1. INTRODUCTION

GENERAL

The Philips AC millivoltmeter PM 2554 is a sensitive and accurate measuring instrument suitable for floating measurements from 50 μV up to 300 V in the frequency range from 2 Hz up to 12 MHz.
The instrument can be powered by mains.
By the very great bandwidth and sensitivity the instrument has a width range of applications, e.g. measurements on LF and HF amplifiers, carrier-wave telephony, electro-acoustical as well as for measurements on transducers and measuring-transformers, etc.

The d.c. or a.c. output choosen by an internal jumper, makes it possible to employ the instrument as an a.c./d.c. converter or as an a.c. amplifier.
The instrument has a great indicating speed, a high temperature stability and is quickly ready for use.
The 12 measuring ranges of 1 mV up to 300 V f.s.d. overlap so that a high reading accuracy is obtained.
The moving-coil instrument is provided with a mirror scale with the ranges 0-30 and 0-100 as well as dB scale from −20 dB...+ 2 dB (total span −80 dB... + 52 dB).

By means of the measuring-probe PM 9336 the input impedance can be changed from 1 MΩ // 30 pF except capacity measuring cable (100 pF) into 10 MΩ // 11 pF to permit measurements on very high ohmic circuits.

2. TECHNICAL DATA

Properties expressed in numerical values with tolerances are guaranteed by the factory.
Numerical values without tolerances serve only for information and represent the properties of an average instrument.

2.1. Electrical

Measuring range	50 μV...300 V divided into 12 ranges from 1 mV...300 V (f.s.d.)
dB Measuring range	−80 dB...+ 52 dB (12 ranges) 0 dB = 1 mW into 600 Ω, 0.775 V
Frequency range	2 Hz...12 MHz
Input impedance	direct 1 MΩ // 33 pF with PM 9336: 10 MΩ // 11 pF
Accuracy	Frequency 10 Hz – 400 kHz ± 1% of reading, ± 1% f.s.d. 2 Hz – 10 Hz ± 3% of reading, ± 1% f.s.d. 400 kHz – 2 MHz ± 2% of reading, ± 1% f.s.d. 2 MHz – 6 MHz ± 2% of reading, ± 3% f.s.d. 6 MHz – 12 MHz ± 4% of reading, ± 4% f.s.d. *Note: By application of probe PM 9336 the accuracy will decrease 3% of reading.*

Pre-deflection	< 3 scale divisions (terminating resistance ⩽ 500 Ω) Influence on accuracy: 10% pointer deflection ⩽ 0.45% 30% pointer deflection ⩽ 0.15%
Temperature range	0...+ 45°C
Temperature coëfficient	⩽ 1°/oo/°C
Effect of mains voltage variations	Additional error of 1°/oo
Rectifying circuit for the meter section	Average value rectifier
Meter scale	Mirror scale with knife-edge pointer Calibrated in rms values of sinusoidal input voltages Linear division from 0...103 and 0...325 dB scale from −20 dB...+ 2 dB
Overload protection	In the ranges 1 mV to 300 mV: 300 V for frequencies between 2 Hz and 10 kHz 10 V for frequencies above 10 kHz Other ranges: 300 V for frequencies between 2 Hz and 12 MHz
Max. permissible voltage (all ranges)	Between Hi and Lo 400 Vd.c. Between Lo and housing 500 Vd.c. or 500 V_{pp}
Common mode rejection ratio (between Lo and housing)	In the 1 mV range: Frequency 10 Hz ... 1 kHz > 140 dB 1 kHz... 10 kHz > 130 dB 10 kHz...100 kHz > 120 dB *Note: These values decrease with 10 dB/range in the higher ranges.*
Impedance between Lo and housing	1 GΩ
Output	D.c. or a.c. output (choosen by internal jumper)
D.C. output	Output resistance 1 kΩ Output voltage 1 V short-circuit proof
A.C. output	Output impedance 600 Ω in serial with 47 μF Output voltage 50 mV short-circuit proof
Accuracy d.c. output	Frequency 10 Hz – 400 kHz ± 1% of reading, ± 1% f.s.d. 2 Hz – 10 Hz ± 3% of reading, ± 1% f.s.d. 400 kHz – 2 MHz ± 2% of reading, ± 1% f.s.d. 2 MHz – 6 MHz ± 2% of reading, ± 3% f.s.d. 6 MHz – 12 MHz ± 4% of reading, ± 4% f.s.d.
Supply	Mains voltage: 90 V...132 V or 180 V...265 V, 50/60 Hz.

Long-term stability	At min. 90 operating days $1^{o}/oo$ of f.s.d. on the average.

2.2. Mechanical

Dimensions	Height 145 mm Width 236 mm Depth 298 mm
Weight	Approx. 3.5 kg.

3. ACCESSORIES

3.1. Supplied as part of the equipment.

- Measuring cable for voltages above 3 mV and frequencies below 100 kHz
- Manual.

3.2. Optionally available.

- Measuring probe (10:1) PM 9336 (fig. 1 page 22)
- Measuring cable BNC–BNC PM 9074
  Length 1 m Impedance 50 Ω
- Measuring cable BNC–BNC PM 9075
  Length 1 m Impedance 75 Ω
- Measuring cable BNC–BNC PM 9076
  Length 1 m Impedance 135 Ω