

GF-230, GF-232

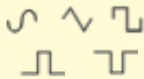
FUNCTION GENERATORS



The GF-230 is a function generator covering the frequency range from 0.1Hz to 1MHz in seven decades. It allows to generate sinusoidal, square and triangular waves with continuous control of the output level, fixed 20 attenuator and the possibility to superimpose the signal at a continuous level through the DC OFFSET control. The VCO input located on the rear panel enables the user to control the output frequency and performs FM modulations to any auxiliary signal.

The GF-232 covers from 0.2 Hz to 2 MHz and it is equipped with a 50 Ω output. Also included is a signal symmetry control, allowing to obtain saw-tooth signal, digital frequency indication, a power amplifier up to 4 MHz with a 50 Ω output impedance, a variable-level comparator and frequency meter up to 10 MHz (5 digits).

(Only GF-232)			
Frequency counter			
Max. frequency	10 MHz	Resolution	100 Hz
Sensitivity	60 mV (5 MHz)	Input impedance	100 k Ω
Amplifier			
Bandwidth	4 MHz	Input amplitude	100 k Ω
Output impedance	50 Ω	Output amplitude	10 Vpp (50 Ω)
Gain	32 dB (40 dB o.c.)		
Level comparator			
Input impedance	100 k Ω	Output amplitude	TTL
Trigger control	± 150 mV variable		

SPECIFICATIONS	GF-230	GF-232
General		
Frequency range	0.1 Hz to 1 MHz in 7 decades	0.2 Hz to 2 MHz in 7 decades
Frequency control	Ratio 10:1, Accuracy $\pm 5\%$	
Continuous variation control		
Frequency indicator		Digital
Resolution		0.1 Hz to 1 kHz
Time between readings		250 ms
External input VCO / FM	0 to 10 V for a 10:1 linear variation Input impedance 15 k Ω	
Output		
Output signals	Sinusoidal, triangular and square	
Continuous symmetry control		10:1 both senses
Output amplitude	20 Vpp (open circuit)	
	10 Vpp (600 Ω)	10 Vpp (50 Ω)
Output impedance	600 Ω	50 Ω
Continuous amplitude control	> 30 dB	
Attenuator	20 dB	
DC offset continuous	± 10 V (open circuit)	
	± 5 V (600 Ω)	± 5 V (50 Ω)
Output voltage without clipping	± 10 V (open circuit) $V_{offset} + V_p = \pm 10$ V max.	
Sinusoidal		
Amplitude response	-1dB at nominal output, ref. 10 kHz	
Distortion	<0.6% nominal output (to 100kHz)	
Triangular	Linearity < 1 %	
Square	Rise time < 80 ns	
TTL Output		
Amplitude	> 3 V (open circuit)	
Symmetry in % of period	Fixed (~ 15)	Var. (15 al 85)
Rise time	< 25 ns	
Power supply		
Mains voltage	110-125-220-230-240VAC / 50-60Hz	
Consumption	14 W	
Mechanical features		
Dimensions	W. 212 x H. 102 x D. 241 mm	
Weight	1.7 kg	

GB-212



The GB-212 oscillator is a versatile generator for frequencies between 20 Hz and 200 kHz, with square and sinusoidal signal outputs. The harmonic distortion of the signal is very low, which makes it very suitable for high fidelity, equalizer testing, RF generator modulation, measurement of resonance frequency of loudspeakers, LC circuit resonance, Servo system analysis, characteristic study of electronic components, analysis and synthesis of basic circuits, amplifier response, analysis of passive networks, (resonant circuits, filters), etc.

LF GENERATOR

SPECIFICATIONS	GB-212
Generator	
Frequency	20 Hz to 200 kHz in 4 decades
Frequency	Digital, $\pm 3 \frac{1}{2}$ digits LCD
Resolution	0.1 Hz to 100 Hz, according to decade
Output	
Internal impedance	600 Ω
Output control	Continuous, attenuator 0 to 60 dB (20 dB steps)
Sinusoidal signal	
Output voltage	5 Vrms (40 mW, 600 Ω) / 10 Vrms (o.c.)
Amplitude response	+ 0.5 dB / 0.2 dB (ref. 1 kHz)
Max. harmonic distortion	0.02%(20Hz to 20kHz) / 0.05%(20kHz to 200kHz)
Square signal	
Output voltage	10 Vpp (o.c.) / Rise time < 100 ns
Output meter	
Type (analogue meter)	e.m.f. sine output and the power in dBm on a 600 Ω ($\pm 2\%$ accuracy of f.e.)
Power supply	
Mains voltage	110-125-220-230-240 V AC / 50-60 Hz
Consumption	15 W
Mechanical features	
Dimensions	W. 212 x H. 102 x D. 241 mm
Weight	1.7 kg