

1. GENERAL

The LDM-171 is an easy-to-use, semi-automatic distortion meter that can measure all total harmonic distortion in audio amplifiers and communications equipment. It covers the entire audio band from 20Hz to 20kHz with a high sensitivity of 0.1% full-scale.

An auto-tuning circuit enables distortion to be measured easily even in the 1% and lower ranges, where manual tuning is difficult.

A highly sensitive built-in millivoltmeter enables the LDM-171 to function also as a signal-to-noise (S/N) meter.

2. SPECIFICATIONS

2.1 Distortion Measurement

Frequency ranges
Measurement ranges
Input voltage ranges
Minimum measurable input voltage
Maximum measurable input voltage
Measurement accuracy
Residual distortion
Input impedance
Filter characteristics
 Fundamental suppression
 Harmonic attenuation
Auto-tuning
 Capture ranges

Three ranges: 20Hz to 20kHz
Seven ranges: 0.1%, 0.3%, 1%, 3%, 10%, 30% and 100%
Four ranges: 0.35V to 1V, 1V to 3V, 3V to 10V, 10V to 30V
350mV
30V
±5% of fullscale (except in 100% range)
0.01% max.
Approx. 100k Ω , shunt capacitance 50pF max.

80dB min.
0.6dB max. (2nd and 3rd harmonics)

1%, 0.3%, 0.1%

2.2 Level Measurement

Frequency range
Measurement ranges
Measurement accuracy
Input impedance

20Hz to 200kHz
Twelve ranges (0.3, 1, 3, 10, 30 and 100) in both mV and V
±5% of fullscale
1M Ω , shunt capacitance 50pF max.

2.3 S/N Measurement

Measurement range
Input voltage range
Input impedance

0dB to 80dB
Same as for distortion measurement
Approx. 100k Ω , shunt capacitance 50pF max.

2.4 Common Specifications

High-pass filter
 Cutoff frequency
 Rolloff
Monitor terminal
 Output voltage
 Output impedance
 Power requirements

External dimensions
Ambient temperature
Accessories

400Hz
12dB/oct

1Vrms at fullscale reading
Approx. 1k Ω
100V ±10%, 50/60Hz.
Alterable to 120V, 200V or 240V by rewiring transformer taps.
300(W) x 150(H) x 250(D)mm
0°C to 40°C
1 banana tip/alligator clip lead
Instruction manual

3. PANEL FUNCTIONS

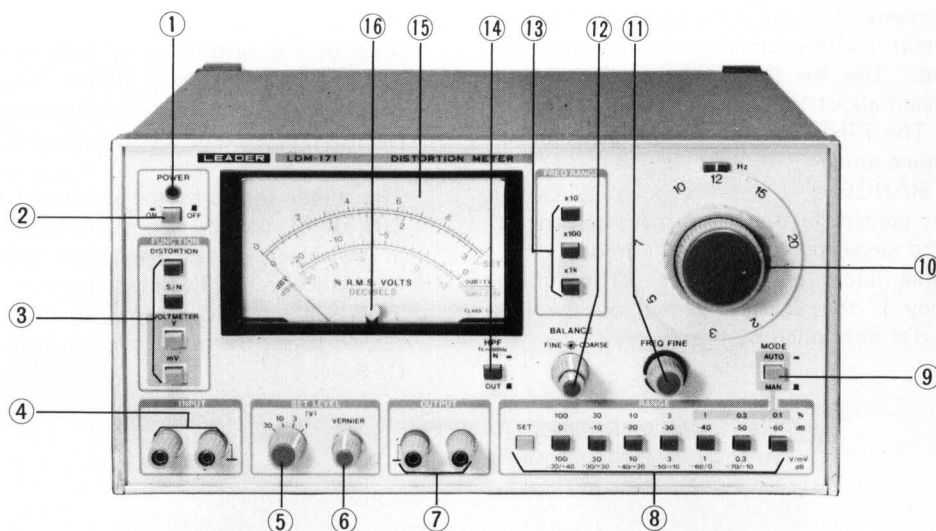


Fig. 3-1

3.1 Front Panel (Fig. 3-1)

- ① **POWER (Pilot lamp)**
Lights when power is on.
- ② **POWER (Switch)**
Push down (—) to turn power on. Pilot lamp lights.
Push again (—) to turn power off.
- ③ **FUNCTION**
DISTORTION Press this switch to measure distortion.
S/N Press this switch to measure S/N.
VOLTMETER Press the V switch to measure AC voltage of 100mV or greater. Press the mV switch to measure AC voltages of 100mV or less.
- ④ **INPUT**
Connect the signal to be measured to these terminals. Input impedance is approximately 100k Ω for the DISTORTION and S/N functions, and 1M Ω for the VOLTMETER function.
- ⑤ **SET LEVEL range switch**
Select the range for distortion and S/N measurement from 1V to 30V, depending on the input voltage.
- ⑥ **SET LEVEL VERNIER**
After setting the approximate level with the SET LEVEL range switch, turn the VERNIER control to move the pointer to the fullscale position (marked SET on the meter).
- ⑦ **OUTPUT**
AC output proportional to the meter reading is provided during distortion, S/N and AC voltage measurements.
- ⑧ **RANGE**
These switches set the measurement range for each of the functions. The SET switch is used in distortion and S/N measurement. When it is pressed, meter fullscale is adjusted to the value set by the SET LEVEL switches ⑤ and ⑥.
- ⑨ **MODE MAN — / AUTO —**
In distortion measurement, tuning can be performed either manually or automatically. The capture ranges for auto-tuning (AUTO —) are from 1% to 0.1%.
Note: When auto-tuning (—) is used, the FREQ FINE ⑪ and BALANCE ⑫ controls are inoperative.
- ⑩ **Frequency range dial**
Use this two-speed dial to tune the LDM-171 to the input frequency in distortion measurement. Turn the outer dial to make large changes in the frequency. Use the inner dial for general tuning.
- ⑪ **FREQ FINE**
This control fine-adjusts the tuning frequency in distortion measurement. Before using it, move the pointer down to about 1% with the frequency dial ⑩ and balance controls.
Note: The FREQ FINE control is inoperative in the auto-tuning mode.