

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	Three ranges: 20Hz to 20kHz
Measurement ranges	Seven ranges: 0.1%, 0.3%, 1%, 3%, 10%, 30% and 100%
Input voltage ranges	Four ranges: 0.35V to 1V, 1V to 3V, 3V to 10V, 10V to 30V
Minimum measurable input voltage	350mV
Maximum measurable input voltage	30V
Measurement accuracy	±5% of fullscale (except in 100% range)
Residual distortion	0.01% max.
Input impedance	Approx. 100k Ω , shunt capacitance 50pF max.
Filter characteristics	
Fundamental suppression	80dB min.
Harmonic attenuation	0.6dB max. (2nd and 3rd harmonics)
Auto-tuning	
Capture ranges	1%, 0.3%, 0.1%

2.2 Level Measurement

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

2.3 S/N Measurement

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

2.4 Common Specifications

High-pass filter	
Cutoff frequency	400Hz
Rolloff	12dB/oct
Monitor terminal	
Output voltage	1Vrms at fullscale reading
Output impedance	Approx. 1k Ω
Power requirements	100V ±10%, 50/60Hz. Alterable to 120V, 200V or 240V by rewiring transformer taps.
External dimensions	300(W) x 150(H) x 250(D)mm
Ambient temperature	0°C to 40°C
Accessories	1 banana tip/alligator clip lead Instruction manual

3. PANEL FUNCTIONS

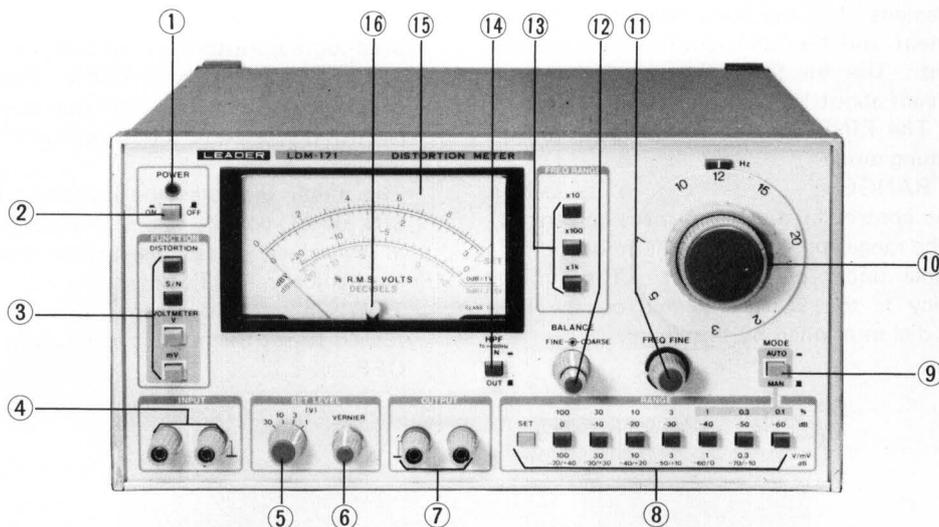


Fig. 3-1

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 100kΩ for the DISTORTION and S/N functions, and 1MΩ 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.