

PHILIPS

**Broadband HF Millivoltmeter
Type GM 6014**

910,0



Features

- High sensitivity: 100 μ V ... 30 V
- Wide frequency range: 1 kc/s ... 30 Mc/s
- High input resistance and low input capacitance
- Incorporating printed circuitry
- Protected against overloads
- Independent of mains voltage variations
- Built-in calibration voltages
- Easily portable

Industrial equipment division
Electronic measuring apparatus
Broadband HF millivoltmeter
Type GM 6014



Applications

The Millivoltmeter GM 6014 is particularly suitable for making measurements in the fields of radio, television and telecommunication engineering.

Description

The GM 6014 has a broadband amplifier, consisting of 7 stages. The first stage, incorporated in the probe, is a cathode follower. As this ensures a low input damping and a small input capacitance the influence of the voltmeter on the measuring circuit is extremely small. The cathode resistance of the first stage is constituted by the measuring range attenuator, which may therefore consist of a low-resistance net work, so that this attenuator is frequency-independent. With the aid of a capacitive pre-attenuator, which can be pushed on to the probe, the measuring range can be increased by a factor of 100, i.e. to 30 V.

The amplifier has a high stability due to negative feed-back, electronic stabilisation of the H.T. voltage and compensation of filament voltage.

The output voltage of the amplifier is rectified by crystal diodes and subsequently applied to the moving coil meter. As a result of the negative feed-back a very high linearity of the scale has been obtained. By means of a bias the meter can be electrically set to zero. The GM 6014 contains a stabilized RC oscillator, which supplies 2 calibration voltages.

Technical data

Measuring ranges

0 ... 30 V_{rms} subdivided into 10 ranges from 0 ... 1 mV up to 0 ... 30 V
 A dB scale from -80 dB ... +32 dB
 0 dB = 1 mW into 600 Ω (0.775 V)
 Scale length 12.5 cm / 5"

Frequency range

Without pre-attenuator (up to 300 mV):
 1 kc/s ... 30 Mc/s
 With pre-attenuator (up to 30 V):
 10 kc/s ... 30 Mc/s

Accuracy

< 3 % of full scale. The influence of the frequency response curve, which characteristic relative to response at 30 kc/s is flat to within ± 0.5 dB over the full frequency range, has not been taken into account here.

Input impedance

Damping

without pre-attenuator:	with pre-attenuator:
at 1 kc/s: 3 MΩ	> 50 MΩ
at 1 Mc/s: 800 kΩ	> 10 MΩ
at 30 Mc/s: 50 kΩ	> 2 MΩ

Input capacitance without pre-attenuator 7 pF; with pre-attenuator 2 pF

Max. admissible direct voltage on the probe: 300 V

Calibration voltages

30 mV and 3 V (± 1 %); frequency: 30 kc/s

Supply

The apparatus is suitable for use on A.C. mains

Voltage: 110, 125, 145, 200, 220 and 245 V

Frequency: 40 ... 100 c/s

Power consumption: 80 W

Tube complement

1 × 5718; 6 × E 180 F; 1 × EZ 81; 2 × PL 81;
 1 × EF 86; 1 × 85 A 2; 1 × E 88 CC; 2 × OA 73
 American equivalent types existing

Finish

The instrument is housed in a grey cabinet of sturdy and modern design

Accessories

Pre-attenuator 100/1; mains flex

Dimensions and weight

Height 27 cm / 11"
 Width 35 cm / 14"
 Depth 21 cm / 8"
 Weight 11.5 kg / 24 lbs

