



# ETFSM

## Loop Field Strength Meter

The ETFSM is designed to provide a low cost solution for AFILS testing during installation.



### Features:

- **Rugged belt Clip Case**
- **Wide range (+6dB to -40dB)**
- **10 LED Bargraph**
- **Battery Powered**
- **Low range for background noise measurement**
- **Selectable A weight Filter**

The ETFSM is designed to allow the accurate measurement of loop field strength within an area covered by an induction loop (AFILS) system.

The ETFSM 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 human ear hears the loop, this also rejects mains hum allowing accurate assessment of loop installations in areas of high electrical noise.

All measurements are taken with 0dB defined as 100mAM-1 RMS using a PPM response rectifier in line with IEC118-4 (BSEN60118-4).

Product Overview



**Current Thinking**

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## Loop Field Strength Meter

### 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 allow the user to select between full bandwidth (flat from 100Hz to 15KHz) 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 50Hz and 100 Hz noise from mains wiring
Power	This switches the unit off and on

### Commissioning A Loop System

#### Initial setting

An audio signal should be sent to the loop amplifier, either by placing a speaker and sound source of 65dBA 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 & 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 ETFSM 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 0dB peaking at +3dB when the compressor LED blinks from 0dB to 6dB 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 -3dB and +3dB 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 ETRX 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 ETFSM 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 0dB will be required please refer to the manufacturers data for this value.

### Technical Specification

Display Type	10 LEDs	Low Range	-40dB to
Battery	9V PP3		-13dB
Field sensitivity	1mAM <sup>-1</sup>	High Range	-21dB to
Display Range	30dB		+6dB
		0dB reference	100mAM <sup>-1</sup>

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