

## 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 $\Omega$ , 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 $\Omega$ , 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 $\Omega$ , 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 $\Omega$   
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

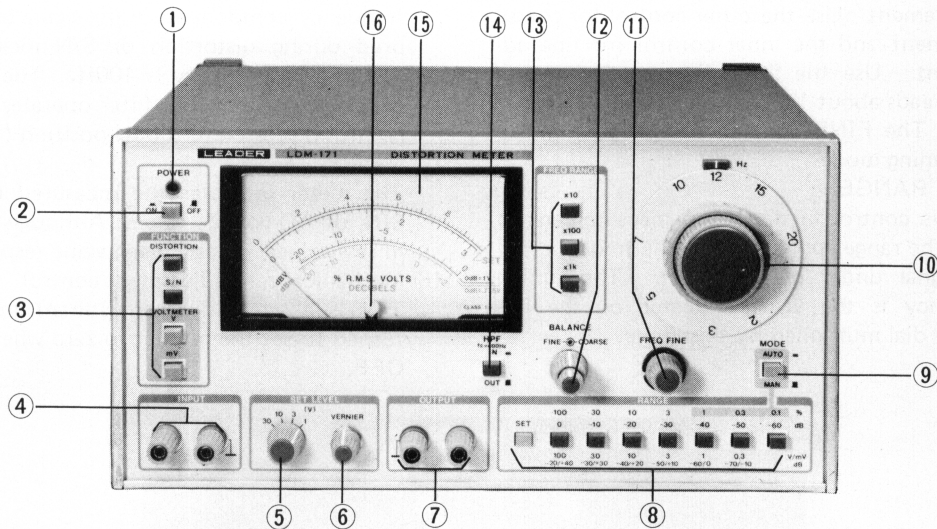


Fig. 3-1

#### 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 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.