

Data Sheet

FG3C Function Generator



Sweep function generator with built-in frequency counter

This function generator provide a substantial array of output capabilities. It's extremely reliable for heavy day-to-day usage in electronic troubleshooting, production manufacturing test or as a breadboarding signal source.

The FG3C Sweep/function generator provides sine, square, triangle waves and TL and CMOS pulse outputs from 0.3 to 3 MHz. A built-in frequency counter with 6 digit display accurately shows frequency setting. Or use as stand-alone frequency counter for external signals from 5 to 150 MHz. Control the linear or logarithmic sweep of any of the selected signal outputs internally or with user provided external modulating signal. Produce TTL or CMOS pulses with the duty cycle function. Switchable 20dB attenuator allows for low level signal output.

- Square, Triangle, Sine waves, TTL and CMOS pulse outputs
- 0.3 Hz to 3 MHz range
- Linear or logarithmic sweep
- Amplitude or frequency modulation
- Built-in 150 MHz frequency counter with 6 digit LED display
- Voltage controlled frequency (VCF) input
- Two switchable 20 dB attenuators
- Signal polarity invert button
- Variable duty-cycle
- Variable dc V offset
- Includes line cords and fuses for either 117 V or 220 V operation

Specifications (at 23 °C; ≤ 70 % R.H.)

Function	Range	Accuracy
Main		
Frequency	0.3 Hz to 3 MHz (7 ranges)	± 5 %, + 1 Hz (@ 3.0 position)
Amplitude	> 10 Vpp (into 50 Ω load)	
Impedance	50 Ω ± 10 %	
Attenuator (knob)	-20 dB	± 1 dB
Attenuator (button)	-20 dB	± 1 dB
DC Offset	< -5 V to > +5 V (into 50 Ω load)	
Duty-Cycle Control	80 %:20 %:80 % to 1 MHz; continuously variable	
Sine Wave		
Distortion	≤ 1 %, 0.3 Hz to 200 kHz THD < 35 dB below fundamental in all ranges (Specification applied from MAX. to 1/10 level)	
Flatness	< 0.3 dB, 0.3 Hz to 300 kHz; < 0.5 dB, 300 kHz to 3 MHz	
Triangle Wave		
Linear	≥ 98 %, 0.3 Hz to 100 kHz; ≥ 95 %, 100 kHz to 3 MHz	
Square Wave		
Symmetry	± 2 % 0.3 Hz to 100 kHz	
Rise or Fall Time	< 100 ns at maximum output (into 50 Ω load)	
CMOS Output		
Level	4 Vpp ± 1 Vpp to 14.5 Vpp ± 0.5 Vpp adjustable	
Rise or Fall Time	≤ 120 ns	
TTL Output		
Level	≥ 3 Vpp	
Fan Out	20 TTL load	
Rise or Fall Time	≤ 25 ns	
VCF		
Input Voltage	-10 V to + 10 V, ± 1 V (100:1)	
Input Impedance	10 kΩ ± 10 %	
GCV		
Output Voltage	0 to 2 V dc, relative to frequency setting of range	



Specifications *cont.*

Function	Range	Accuracy
Sweep Operation		
Sweep/Manual	Switch selector	
Sweep/Rate	100:1 ratio maximum, adjustable	
Sweep/Time	0.5 sec. to 30 sec. adjustable	
Sweep/Mode	Lin./Log. switch selector	
Amplitude Modulation		
Depth	0 to 100 %	
Modulation Frequency	400 Hz (INT), DC to 1 MHz (EXT)	
Carrier BW	100 Hz to 3 MHz (-3 dB)	
EXT Sensitivity	≤ 10 Vpp for 100 % modulation	
Frequency Modulation		
Deviation	0 to ± 5 %	
Modulation Frequency	400 Hz (INT), dc to 20 kHz (EXT)	
EXT Sensitivity	≤ 10 Vpp for 10 % modulation	
Frequency Counter		
Internal/External	Switch Selector	
Range	0.3 Hz to 3 Mz Internal 5 Hz to 150 MHz External	Time base accuracy ±1 count
Time Base	± 20 ppm (23 °C, ± 3 °C), after 30 min. warm-up	
Resolution	10 nHz (1 Hz range); 1 kHz (100 MHz range)	
Input Impedance	1 MΩ /150 pF	
Sensitivity	≤ 35 mVrms (5 Hz to 100 MHz) ≤ 45 mVrms (100 MHz to 150 MHz)	

General Specifications

Display	6 digit; green LED, 7.6 mm (0.3 in) high
Power Source	115 V ac or 230 V ac, ± 15 %; 50/60 Hz
Operating Environment	For indoor use, altitude up to 2000 M., 0 °C to 40 °C, 80 % R.H.
Storage Environment	-10 °C to 70 °C @ 70 % R.H.
Dimensions (W x H x D)	243 mm x 93 mm x 292 mm
Weight	2.2 kgs (4.8 lbs)
Safety Approvals	EN61010-1, Cat. II, Pollution degree 2
Warranty	One-year

Included Accessories

Test cables, spare fuses, 117 V cord, 220 V line cord and users manual.

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