FEATURES

- **Sine, Square, Triangular, Noise and Arbitrary waveforms**

- **0.1 Hz resolution of Sine, Square and Triangular waveforms**

- **20 MSa/s sampling rate, 10 bit vertical resolution and 4 Kpts memory**

- **USB device interface for remote control and waveform editing**

- **PC arbitrary waveform editing software AM/FM/FSK Modulation, Sweep and Freq**

RS PRO AFG-21025 Function Generator 25MHz (Sinewave) USB

RS Stock No.: 124-0226

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

RS Pro AFG-21000/AFG-21100 AFGs use direct digital synthesis (DDS) to generate signals at precise frequencies through a unique memory access and clocking mechanism. They offer an accurate and affordable signal source covering the output of Sine, Square (Pulse), Ramp (Triangle), Noise and Arbitrary waveforms. The 20 MSa/s sampling rate, 10 bit vertical resolution and 4 Kpts memory of the AFG-21000/AFG-21100 Series provide users with a flexible environment in which specific waveform output can be created as required. The application range of these user-friendly instruments is greatly extended by their 0.1 Hz resolution of Sine, Square and Triangle waveforms and the 1% ~ 99% adjustable duty cycle of the Square (Pulse) waveform. The individual AFG21000/AFG-21100 models are differentiated by frequency band and the AFG-21100 models have the additional features of AM/FM/FSK Modulation, Sweep and Frequency Counter.

General Specifications

Series	AFG-21100 Series
Model Number	AFG-21025
Waveform Types	Sine, Square, Ramp, Noise, Arbitrary Waveform
Display Type	LCD
Frequency Range (Square, Pulse and Arbitrary Waveform)	0.1Hz~Max Frequency
Time Base Accuracy	±20ppm
Input Impedance	1KΩ /1pf
Output Impedance	50Ω
TTL Output Level	1KΩ
Digital Frequency	Yes
Digital Amplitude and Offset	Yes
Internal Linear and Log Sweep	Yes
Internal and External Amplitude Modulation	Yes
STORE/RECALL	10 Groups of Setting Memories
Interface Type	USB(Device)

Arbitrary Function

Sample Rate	20MSa/s
Repetition Rate	10MHz
Waveform Length	4k point
Amplitude Resolution	10 bit

Frequency Characteristics

Signal Type	Range	Resolution	Accuracy
Sine	0.1Hz~25MH	0.1Hz	±20ppm
Square	0.1Hz~25MH	0.1Hz	±20ppm
Ramp (Triangular)	0.1Hz ~ 1MHz	0.1Hz	±20ppm

Output Characteristics

Amplitude	**Range**	1mVpp~10Vpp(into 50), 0.1Hz~20MHz; 2mVpp~20Vpp(open-circuit), 0.1Hz~20MHz Ω 1mVpp~5Vpp(into 50), 20MHz~25MHz; 2mVpp~10 pp(open-circuit), 20MHz~25MH
	Accuracy	±2% of setting ±1mVpp;(at 1kHz,>10mVpp)
	Resolution	0.1mV or 3digits
	Flatness	±1%(0.1dB) 100kHz; ±3%(0.3dB) 5MHz; ±4%(0.4dB) 12MHz; ±20%(2dB) 20MHz; ±5%(0.4dB) 25MHz; (sine wave relative to 1 kHz)
	Units	Vpp, Vrms, dBm
Offset	**Range**	±5Vpk ac+dc(into 50); ±10Vpk ac+dc(open circuit); ±2.5Vpk ac+dc(into 50) for Ω Ω 20MHz~25MHz; ±5Vpk ac+dc(open circuit) for 20MHz~25MHz
	Accuracy	2% of setting + 5mV+ 0.5% of amplitude
Waveform Output	**Impedance**	50ohm typical (fixed); >300k (output disabled)
	Protection	Short-circuit protected ; Overload relay automatically disables main output
Sync Output	**Level**	TTL-compatible into >1kΩ
	Impedance	50Ω nominal
	Rise or Fall Time	≤ 25ns

Sine Wave Characteristics

Harmonic Distortion	–55 dBc DC ~ 200kHz, Ampl > 0.1Vpp; –50 dBc 200kHz ~ 1MHz, Ampl > 0.1Vpp
	–35 dBc 1MHz ~ 5MHz, Ampl > 0.1Vpp; –30 dBc 5MHz ~ 25MHz, Ampl > 0.1Vpp

Square Wave Characteristics

Rise/Fall Time	≤ 25ns at maximum output (into 50Ohm load)
Overshoot	< 5%
Asymmetry	1% of period+1 ns
Variable Duty Cycle	1%~99% 100kHz ; 20.0%~80.0% 5MHz ; 40.0%~60.0% 10MHz ; 50% 25MHz (1% Resolution for full Frequency Range)

Ramp Characteristics

Linearity	< 0.1% of peak output
Variable Symmetry	0% to 100% (0.1% Resolution)

Modulation Characteristics

Parameters	AM	FM
Carrier Waveforms	Sine, Square, Triangle	Sine, Square, Triangle
Modulating Waveforms	Sine, Square, Triangle	Sine, Square, Triangle
Modulating Frequency	2 mHz~20 kHz (Int); DC~20KHz (Ext)	2 mHz~20 kHz (Int); DC~20KHz (Ext)
Depth	0% to 120.0%	-
Deviation	-	DC to Max Frequency
Source	Internal/External	Internal/External

Sweep Characteristics

Waveforms	Sine, Square, Triangle
Type	Linear or Logarithmic
Start/Stop Frequency	0.1Hz to Max Frequency
Sweep Time	1ms to 500s
Source	Internal / External

FSK Characteristics

Carrier Waveforms	Sine, Square, Triangle
Modulating Waveforms	50% duty cycle square
Internal Rate	2mHz to 20kHz
Modulation Rate	2mHz to 100kHz (INT); DC to 100kHz (Ext)
Frequency Range	0.1Hz to Maximum Frequency
Source	Internal / External

Frequency Counter

Range	5Hz to 150MHz
Accuracy	Time Base accuracy ± 1count
Time base	±20ppm (23 °C ±5 °C) after 30minutes warm up
Resolution	100nHz for 1Hz, 0.1Hz for 100MHz
Input Impedance	1K /1pf
Sensitivity	35mVrms to 30Vms (5Hz~150MHz)

Electrical Specifications

Input Voltage	AC100 240V
Power Consumption	25VA
Safety Category Level and	CAT

Mechanical Specifications

Dimensions	266mm×107mm×293mm
Width	266mm
Length	107mm
Height	293mm
Weight	2.5kg

Operation Environment Specifications

Altitude	2000meters
Relative Humidity	80%
Operating Temperature Range	0°C - 40°C
Storage Temperature Range	-10°C - 70°C

Approvals

Compliance/Certifications	CE

Stock No. :	Model :				
123-3529	AFG-21005	124-0226	AFG-21025	123-3532	AFG-21112
123-3530	AFG-21012	123-3531	AFG-21105	123-3533	AFG-21125