

Loop field strength meter

Instructions for use

LAFSM01



FEATURES

- Low (-13dB) and High (+ 6dB) Ranges
- Selectable 'A' Weight Filter
- Conforms to IEC118
- Belt Clip

TECHNICAL SPECIFICATION

Display Type	10 LEDs
Battery	9 V PP3
Field sensitivity	1 mAM ⁻¹
Display Range	30 dB
Low range	-40 ÷ -13 dB
High Range	-21 ÷ +6 dB
0 dB Reference	100 mAM ⁻¹

DESCRIPTION

The **LAFSM01** is designed to allow the accurate measurement of loop field strength within an area covered by an induction loop (AFILS) system. The LAFSM01 has many features which make it ideal for surveying, commissioning and periodically testing all induction loop installations. The LOW range setting is provided for measuring cross talk between loop systems and interference from mains equipment such as lighting, dimmers and computer equipment. An 'A weight' filter is provided allowing measurements of the audio as the loop is heard by the human ear, this also rejects mains hum allowing accurate assessment of loop installations in areas of high electrical noise. All measurements are taken with 0 dB defined as 100mAM⁻¹ RMS using a 125ms PPM response rectifier in line with IEC118.

CONTROLS

- Range Select** This allows the meter to measure the signal or noise in the optimal scale, if you are on the high scale and no LEDs or only the bottom two red LEDs are lighting then switch to the LOW Range. LOW is optimised for background noise measuring.
- Response** This allows the user to select between full bandwidth (flat from 100 Hz to 15 kHz) and using an 'A' weight (a measuring curve that emulates the frequency sensitivity of the human ear). 'A' weight is ideal for background noise surveying as it suppresses 50 Hz and 100 Hz noise from mains wiring.
- Power** This switches the unit off and on.

INITIAL SETTING

An audio signal should be sent to the loop amplifier, either by placing a speaker and sound source of 65 dBA near the microphones or by playing calibrated pink noise through the system. The peak current required for a room with the cable at floor can be obtained from the formula:

$$I = 4 * A / 9$$

where I=peak current required and A is the length of the shortest side of the loop. Using a screwdriver adjust the drive control on the loop amplifier until the LED representing the value of I lights (this gives a good first approximation for the required current).

FINAL SETTING

Using the LAFSM01 held vertically and at the listening height (ear level) loop users will be at (standing or sitting), measure the field strength in the centre of the room. This should be 0 dB peaking at +3 dB when the compressor LED blinks from 0 dB to 6 dB. If this is not the case, adjust the drive control on the amplifier to achieve this level. Finally walk through the area covered and note the average level of the loop field, adjusting the loop amplifier if necessary so that the average field strength is between -3 dB and +3 dB over as much of the area as possible. It is also wise to mark on a plan areas of poor coverage or high background noise so hearing aid users can be directed away from these areas.

Once commissioned, we recommend listening to the loop signal with a receiver such as the **LARX01** to gain a qualitative measurement of loop audio performance. It may be wise to supply the responsible person a loop receiver so they can periodically measure loop operation and record this in a logbook.

Notes

1. If the unit is not being used for long periods of time remove the batteries - this will stop them flattening and will prevent any chance of the battery leaking and damaging the unit.
2. The LAFSM01 is designed to measure loops containing professional compressor limiters with variable ratios, if you wish to test voltage loops or loops without compressor limiters then a higher peak field strength than 0 dB will be required. Please refer to the manufacturers data for this value.

... NOTE ...

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Via Mecenate, 90 - 20138 MILANO - ITALIA
TEL. +39-02-580 77 1 (15 linee r.a.)
FAX +39-02-580 77 277
<http://www.paso.it>
UDT - 12/02 - 11/579 - FC