PM 5109 is an RC oscillator offering a low distortion (0.02% at 1 kHz) yet high, 30V_{p-p} (open circuit) output voltage in the asymmetrical mode. It can also be used in a fast settling mode, useful for fast routine work. These features, plus the facility to select asymmetrical or dual floating symmetrical outputs, makes it ideal for telecommunication applications as well as for education, R & D, manufacturing and audio equipment servicing. Both output voltages can be attenuated by a continuous control; the asymmetrical output can also be attenuated in steps of 10dB down to 60dB. Both pure sine waves or square wave signals are available at frequencies from 10 Hz to 100 kHz; output impedance is switchable for either 600Ω or 50Ω in the asymmetrical mode and 600Ω or LOW Z in the symmetrical mode (see specification).

A DIN loudspeaker connection is provided, which has an impedance similar to the symmetrical low impedance output. This allows direct testing of loudspeakers, regardless of their impedance. A special TTL output for direct connection to TTL circuitry or for synchronization purposes, is also provided. The open circuit output is monitored by a meter on the front panel and the output range in use is indicated by the appropriate LED, from the seven provided.

For applications where the symmetrical output is not required, a special, economical, version, PM 5109S is available.

TECHNICAL SPECIFICATION

PM 5109

FREQUENCY AND CHARACTERISTICS

Nominal range
10 Hz...100 kHz
(4 subranges, selectable by push-buttons)

Indication
dial (1...10)

Setting error
<±5% ± 1 Hz

Temperature coefficient
<0.05%/K

Long term drift (<7h)
<1.5 x 10⁻³

Short term drift (<15 min)
<0.5 x 10⁻³

Duty cycle
50% fixed

WAVEFORMS

Sine wave
Square wave (output B only)

OUTPUT

Separate outputs selectable with push-buttons

A. Symmetrical output (4 x 4mm connector on front panel)
   a. 2 x 300Ω
   b. 300Ω + 300Ω
   c. 2 x low Z
   d. low Z + low Z

B. Asymmetrical output (BNC connector at front panel)
   a. 600Ω
   b. 50Ω

Loudspeaker output (DIN connector at rear panel)
   Only active when output Ad is selected

TTL Output (BNC connector at rear panel)

Open circuit output voltage (RMS)
   0.03...3.16V (output A)
   0.1...10V (output B)

Indication
   Meter (7 ranges indicated by LED)

Attenuation
   10, 20, 30dB calibrated steps selectable in any combination (output B only) plus 30dB continuously adjustable

SINE WAVE

Total harmonic distortion
   (for output Aa, Ab, and B)
**PM 5109/PM 5109S**

**Low distortion LF generators**

- Low distortion mode
  - <0.7% (10Hz...100kHz)
  - <0.03% (300Hz...20kHz)
- Fast settling mode
  - <1.5% (10Hz...100kHz)
  - <0.5% (100Hz...10kHz)

**Total harmonic distortion**
(for output Aa and Ab)
- Low distortion mode
  - <0.7% (open circuit 20Hz...100kHz)
  - <0.03% (open circuit 300Hz...20kHz)
  - <0.15% (4Ω load, 20Hz...100kHz)
- Fast settling mode
  - 0.5% (0...4Ω load, 100Hz...10kHz)

**Frequency response of amplitude**
±0.2dB (1kHz, outputs A & B, open circuit)
±0.5dB (10Hz...1kHz, outputs Ac & Ad, 4Ω load)
- 6dB (70kHz, outputs Ac & Ad, 4Ω load)

**Square Wave**
- Rise and fall time
  - <0.5µs
- Overshoot and ringing
  - <2% (>20Hz)
  - <1% (>50Hz)

**TTL**
- Duty cycle
  - 50%
- Fan out
  - 20

**POWER REQUIREMENTS**
- Line voltages
  - 110, 128, 220, 238V ± 10%.
- Frequency
  - 50...100Hz
- Power consumption
  - 17W

**Dimensions and weight**
(wxhxw) 310 x 140 x 330mm
(12.2 x 5.5 x 13-in)
PM 5109: 6.5kg (14.3lb)
PM 5109S: 5.5kg (11lb)

**ACCESSORIES SUPPLIED**
- Instruction manual

The specification for PM 5109S is as for PM 5109, without the symmetrical output facility.

PM 5109 being used to check the bandwidth characteristic of a long coaxial cable.

**ORDERING INFORMATION**
- PM 5109 RC generator + output monitor
- PM 5109S RC generator 10Hz – 100kHz

**OPTIONAL ACCESSORIES**
- PM 9075 Coax. Cable BNC-BNC
- PM 9569 19-in Rackmount adapter