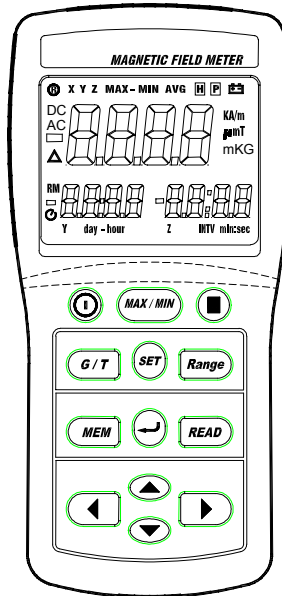


ISO-TECH ELF MAGNETIC FIELD METER
Datalogger & RS-232 PC Interface

EMF-1394

459-7744

INSTRUCTION MANUAL



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1. FEATURES

- ◆ The ISO-TECH EMF-1394 uses 3 internal orthogonal sensors to test a wide range of ELF magnetic fields, independent of measurement angle.
- ◆ The tester is designed to provide the user with a fast, reliable and simple way of measuring magnetic field radiation levels around power lines, home appliances and industrial devices.
- ◆ The tester is a cost-effective hand-held instrument, designed and calibrated to measure magnetic field radiation at different bandwidths from 30Hz to 2000Hz.
- ◆ Simultaneously displays micro-Tesla & milli-Gauss readings
- ◆ Data hold / Maximum and Minimum hold / Data memory and Read functions.
- ◆ Fully CE compliant.
- ◆ RS-232 PC interface.

2. APPLICATIONS

- ◆ The tester is specifically designed to determine the extent of magnetic radiation generated, for example by power lines, computing equipment, TV sets, video machinery and many other similar devices.

3. CAUTION OF ELECTROMAGNETIC FIELD EXPOSURE

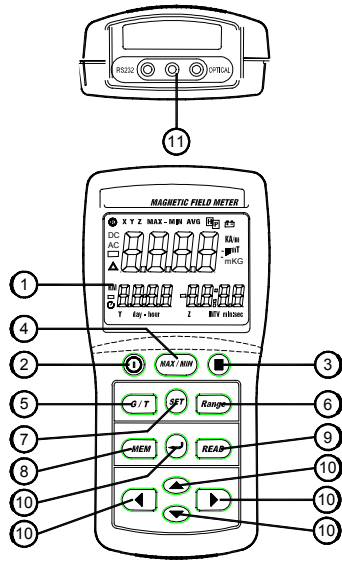
Many scientists claim that long term exposure to electromagnetic field radiation may be the cause of childhood leukemia & other forms of cancer. Complete answers to any of these and related questions are not currently available. At the present time, the most common practice is to avoid excess exposure over long periods of time.

“Prudent Avoidance” as stated by the Environmental Protection Agency (EPA) USA is recommended.

4. SPECIFICATIONS

Display:	Triple LCD display.
Range:	20/200/2000 milli-Gauss 2/20/200 micro-Tesla
Resolution:	0.01/0.1/1 milli-Gauss 0.001/0.01/0.1 micro-Tesla
Number of Axis:	Triple axis (X, Y, Z)
Band Width:	30Hz to 2000Hz
Accuracy:	20mG / 2 μ T \pm (3%+3d), \pm (3%+3d) at 50Hz or 60HZ \pm (5%+3d) at 40Hz to 200HZ -3dB at 30Hz to 2000HZ
Over-Input:	Display shows "OL".
Sampling Time:	Approx. 0.5 second
Memory Capacity:	999 data sets (manual and continuous recorder).
Battery:	6 x 1.5V AAA batteries
Battery Life:	Approx. 100 hours.
Operating Temp and Humidity :	0°C to 50°C (32°F to 122°F) below 80%RH
Storage Temp and Humidity :	-10°C to 60°C below 70%RH
Weight:	Approx. 165g
Dimensions:	154(L) x 72 (W) x 35(H) mm
Accessories Included:	Operation manual, batteries, RS-232 cable and software.

5. METER DIAGRAM



- ① Triple LCD display.
- ② a. Power control button: ①. Press ① to turn the meter on, press ① again to turn off.
- b. Memory clear: Press ① to turn off the meter. Press and hold down the MEM button, then press ① once to turn on again, until the display shows CLr. Then release the MEM key and all data in the memory will be cleared.
- c. In time setting mode, pressing the ① button will not turn off the meter. In this condition, press ↵ to exit time setting mode then press ① to turn off the meter.

