



# Line EMI Monitor

## Quick Start Guide and Information

## Safety and Warnings

This meter is safe under the following limits:

- Indoor use ONLY
- Temperatures from 5° to 40° Celcius
- Humidity 0-80% up to 31° C decreasing linearly to 50% at 40° C
- Main Power Supply (Wall outlet or mains)  
110-240VAC, line fluctuations not to exceed  $\pm 10\%$



**WARNING** - Using this meter in a manner not specified by the manufacturer or outside the environmental limits may impair the safety protection provided by the equipment.



**WARNING** - Exercise care when plugging and unplugging these power cords. They carry potentially lethal voltages. Never touch or use this equipment in or around water or in conditions where water has condensed on or around the equipment or any of its test leads (AC power cord). Do not use this equipment if the test leads (AC power cord) are damaged.



**WARNING** - There are no user serviceable parts in this equipment. Opening the back cover will expose potentially lethal voltages. Refer all repairs and concerns to the manufacturer, AlphaLab, Inc., or authorized representative.



**WARNING** - Use only UL approved, 2-conductor, 18 AWG, NEMA 1-15P to IEC 320-C7, 120 or 250 VAC power cord. Do not use other power cords. Never remove the ground pin from a 3-conductor cord as replacement for approved 2-conductor cord!

## Description

The [Line EMI Meter by AlphaLab, Inc.](#) measures electromagnetic interference (EMI) in single-phase, 110-240 VAC 50/60Hz power lines. It plugs into a wall outlet or mains socket and requires no battery or additional external power source.

This meter measures the total line noise present on the power outlet (differential noise between hot and neutral) into which the unit is plugged. This noise is displayed as a peak-to-peak value in millivolts ( $\text{RMS} \times 2.82$ ). A yellow signal-strength bar also displays the EMI noise and a speaker plays the sound of the noise.

The range is 0.1 mV to 1999.9 mV peak-to-peak in frequencies from 10 kHz to 10 MHz. 50Hz and 60Hz power frequencies are ignored. Only noise frequencies above 10kHz and below 10 MHz are measured.

## Setup

Hold the meter firmly in one hand and plug the smaller, female end (IEC-320-C7) of the supplied cord into the base of the meter.



## Setup Continued

The supplied power/test cord is reversible and may be plugged into the wall in either direction. Plug the larger, male end (NEMA 1-15P) of this cord into the wall outlet or mains. An adapter plug may be needed outside of the United States.



The speaker sound will build to its correct level over a three-second period to avoid a power spike. The meter will now automatically display the noise on that power line.

## Reading the Color LCD Display:

Noise Level in p-p millivolts (RMS x 2.82)  
10kHz - 10MHz



Yellow  
Signal-Strength Bar

Average AC  
Voltage

You may take a reading on other power outlets by simply un-plugging the unit from the wall, moving to another outlet (mains) and plugging into it without removing the opposite end from the meter.

Changing and inconsistent readings will be common. You may also see the noise change according to the time of day or throughout the week.

Unplug the meter when not actively measuring.

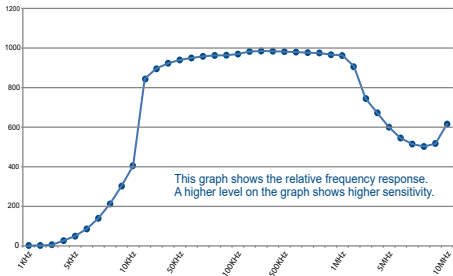
## Expected noise levels and Filtering EMI

A reading below 50.0 mVp-p would be considered low noise. Higher levels may cause interference with sensitive equipment and may produce electro-magnetic pollution near connected devices.

EMI filters are readily available and reduce power line noise very effectively. They generally use passive electronic components to attenuate conducted radio frequencies and electromagnetic interference.

## Specifications

- Operating Voltage: 85-300 VAC 50/60Hz
- Average Voltage Read Accuracy:  $\pm 1$  VAC
- Line Noise Range: 0.1-1999.9 mV peak-to-peak
- Refresh rate at 4x/sec.
- Noise Read Accuracy:  $\pm 8\%$  from 20kHz to 2MHz  
(within a factor of two from 10kHz to 10MHz)
- Size: 5.2 x 3.6 x 1.6 inches; 132 x 91 x 41 mm
- Weight: 8 ounces



## Warranty

We offer a one-year limited warranty from the date of purchase under normal use and service on all AlphaLab meters. If you have questions about the function of your meter, please visit [trifield.com/support](https://trifield.com/support) or email us at [support@trifield.com](mailto:support@trifield.com)



## Questions?

Call Toll-Free (USA) 1-800-658-7030

(Or Call 1-801-487-9492)

WEEKDAYS 9am-5pm MST

The Line EMI Meter is manufactured in the USA by

 AlphaLab, Inc., Salt Lake City, UT