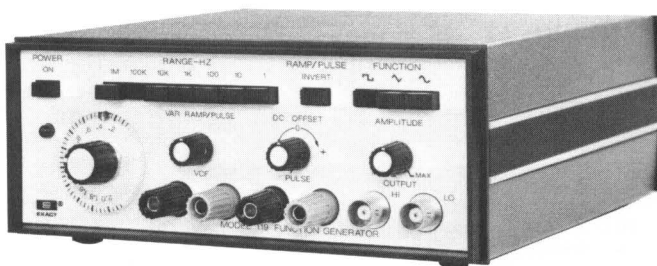


**MODEL 119P**



**MODEL 119**

## SPECIFICATIONS

### DYNAMIC FREQUENCY RANGE:

0.02 Hz to 2.2 MHz (7 ranges).  
(0.002 Hz to 200 KHz with "B" option)

### FREQUENCY ACCURACY:

±5% of full scale.

### VCF (Voltage controlled frequency):

0 to +10 V for 1000:1 from maximum multiplier setting.  
Approx. 10K input impedance.

### WAVEFORMS:

Sine, square, triangle, ramp, pulse.

### MAIN OUTPUTS:

High output — 20 V P-P open circuit.  
10 V P-P into 50 Ohms.  
50 Ohms output impedance.  
Low output — 632 mV P-P open circuit.  
316 mV P-P into 50 Ohms.  
50 Ohms output impedance.

(Option K and Model 119P have a single 600 Ohm in place of 50 Ohm outputs.)

### ATTENUATOR:

30 dB continuously variable affecting both low and high outputs.

(Option A substitutes 20 and 40 dB steps in place of low output)

### DC OFFSET (Variable):

±10 V to -10 V open circuit.  
+5 V to -5 V into 50 Ohms.

Note: Protection circuit will automatically clip waveform if DC offset plus signal exceeds maximum peak voltage.

### SINE DISTORTION:

<1% 0.2 Hz to 100 KHz. Typically Less than 0.5%.  
All Harmonics >30 dB down 100 KHz to 2 MHz.  
Sine distortion measured at full output, between 0.2 and 2.0 on the multiplier dial.

### SINE FREQUENCY RESPONSE:

<±0.1 dB 0.2 Hz to 100 KHz.  
<±0.5 dB 100 KHz to 2 MHz.

### SQUARE WAVE:

Rise time: <100 nsec.  
Aberrations: ±5% of max. P-P amplitude.

### PULSE OUTPUT:

TTL Compatible.  
Amplitude: +3 V open circuit.  
Rise time: 25 nsec (typically 10 nsec).  
Will sink 20 TTL loads.

### AM (119M only):

Approx. 100K Ohm input impedance.  
Approx. 5 V P-P for 100% modulation at maximum carrier.  
Separate carrier and modulation controls.  
Full four quadrant capability.  
Double sideband capability.

### SWEEP GENERATOR (121 only):

Period range: 1 msec to 10 sec  
Period accuracy: ±10% in CAL position  
Sweep width: 0 to 1000:1  
Ramp output: 2.5 V peak  
Sweep Sync output: 5 V peak

### POWER REQUIREMENTS

115 VAC ±10% or 230 VAC ±10%  
50 Hz to 400 Hz. Approx. 10 watts  
Other voltages available.  
(Model 119P also operates from 12 V DC or up to 8 hrs from its built-in rechargeable battery pack)

### PHYSICAL CHARACTERISTICS

18.8 cm wide x 7.3 cm high x 21.6 cm deep.  
Weight — Approx. 4.4 Kg (119P is Approx. 10.5 Kg.)

NOTE: (Unless otherwise stated). Specifications apply 10% to maximum output voltage terminated into 50 Ohms 0.2 to 2.0 frequency dial setting. Specifications are valid at 25°C ±5°C after 1 hour warmup time. Specifications not valid in AM mode.