- ③ Data hold control key [H].
- ④ Maximum and Minimum reading record control key (MAX/MIN):
Press the SET button to set display to show the tri-axial total magnetic field and day-hour, min:sec reading mode. Press the Range button to select the desired measurement range then press the MAX/MIN key to step through the maximum and minimum readings. Press and hold down MAX/MIN for 2 seconds to exit MAX/MIN mode.
- ⑤ Magnetic field units select key (G/T) :
Press the G/T button to select milli-Gauss (mG) or Micro-Tesla (μ T) units.
- ⑥ Measurement range select key (Range):
Press the Range button to enter manual range select mode. LCD will show the $\text{\textcircled{R}}$ mark. Press the Range button again to cycle through desired ranges. Press and hold down the Range button for 2 seconds to exit and return to autorange mode.
- ⑦ Setting key (SET):
 - a. Press the SET button to step through the tri-axial total magnetic field reading and independent three single-axis magnetic field readings.
 - b. Press and hold down SET until 2 beeps are heard and then release to enter data logging interval time setting mode. Press \blacktriangle and \blacktriangledown buttons to set the desired logging interval time (1 to 255 seconds). Press the \blacktriangleleft or \blacktriangleright buttons to enter the date and time setting mode, then press \blacktriangle \blacktriangledown \blacktriangleleft or \blacktriangleright key until the display shows the correct time. Press \blacktriangledown to store the time in memory.
- ⑧ Data memory control key (MEM):
 - a. Single data memory: Press the MEM button each time to store the display reading and memory location in memory.
 - b. Continuous data memory: Setting the logging interval. (See ⑦ b). Press and hold down the MEM button until 2 beeps are heard and then release MEM to enter this mode. A flashing "M" on the display indicates the data storage to memory. Press \blacktriangledown to stop logging.

- ⑨ Viewing logged readings (READ):
 - a. Press the READ button to view logged data. Press ▲ or ▼ buttons to scroll through the readings. Press ⏏ to exit this mode.
 - b. Press and hold down the READ button until 2 beeps are heard and then release to view logged readings. A flashing "R" on the display indicates memory recall with location number. Press ⏏ to exit this mode.
- ⑩ Scroll buttons (▲ ▼ ◀ ▶) and enter (⏏) control button :
 - ▲ : Press to increase the display setting.
 - ▼ : Press to decrease the display setting.
 - ◀ : Press to move the display setting left.
 - ▶ : Press to move the display setting right.
 - ⏏ : Press to store the time settings in memory and exit setting mode. In continuity data memory and read mode, press ⏏ key to exit.
- ⑪ RS-232 PC interface connector.

6. MEASURING PROCEDURE

- 1). Press the **⏏** button to turn on the meter.
- 2). Press the G/T key to select desired measuring magnetic field units.
- 3). Press the Range key to select desired measuring ranges.
- 4). Due to the magnetic interference of the environment, the display reading may show the reading before testing, for example the reading would lower than 0.5m Gauss. This is not a malfunction of the tester.
- 5). Whilst holding the tester, move slowly towards to the object under measurement.
 - ※ Notice how the field intensity increases as you move closer to the object.
- 6). If the power of the object was turned off during the measurement, the tester reading should return to zero, unless there is electromagnetic emissions from other sources.

7. DATALOGGING (METER)


- 1). To clear Datalogger memory:
Press the **ⓘ** button to turn off the meter. Press and hold down the (MEM) button, then press **ⓘ** to turn on the meter, until the display shows CLr. Release the MEM button.
- 2). Press the MEM button to store logged display readings and memory location in memory.
- 3). Continuity data logging:
 - a. Set the logging interval. Press and hold down the SET button for 2 seconds, then press the **▲** and **▼** buttons until the display shows the desired logging interval (1-255 seconds). Press **↵** button to select.
 - b. Press and hold down the MEM button for 2 seconds to start logging.
 - c. Press the **↵** button to stop logging.
 - d. When the memory is full, a single beep per second will be heard. Press the **↵** button to stop logging.

8. RECOMMENDATION

It is recommended that EMF emission levels are regularly monitored.

As "hot spots" are detected by the tester, re-arrangement of the living and working areas is highly recommended. Always try to avoid long term exposure to strong electromagnetic field emissions.

9. BATTERY REPLACEMENT

- 1). When the left corner of the LCD display shows "", the batteries need to be replaced.
- 2). Open the battery cover at the back of tester and remove the old batteries.
- 3). Replace with 4 x 1.5V AAA alkaline batteries and replace the cover.

10. RS232 SOFTWARE

- 1). Insert the CD into the CD-ROM drive of the PC and the software should auto-run. If the software does not auto-run, click on "Start", then "Run". Type "d:\setup" in the window and press the return key (where "d" is the letter of the CD-ROM drive in the PC). The software should begin the installation process.
- 2). Follow the instructions which appear on the screen. For further information and help, refer to the Help file on the CD.