

# Function Generators

## FG Series

0% to 100% Duty / Pulse mode



RS-232C  
STANDARD  
GP-IB  
STANDARD

### FG-281 Function Generator

- Generates Sine, Triangle, Square, Pulse, Ramp wave, and DC.
- Wide band output from 0.01Hz to 15MHz (Sine, Square wave).
- ±50ppm High Frequency Accuracy with Direct Digital Synthesizer.
- Amplitude and Frequency display with Vacuum Fluorescent Display.
- Ten-key setting for amplitude and frequency, and continuously switch waveforms.
- 0.1% step and 0 to 100% Duty control (Pulse and Ramp wave).
- +10V to -10V Offset control (Open circuit).
- Linear and Log sweep functions, and Burst function.
- Full remote control with GP-IB and RS-232C as standard.
- 9-point Presetting function
- Pulse Motor Control function by factory option at shipment.

DDS



### FG-274 Function Generator

- Output Waveforms of Sine, Square, Triangle and Pulse.
- The design of DDS and FPGA technology provide high quality waveforms.
- High frequency stability and accuracy: 20ppm.
- Low Distortion at -55dBc.
- Wide output frequency range: 4MHz
- Maximum frequency resolution of full range: 100mHz.
- TTL/CMOS output
- Variable DC offset control
- Variable Duty ratio control
- Output overload protection
- Store/Recall function

## Specifications

	FG-281	FG-274
Main Output		
Output waveform	Sine, Square, Triangle, Pulse, Ramp, DC	Sine, Square, Triangle
Frequency range	0.01Hz to 15MHz (Sine, Square) 0.01 to 100kHz (Triangle, Pulse, Ramp)	0.1Hz to 4MHz (Sine, Square) 0.1Hz to 1MHz (Triangle)
Frequency resolution	0.01Hz or 5digits	0.1Hz
Accuracy	±50ppm	±20ppm
Amplitude range at 50Ω termination	50mV(p-p) to 10V(p-p)	10V(p-p)
Setting resolution	3digit (Waveform 0.1mV, DC:1mV) (50.0mV to 10.0V)	-----
Amplitude accuracy at 50Ω termination	±1% (Sine), ±2% (Triangle, Pulse), ±3% (Square)	
Output impedance	50Ω	
Attenuator	-----	50Ω
DC offset range at 50Ω termination	±5V or more	-20dB x 2 ±5V or more
Duty ratio	20% to 80% (Square, 5MHz or less) 40% to 60% (Square, 5MHz to 15MHz)/Resolution 0.1% 0.0% to 100.0% (Pulse, Ramp)/Resolution 1%	20% to 80% 1Hz to 1MHz (Square only) / Resolution 1% Not available Not available
Display	16 digit fluorescence indication pipe	9 digit LED
Sine waveform		
Distortion	≤ -50dBc, 0.1Hz to 100kHz ≤ -45dBc, 100kHz to 1MHz ≤ -35dBc, 1MHz to 15MHz	≤ -55dBc, 0.1Hz to 200kHz ≤ -40dBc, 0.2Hz to 4MHz (At max. output, ATT OFF, TTL/CMOS OFF)
Flatness	±1%, 0.01Hz to 100kHz ±2%, 100kHz to 1MHz ±3%, 1MHz to 15MHz (1kHz reference)	±0.3dB, 0.1Hz to 1MHz ±2.0dB, 1MHz to 4MHz (At max. output, 1kHz reference)
Triangle waveform		
Linearity	-----	2% or less (0.1Hz to 100kHz), 5% or less (100kHz to 1MHz)
Square waveform		
Over shoot / Symmetry	±2%	±1%±4ns (0.1Hz to 100kHz)
Rise / Fall time	≤ 20ns (1MHz or less, at max. output, 50Ω termination)	≤ 25ns (at max. output, 50Ω termination)
CMOS output / TTL output		
Level	Not available	CMOS :4V±1V(p-p) to 14.5V±1V(p-p), TTL :3V(p-p) or more
Rise / Fall time	Not available	CMOS :120ns or less, TTL :25ns or less
Operation mode		
	Continuous (CONT), Trigger (TRIG), Gate (GATE)	Continuous only
Sweep		
Sweep mode	Linear, Log, frequency up or down	Not available
Sweep time	1ms to 500s	Not available
Burst		
Burst setting number	ON BURST/OFF BURST: 1 to 65,536	Not available
Misc		
Power source	AC100V±10% or AC220V/240V±10%, 50Hz/60Hz	AC100V±10% or AC115V/230V±10%, 50/60Hz
Power consumption	55VA	21VA(17W)
Dimensions	210(W)×99(H)×353(D)mm	266(W)×97(H)×293(D)mm
Weight	approx. 4kg	approx. 3.1kg
Accessories	Instruction manual × 1, AC power cable × 1	Instruction manual × 1, AC power cable × 1, BNC-ALLIGATOR cable × 1