

FUNCTION GENERATOR (Model : FG XX)



SALIENT FEATURES

- ◆ Sine, triangle, square, variable duty cycle
- ◆ Pulse and Ramp
- ◆ Wide frequency ranges
- ◆ Very low sine wave distortion
- ◆ Output attenuation upto 60dB
- ◆ VCG input
- ◆ Output DC offset
- ◆ 5/10 Watts amplifier for models up to 300 KHz
- ◆ Frequency counter above 1 MHz
- ◆ Frequency/ universal counter and voltmeter
- ◆ AM / FM
- ◆ With internal and external frequency counter
- ◆ Voltmeter and universal counter
- ◆ Compact & elegant design
- ◆ Short circuit protection
- ◆ Comply all international safety standards
- ◆ Flexible designs for wide range of applications

SALIENT FEATURES

- ◆ Function selection using microcontroller based programming
- ◆ Wide Frequency range: 0.1Hz to 1MHz, 0.1Hz to 2MHz, 0.1Hz to 3MHz and 0.1Hz to 20 MHz (Four separate Models).
- ◆ Bright 4 digit LED display for freq. readout and optionally amplitude with range indicating LEDs: MHz/KHz/Hz. Optionally Internal / External frequency counter may be provided.
- ◆ Easy selection of frequency range with separate fine control.
- ◆ Versatile waveforms options: Sine, Triangle, Square, Ramp, Optional Facilities of AM Balanced, AM (standard), FM, ASK, FSK, Pulse, TTL, PWM etc.
- ◆ DC offset control variable with offset enable.
- ◆ 50 /600 outputs with step attenuator of maximum 20dB/40dB/ 60dB / Variable to 80db.
- ◆ Useful for testing and measurement in the laboratory and on the field.
- ◆ Designed to provide good quality signal while maintaining easy operability.

FUNCTION	MODEL FG 1M	MODEL FG 2M / 3M
Frequency Range	0.01 Hz to 1 MHz	0.02 Hz to 2 MHz/0.02 Hz to 2 MHz
Waveforms	Sine, Square, Triangle	
Accuracy	±1% plus 1 Digit	
Maximum Output Level	20 Vpp & 10V pp into 50 ohm	
Attenuator	0-60 dB in 2 steps	
Sine Wave Distortion	<1% typical < 100 KHz; 3 % > 100 KHz	
Square Wave Rise / Fall	< 100 nsec	
Sync Output	TTL Pulse	
VCG Input	0-2 VDC	0-2 VDC (10 : 1 sweep)
Output DC offset	0 - ±5V (OC)	
Pulse Duty Cycle	0- ±2.5 V into 50, 15 % to 85 % variable	
Pulse/ Ramp	Approximately 1/10 of normal at same setting	
50 MHz Counter	Yes	
AM/FM	Optional	Yes
Mains Voltage AC 50HZ	230V±10% optional 110V	

