

FG 708S(8MHz)

FG 710F(10MHz)

FG 720F(20MHz)

DDS Function Generator

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MOTTECH INSTRUMENTS



CE

Key Features

- ◆ Direct Digital Synthesis Multi-Function Generator
- ◆ Ultra Low Distortion and Low Noise even in 1mV peak Signal Output
- ◆ Digital Setting of Linear and Log Sweep Function(Sweep Step 0.1Hz)
- ◆ Rotary Push Trigger and Gate Function
- ◆ Output Frequency / Amplitude / DC offset / Pulse Width Monitoring
- ◆ Short Circuit Protection & Input Voltage Protection $\leq 20V_{peak}$
- ◆ FSK and PSK Modulation
- ◆ **New!** External and Internal AM / FM Modulation(FG 710F/720F)
- ◆ **New!** Digital Setting Pulse Generator with Duty Cycle Display 0.1%~99.9% (FG 710F/720F)
- ◆ **New!** 20KHz Ramp Up and Ramp Down Function(FG 710F/720F)
- ◆ **New!** Build in 100MHz Intelligent Frequency Counter and External Duty Cycle Measurement(FG 710F/720F)

Output Waveform Frequency Range	Sine, Square, Sync Output, Pulse : 100mHz ~ 8MHz	Sine, Square, Sync Output, Pulse : 100mHz ~ 10M/20MHz
	Triangle : 100mHz ~ 1MHz	Triangle : 100mHz ~ 1MHz
	DC : ±10V at open-circuit, ±5V at 50Ω load	Ramp Up, Ramp Down : 100mHz ~ 20KHz DC : ±10V at open-circuit, ±5V at 50Ω load
Frequency Resolution	100mHz or 6 Digits Display	
Output Impedance	50Ω ± 5%	
Amplitude	1mV to 20Vp-p (open-circuit), 0.5mV to 10Vp-p (into 50Ω load)	
Resolution	3 Digits, 1mV min (Depend on Attenuation)	
Accuracy	Typical 1%, test at 1KHz 9Vp-p Sine @ 50Ω load	
Output Attenuation	0 db, -20 db, -40 db, -60 db	
FUNC_OUT Self Protection	FUNC_OUT Short Circuit Protection	Reverse Voltage Protection up to 20 Vpeak
DC_Offset and DC Output	±10V at open-circuit, ±5V at 50Ω load	
Resolution	3 Digits, ±1mV min (Depend on Attenuation)	
Accuracy	1% ± 5 mV at DC Mode	
Sine Wave Harmonic Distortion	DC to 100KHz < -55 dBc typical	DC to 100KHz < -55 dBc typical
	100KHz to 1MHz < -45 dBc typical	100KHz to 1MHz < -45 dBc typical
	1MHz to 8MHz < -35 dBc typical	1MHz to 10M/20MHz < -35 dBc typical
Spurious(non harmonic)	DC to 1MHz < -55 dBc typical	
Total Harmonic Distortion	DC to 100KHz < 0.3%	
Square Wave	Rise / Fall time : ≤ 12nS for 10Vpp @ 50Ω load	Overshoot < 5% of Vp for 10Vpp @ 50Ω load
Pulse Generator	Frequency Range : 200mHz to 8MHz	Frequency Range : 200mHz to 1KHz, 1KHz to 200KHz
	Amplitude : 0 to 10V / 0 to -10V / ±10V	Amplitude : 0 to 10V / 0 to -10V / ±10V
	Duty Cycle : 200mHz to 5MHz : 20% ~ 80%	Duty Cycle : 200mHz to 1KHz : 0.1% ~ 99.9%
	: 5MHz to 8MHz : 40% ~ 60%	: 1KHz to 200KHz : (*)
Triangle Wave Linearity	99% up to 100KHz	
Sweep (Linear / Logarithmic)	Start Frequency, Stop Frequency, and Sweep Step, Time Ratio Setting	Sweep Type: Up/Down, Up-Down
Sync Output	Output Level : Low Level ≤ 0.6V @ 50Ω High Level ≥ 1V @ 50Ω	Output Level : Low Level ≤ 0.6V @ 50Ω High Level ≥ 1V @ 50Ω
	Frequency Range : 100mHz ~ 8MHz Output Impedance : 50Ω	Frequency Range : 100mHz ~ 10M/20MHz Output Impedance : 50Ω

Modulation Characteristics

FM		Modulation : Any Internal Waveform
		Frequency : 100mHz to 10KHz
		Peak Deviation : 4~5 % of Carrier Frequency Max Modulation Source Internal : 400 / 1000Hz Sine Waveform External : Any Waveform @ 5.5 Vpeak Max
AM		Carrier : Sine, Triangle
		Modulation Source Internal : 400 / 1000Hz Sine Waveform External : Any Waveform @ 5.5 Vpeak Max
		Modulation Depth : 0% to 100%
FSK	Function : Sine or Square or Triangle	Function : Sine or Square or Triangle
	Frequency Range : 100mHz to 8MHz	Frequency Range : 100mHz to 10M/20MHz
	Internal Rate : 400 / 1000Hz	Internal Rate : 400 / 1000Hz
	Source : Internal / External	Source : Internal / External
PSK	Function : Sine or Square or Triangle	Function : Sine or Square or Triangle
	Frequency Range : 100mHz to 8MHz	Frequency Range : 100mHz to 10M/20MHz
	Internal Rate : 400 / 1000Hz	Internal Rate : 400 / 1000Hz
	Phase Setting : 0.0000 to 360.0 Degree	Phase Setting : 0.0000 to 360.0 Degree
	Source : Internal / External	Source : Internal / External

Trigger/Gate

Trigger	Trigger Source : Manual Trigger (Rotary Push Trigger) / External Trigger	Main Frequency Setting Range : 100mHz to 100KHz
Gate	Gate Source : Manual Gate (Rotary Push Trigger) / External Gate	Gate Source : Manual Gate (Rotary Push Trigger) / External Gate
	Main Frequency Setting Range : 100mHz to 8MHz	Main Frequency Setting Range : 100mHz to 10M/20MHz

Frequency Counter

Measuring Range Accuracy		Frequency Range : 2Hz to 100MHz, Accuracy : Time Base Error ± 5 counts
Resolution		7 Digits or (99.9999)
Low Pass Filter (LPF)		Manual On
Time Base Stability		50MHz ± 25 ppm (23.5 ± 5°C), Optional TCXO Time Base Available
Input Level Attenuation		0dB, -20dB
Sensitivity		Standard: 2Hz~50MHz / -20dbm @50Ω Typical
		50MHz~80MHz / -10dbm @50Ω Typical
		80MHz~100MHz / -5dbm @50Ω Typical

General Characteristics

Power Source	AC 115 V / 230V (inner switch able) ±10%, 50 / 60Hz	
Operation Environment	0°C ~ 40°C, relative humidity below to 80%	Storage Temperature : - 20°C ~ 70°C
Dimension	235mm(W)X95mm(H)X280mm(D)	
Weight	3 kg	
Accessories	Instruction manual, AC power cord.	

$$* : (1us \times Fset) \times 100\% \sim [1 - (1us \times Fset)] \times 100\%$$



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Specifications subject to change without notice.