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*Professional integrity at its Best!*

## FG506 / FG 513



With the FG 500 Series Put Two and Two Together and the result is a highly versatile Sweep/Function Generator with 100 MHz Intelligent Frequency Counter!

The FG 506 and FG 513 each provide two powerful instruments in one package for the price of one: A 6 or 13 MHz sweep/function generator and intelligent 100 MHz frequency counter. The FG-500 series incorporates concurrent engineering design with unsurpassed innovation to ensure high quality and reliability. The microprocessor based instruments provide menu-driven operations for setting of waveform outputs and operation modes. Additionally, a bright 16 character by 2 line LCD display presents clear and unambiguous readout of generation, and frequency.

### Features

- Sine, Square, Triangle, Ramp, Synchronous Clock and DC Outputs
- Frequency Ranges
  - 2Hz to 6MHz (FG 506)
  - 2Hz to 13MHz (FG 513)
- Synchronous Clock Frequencies
  - 2Hz to 12MHz (FG 506)
  - 2Hz to 24MHz (FG 513)
- 6½ Digit Frequency Counter with Attenuation (x1, x20) and low pass filter
- Linear and Logarithmic Sweeps
- Adjustable Symmetry/Duty Cycle
- Continuous, Triggered, Gated, Clock & External Frequency Modes
- Period or Frequency Readout
- TCXO Crystal Stabilized Time Base (optional)

### Advanced Features

This series offers a variety of modes and waveforms that will deliver maximum benefits and applications. Duty Cycle/Symmetry adjustment modifies a waveform from 10% to 90%; TTL outputs may either inverted or non-inverted, at frequencies as high as 12 MHz for the FG506 and 24 MHz for the FG 513; Amplitude can be attenuated from 0 to 40 dB at 3 selectable levels of 0, 20 or 40dB; Linear and Logarithmic Sweeps have variable rates and widths - sweep width in linear or logarithmic is up to 100:1 and rate is adjustable from 5 sec to 10 msec.

### Intelligent Frequency Counter

The FG 500 Series of sweep/function generators incorporate a 6 1/2 digit, 100 MHz intelligent frequency counter for added flexibility (reads frequencies from 5Hz to 100MHz). A built-in low pass filter (LPF) gives an accurate measurement of a low slew rate triangle signal, and reduces interference of noise, spikes, glitches and prevents false triggering of the frequency counter.

### TCXO-500: Temperature Compensated Crystal Oscillator

The TCXO Option stabilizes the frequency counter's 10MHz time base via a built-in temperature compensated circuit. This feature dramatically improves aging rate, stability and temperature coefficient of the time base. This is an indispensable selection if the frequency counter is utilized in calibration purposes.

### Specifications

#### FUNCTION GENERATORS: FG-506 AND FG-513

Waveforms	Sine, Square, Triangle, Ramp, TTL Pulse, DC
Range	FG-506: 2Hz to 6MHz; FG-513: 2Hz to 13 MHz
Ranges of Frequency	2-20, 20-200, 200-2K, 2K-20K, 20K-200K, 200K-2M, 2M-6M(FG-506), 2M-13M (FG-513)
Attenuation	0db, 20dB, 40dB; variable 0 to 20dB
Resolution	4 Digits
Impedance	50 ohms $\pm$ 2%
Amplitude	-10Vp to + 10Vp into open circuit; -5Vp to +5Vp into 50 ohms
Frequency Accuracy	$\pm$ 0.01% up to 100 KHz
Square Wave	Rise or Fall Time: <25ns at full amplitude (50 ohms)*
	Aberrations: <10% of p-p at full amplitude (50 ohms)*
Triange Linearity Error	<1% up to 100KHz
Sine Wave Distortion	<1% when f<100KHz; <30dB when f>100KHz;25dB when f>2MHz
Sync Output (TTL Pulse)	Source Impedance: 50 ohms $\pm$ 2%
	Frequency Range: 2Hz to 12MHz (FG-506); 2Hz to 24MHz (FG-513)
Symmetry / Duty Cycle	10% to 90%; up to 1 MHz
DC Offset	-10V to +10V into open circuit; -5V to +5V into 50 ohms
Sweep	Width: Lin or Log Up to 100:1
	Rate: 0.2Hz - 100Hz (5 sec - 10msec)
VCO Characteristics	Input Impedance:10K ohms ( $\pm$ 5%)
	Frequency Range: 0 to 10V input causes 1:100 frequency change
Trigger In (TTL Pulse)	Signal Pulse Width: 50 nsec minimum
	Repetition Rate: 5 MHz maximum

**FREQUENCY COUNTER & TCXO**

RANGE	Frequency: 5Hz to 100 MHz
	Period: 0.2 sec to 10nsec
Resolution	6 - ½ digits
Accuracy	$\pm$ 1 Count + time base error
Time Bass	10MHz +/- 10ppm ( 0° to 50°C )
Attenuation	x1, x20 nominal
Sensitivity	50mVrms sinewave to 50MHz; 100mVrms sinewave to 100MHz
TCXO	Supply Voltage: $\leq$ ±0.5ppm for $\pm$ 5%variation; Aging Rate: 1ppm/yr. Frequency: 10MHz; Temp: +1ppm/°C, 0-40°C

**GENERAL**

Weight	6lb. 15.5 ozs.;3.5 kgs
Dimensions	8.66"(W) x 3.39"(H) x 11.81"(L); 200mm x 86mm x 300mm
Operating Temp.	0° to 40°C
Storage Temp.	-40°C to 55°C
Power	115/220VAC; 60/50Hz

\* Applicable when load impedance is 50 ohms



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