TECHNICAL SPECIFICATIONS

		MODEL		
Specifications	FG20M	FG10M [C based]	FG2M	FG1M
Frequency Range	0.1Hz to 20MHz	0.025Hz to 3MHz, 10MHz for sine	0.1Hz to 3MHz	0.1Hz to 1MHz
Range Selection	9 step switch with separate fine control	8 ranges using touch panel keyboard 7 x 3 matrix, 24 LEDs.	8 step switch with separate fine control	7 step switch with separate fine control
Waveforms	DC, Sine, Square, Triangle, TTL/CMOS, leveled square, Ramp, Pulse using duty cycle control	Sine, Square, Triangle, TTL/CMOS, Ramp, pulse O/P using duty cycle control, PWM O/P through BNC provided.	Sine, Square, Triangle, TTL/CMOS, PWM / Pulse O/P using duty cycle control. Skewed Sine/Triangle(Optional) DC Level.	Sine, Square, Triangle, TTL
Frequency Display	Display with accuracy within +1% upto 100KHz & 3%FS@ 1MHz, range LEDs for MHz, KHz and Hz	5 digit 7 segment/16x2 LCD display	Display with accuracy within +1% upto 100KHz & 3%FS@ 1MHz, range LEDs for MHz, KHz and Hz	
Amplitude Display	Not applicable	Display in Vpp with accuracy $\pm 3\%$	Display in Volts peak-peak with accuracy within +3% @ 30Vpp, LEDs to indicate V, > 30V overdrive LED.	
Sine O/P Truness	$\pm 0.35V$ (10V reference)			
Square O/P Symmetry	Less than $\pm 3\%$ (at 1KHz)			
Rise & Fall time	Less than 50 ns@ 1MHz	Less than 40 ns@ 1MHz	Less than 70 ns@ 1MHz	
Triangle O/P Linearity	99%@100KHz			
Ramp/Pulse O/P Duty Cycle	15% to 85% of cycle period		PWM using duty cycle control 15 to 85% - upto 1 MHz	Not applicable
Rise & Fall time TTL/CMOS O/P with enable	Less than 20 ns. at a separate BNC connector		Less than 100 ns. at a separate BNC connector	
Output level	H> = 4.13V, L<=0.26V	H> = 4.13V, L<=0.26V (TTL) H=14V, L=3V (CMOS) adjustable		
Output voltage	200 mV to 20Vpp settable through Amplitude control knob. beyond 1MHz 10Vpp with 50 ohm +termination	400 mV to 20Vpp settable through Amplitude control knob.	30Vpp max. variable upt -60db using control knob	
O/P Impedance	50 ohm, 600 ohm with separate BNC connector	50 ohm O/P		
Offset with enable	$\pm 10VDC$ (vari.) useful to generate clock for 10V CMOS logic		$\pm 10VDC$ (variable) with enable can be used as DC output if amplitude set to minimum	
Attenuator	-20dB/-40dB selection with attenuator enable		-20dB/-40dB/-60dB selection attenuator	
Freq. Mod. I/P voltage (external)	-3.0V to +3.0 V through BNC provided with max. freq. when -3V at BNC	+5V through BNC provided with maximum frequency when -5V at BNC	-1.5V to +1.0V through BNC provided with max. freq. when -1.5V at BNC	
Freq. variable range	-70% to +70% around center frequency set when no si	1 : 100 when frequency pot is set to minimum	-70% to +70% around center frequency set when no si	
Sweep/ Int. FM	Variable from 0.25Hz to 250 Hz	Variable from 0.025Hz to 6.5 Hz	Not Applicable	
Waveform	Sawtooth	Sawtooth (Linear and log)	Sine Triangle, Square	
Amplitude	-3.0V to +3.0V (fixed)	0 to 5Vpp	0 to 6Vpp variable	
Sweep O/P	Optionally made available on the rear BNC			
Amp.mod.(internal)	Not applicable	400 Hz Sine wave with amp. 6Vpp	Not Applicable	
Amp.mod. I/P voltage (ext).	-3.0V to +3.0V (fixed) through BNC provided	4Vpp (AM std.), 5Vpp (AM bal.) through BNC provided	-3.0V to +3.0V (fixed) through BNC provided	Not Applicable
Amp. control	100 : 1 attenuation with maximum amplitude when input +3V & ext. AM selected	Not Applicable	Supports ASK, AM Standard, . AM Balanced (Optional)	
Freq. Counter	Not Applicable	Int. / Ext. frequency counter Range : 3MHz (Int.), 100 MHz (ext.) Sensitivity : 300mVpp (upto 100MHz) Accuracy : Time base ± 1 count	Not Applicable	
General	Operating Temp : 0 to 50°C (Accuracy specified at 25°C), Power : 220/230VAC/SW $\pm 10\%$ 50Hz, 15VA, Weight : Approx. 1.9 Kg, Power Cord, BNC to BNC, BNC to crocodile cable and operating manual. Dimension : 255(W) x 270(D) x 98(H) - FG20M, 295(W) x 220(D) x 98(H) - Rest.			