longitudinal balance test set

T207

Features

- Balance Measurements: 10 to 90 dB
- Direct Reading of Balance in dB
- Measure 1-Port and 2-Port Circuits or Devices
- Quasi-rms Meter Circuit
- Built-in Calibration Circuit
- Built-in Longitudinal Signal Sources
  Single Frequency Tests:
  40 Hz to 4 kHz; 1v/10v
  Broad Band Signal: 1v
- DC Current Source for Circuits Under Test
- Verification of Validity of Measurement

Introduction

The **Model T207 Longitudinal Balance Test Set** is designed to measure the longitudinal balance of single-port or two-port circuits and devices. This test set permits evaluation of relays, feed coils, networks, long-line units, amplifiers and other equipment present on the typical communications circuit. These devices may have poor longitudinal balance and thus contribute to the susceptibleness of the facility. The measuring technique and circuit configuration conforms to the IEEE standard 455-1976 for Longitudinal Balance Measurements.

Longitudinal balance measurements may be made at single frequencies in the range of 40 Hz to 4 kHz. Also, as an added feature of the Model T207, a figure of merit balance measurement may be made using a shaped waveform which is representative of a power induced noise spectral distribution. Single frequency measurements on circuits with balance approaching 80 dB can be made with a typical accuracy of ± 1 dB.

A source of DC current is provided for the device under test to facilitate the simulation of actual operating conditions.

The presence of hum and noise in the circuit under test can result in an indication of apparent poor balance. A validation check is provided to determine if external signals have affected the balance measurement.

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Specifications

Balance Circuit

- Range of Balance Measurement: 10 to 90 dB (direct reading).

•Accuracy:

± 1 dB for balance readings up to 80 dB over the full frequency range of 40 Hz to 4 kHz.

± 3 dB for balance readings to 90 dBand frequency to 1 kHz. Better accuracy, typically attainable, is assured as follows: If the CAL balance reading is at least 13 dB greater than balance reading, the balance reading is accurate to ± 1 dB.

- Provisions for Self Calibration of the basic balance test circuit.
- Connections for 1 port and 2 port circuits or devices.
- Provisions for "series balance" and "shunt balance" two-port measurements.

Generator

- Signal applied longitudinally to balance test circuit.
- Single Frequency:

  Range: 40 Hz to 4 kHz in two decade ranges.
  Harmonic Distortion: at least 55 dB below level of fundamental frequency.
  Voltage: 1 volt and 10 volts, switch selectable; accurate to within ±2%.

- Broad Band:

  Waveform derived by passing a 60 Hzbalance triangular wave through a C-message weighting filter.

  Voltage: 1 volt rms.

  NOTE: The BROAD BAND balance test is an extra feature of the T207. Its purpose is to pro vide a meaningful single balance measurement for Acceptance testing or for comparing similar equipment.

- Gen Out 600 ohm: An unbalanced 600 ohm output from the Generator (310 jack).

Measuring Circuit

- Range Setting: Nine-position 10 dB step BALANCE switch. A 20 dB gain step in the metercircuit is ganged to generator LEVEL switch, so that BALANCE meter and switch together are calibrated to read dB Balance directly.
- Frequency Responses:

  BROAD BAND or SINGLE FREQ 40-400: Flat (within overall accuracy requirement for balance measurement) over full frequency range.

  SINGLE FREQ 400-4K: Flat over selected range; 60 Hz attenuated at least 30 dB.

- Detector: Quasi-rms.
- Monitor: An output (310 jack) connected to a point in the measuring circuit which permits listening to the metallic signal.

D.C. Bias

Provision for supplying DC current to circuit-under-test during measurement as follows:

- D.C. Feed: Front panel adjustable; zero to 120 mA into up to 450 ohms circuit-under-test resistance. Current limit at 120 mA.
- OFF: Open circuit, no D.C. current
- D.C. Term: 750 ohms or 2 k ohms. (Independent of AC terminating impedance, which remains 736 ohms under all conditions.)

Environmental

Operating Temperature:	0 to 50°C
Humidity:	95% at 35°C
	40% at 50°C
Storage Temperature:	55°C to +70°C
Altitude(non-operating):	50,000 ft.

General

Power:	117 Volts ± 10%, 60 Hz
Size (including cover):	15 1/4" W x 10 1/4" H x 11" D
Weight:	26 lbs

Ordering Information

T207 Longtitudinal Balance Test Set	30207013

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Specifications and price subject to change without notice.
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