

Function Generator SG-4100 Series



10mHz - 15MHz 1ch
SG-4105



10mHz - 5MHz 1ch
SG-4104

- Wide oscillation bandwidth from 10mHz to 15MHz (SG-4105)
- High accuracy (50ppm: SG-4105, SG-4104) and high definition waveform output by employing DDS (Direct Digital Synthesizer) system
- Max 20Vp-p (Output terminal open) (SG-4105)
- 0.0% ~ 100.0% duty control/ Up to 65,536 Burst waveforms
- Offset control +10V ~ -10V (output terminal open)
- Waveform outputs are connected continuously when vary the frequency
- Linear / Log sweep function
- Simultaneous display of the frequency and output voltage
- Easy operation (set performance can be checked at a glance)
- PMC option (SG-506: SG-4105) best suited for evaluating pulse motor control
- Provides Small-amplitude on Large-offset

PMC function*(Factory option)

Pulse motor control function SG-506 (SG-4105)

Pulse motor control function

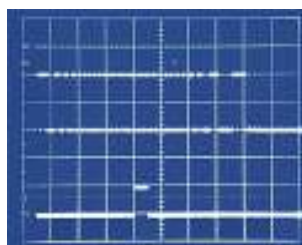
PMC option function controls pulse motor. Pulse motor acceleration or braking controls need to be reviewed not only by position control, but also under loaded condition. The PMC option simplifies the evaluation.

Pulse outputs in open collector (50V) are output from rear panel with PMC option.

Common motor driver circuit connected with PMC.

*PMC (Pulse Motor Control) is coined word by IWATSU TEST INSTRUMENT CORPORATION.

(Order any factory options when ordering the main unit. Additional orders after the delivery of the main unit require a separate fee.)



Upper waveform shows drive pulse for pulse motor, lower waveform shows sensor input waveform. After reaching maximum frequency while specified accelerating period, starts braking by sensor input signal. Then stops at specified pulse counts.

Boost Amp SG-300

A useful drive amp that boosts signal generator output at 1MHz full power band.

The SG-300 is an amplifier for converting function generator output.

This amplifire can be used for a wide range of purposes, including the development of inverters and other mechatronic equipment.

The amplifire has a low impedance (Lo Ω) output, which enables it to be used with low power loss even driving low impedance loads.

It also supports amplitude modulation only at the positive side or only at the negative side, which enables zero level adjustment.

SG-300 Specifications

Maximum Voltage	24Vp-p (with 50 Ω loads) / 48Vp-p (without any load)
Maximum Current	DC or Peak 240mA (with 50 Ω loads) / Continuous DC or Peak 300mA (with Lo Ω output)
Full Power Band	1MHz (with a 50 Ω load and 24Vp-p output)



RS-USB Converter SC-525

For use with the SG-4105

- The cable for connecting the RS-232 measurement unit to a personal computer's USB port.
- Overall length approximately 85cm.

* Can also be used with the VOAC 7500H series, SC-7200H series.



SG-4100 Series Specifications

Model		SG-4105	SG-4104	
Output waveform		Sine wave, square wave, pulse wave, triangle wave, ramp wave, DC output		
Output channels		1		
Output impedance		50 Ω fixed		
Frequency	Sine, square	10MHz-15MHz	10MHz-5MHz	
	Pulse	10MHz-100kHz(without DC)		
	Others	10MHz-100kHz (without DC)		
	Accuracy	± 50ppm		
	Resolution	10MHz or 5 digits		
Amplitude	Range	50mVp-p to 10Vp-p (50 Ω) 100mVp-p to 20Vp-p (open)		
	Accuracy (sine 1kHz)	± 1%		
	Resolution	Except for DC waveform output : 0.1mV or 3 digits(50.0mV to 10.0V) For DC waveform output : 1mV or 3digits(1mV to 5.00V)		
	Flatness(reference to 1kHz)	Sine: up to 100kHz ± 1%	± 2%	
		Over 100kHz-1MHz ± 2%	± 3%	
		Over 1MHz ± 3%	± 5%	
		Square: up to 100kHz ± 3%, over 100kHz ± 5% Triangle, pulse: ± 3% SLOW mode (all waveforms)		
Mode		CONT, TRIG, GATE		
Offset	Range	± 5V (waveform + DC offset less than 5.025V)		
	Resolution	1mV or 3digits		
	Accuracy	± 1% setting value ± 5mV (at DC output)		
Duty	Square wave	40-60% (more than 5MHz) 20-80% (5MHz or less)	20-80%	
	Others	0-100% (pulse wave, ramp wave)		
Sine wave spectral purity *Amplitude at 10Vp-p	Harmonic distortion *	Up to 100kHz -50dBc Over 100kHz-1MHz -45dBc Over 1MHz-15MHz -35dBc (SG-4104: up to 5MHz)		
		100kHz-1MHz -60dBc 1MHz-10MHz -50dBc 10MHz-15MHz -40dBc (SG-4104: up to 5MHz)		
	Total harmonic distortion	0.10% at 1Vp-p or more, less than 100kHz 0.30% at less than 1Vp-p, 100kHz		
Step response	Overshoot	Square 2% (less than 1MHz) Pulse 2% (1µs or more FWHM *) *Full Width at Half Maximum		
Rise, Fall time (10%-90%)	Square	20ns or less	35ns or less	
	Pulse	300ns or less		
SWEEP	Curve	Linear/Log		
	TYPE	CONTINUOUS: Oscillation continues at STOP frequency STOP: Oscillation stops after STOP frequency		
	Mode	CONT, GATE, TRIG		
	SWEEP TIME	1ms-500s		
	Sync out	SWEEP SYNC, SWEEP MARKER		
BURST	Number	65536		
	Mode	CONT, TRIG selectable ON counts or OFF counts		
PHASE	Range	± 359.9°		
	Resolution	0.1°		
Pulse motor modulation (available only when PMC option is installed) BG-506	Oscillation frequency	10MHz-100kHz		
	Waveform	Pulse		
	Control	CW(one-way control)		
	Output	Open collector 1 output		
	Sensor input	IN1, IN2		
	Mode	LIN-A.: After acceleration, braking by sensor input LIN-B: After acceleration, braking by specified pulse counts		
	Acceleration, braking curve	Linear		
	Pulse counts	16777216		
Acceleration, braking time	1ms-45s			
TRIG	Level, polarity	TTL level (H: 2.1V min., L: 0.9V max.)		
	Inputs	1		
	Input impedance	1kΩ or more		
	Minimum pulse width	100ns		
TRIG delay	Normal mode	Square: 5% of period +350ns or less Pulse: Period/16384 + 800ns or less		
Setup memory	9			
Remote control	GPIO, RS-232		—	
Power	Voltage	AC100V± 10% AC110V, 220V, 240V (factory option)		
	Frequency	50Hz, 60Hz, 400Hz		
	Consumption	Approx. 55VA		
Dimensions	Approx. 210W x 99H x 353L mm			
Weight	Approx. 4kg			
Environment conditions	Storage	-20°C to +60°C/90%R.H. or less		
	Operating	0°C to +40°C/85%R.H. or less		
Warm up time	30 min. or more			
Accessories	Power cable (1), operation manual (1)			
Factory option	PMC: SG-506		—	

* Waveform selection and frequency for CH1 and CH2 are the same.
SWEEP, modulation and BANK functions are disabled.