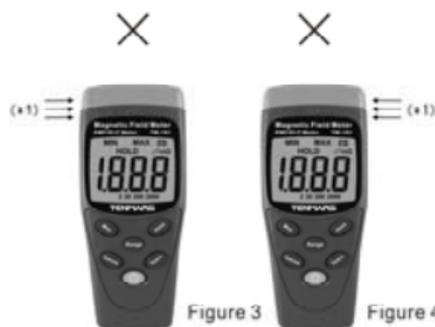


Figure 3



Figure 4



Figure 5



Figure 6

(\*1) Arrow pointing direction indicates the direction of the electromagnetic

- Figure 1 indicate the correct measurement direction of the electromagnetic wave.
- Figure 2,3, 4, 5 and 6 indicate the incorrect measurement direction of the electromagnetic wave.

## 6 Specifications

- **Display:** 3-1/2 digits LCD, maximum reading 1999.
- **Range:** 200/2000 mG,20/200 $\mu$ T.
- **Resolution:** 0.1/1 mG or 0.01/0.1  $\mu$ T.
- **Frequency response:** 30Hz to 300Hz.
- **Sensor:** Single Axis
- **Accuracy:**  $\pm(2.5\%\pm 6\text{dgt})$  at 50Hz/60Hz.
- **Over load:** LCD display "OL".
- **Sample rate:** 2.5 times per second.
- **Battery:** 9V NEDA 1604, IEC 6F22 or JIS 006P.
- **Battery life:** Approximate 100 hours.
- **Operating temperature & humidity:** 5°C to 40°C, below 80% RH.
- **Storage temperature & humidity:** -10°C to 60°C, below 70%.
- **Weight:** About 170g.
- **Dimensions:** 130(L)\*56(W)\*38(H)mm.
- **Accessories:** User's manual, 9V battery, Carrying case.

## 7 Battery replacement



### **WARNING**

If the symbol “  ” appears on the LCD, please replace the battery immediately

- Turn off the instrument.
- Remove the battery cover
- Replace the battery.
- Install the battery cover.

## 8 Safety Precaution

- For cleaning the instrument use a soft dry cloth. Never use a wet cloth, solvents or water, etc..
- Operation Altitude: Up to 2000M.
- Operating Environment: Indoors use. This instrument has been designed for being used in an environment of pollution degree 2.

## 9 End of life



Caution: this symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal



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