

Function Generator FG-8005B (2Hz – 2 MHz)

Introduction

The Function Generator Model FG8005B is a low cost instrument capable of providing sine, square, triangle and pulse waveforms from 2 Hz to 2 MHz in six decade ranges. It has a maximum of 20 volts peak to peak signal amplitude (10V p-p into 50 ohms). It includes a variable DC offset which can also help in getting true positive and true negative waveforms.

An LCD display, 16 character by 1 line, frequency readout with direct display in Hz, KHz, or MHz provides excellent accuracy and ease of operation. The output waveform type is also displayed on the LCD. It has a linear frequency scale, constant signal amplitude with the output signal symmetric about zero.



At the core of the instrument is a Direct Digital Synthesizer based IC, with crystal oscillator which gives exceptional frequency accuracy. This design gives the instrument a number of advantages as compared to a conventional Function generator, with frequency tuning capacitors covering different frequency ranges. Since there are no tuning capacitors, frequency drift due to component ageing and temperature variations are avoided. The added advantages of the DDS based digital design are low phase noise and good spurious performance. The sine wave distortion levels are also much lower. This gives the user confidence of achieving accurate results while testing a wide range of circuits.

The front panel controls are all pushbuttons and knobs, and ergonomically arranged for ease of operation. The instrument is compact, lightweight and housed in a rugged metal cabinet. The internal layout and mounting of controls has been so designed as to provide maximum accessibility to various components.

Specifications:

Parameter	Value
Output Waveforms	Sine, Square, Triangle and Pulse
Frequency Readout	3½ digits with direct display in Hz, KHz, or MHz
Output	Socket – BNC Amplitude – 20 V p-p with 50 ohms impedance
Frequency Range	2Hz to 2MHz, selected in 6 decade steps. Variable control between steps. 2 Hz to 0.5 MHz for triangle
Accuracy	4% - 2 Hz to 5 Hz, 2% - 5 Hz To 10 Hz, 0.8% - 10 Hz to 100 Hz, 0.1% >100 Hz
DC Offset	±5 V continuously adjustable with peak signal amplitude of ±12.5V at 0 dB, attenuated by step attenuator
Attenuator Switches	0 dB, 20dB, 40dB, 60dB.
Level Flatness	±2% from 2 Hz to 200KHz
Sine Wave Distortion	0.6% maximum at 20 V p-p 0.3% maximum at 2 V p-p (Fo = 10 KHz)
Square/Pulse Rise & Fall Time	Less than 70 nsec at full rated Output.
Pulse Duty Cycle Variation	15% to 85% (2 Hz - 200 KHz) 25% to 75% (>200 KHz) Minimum pulse width 200 ns
Triangle Linearity Error	0.2% (Fo = 10 KHz, 5% to 95%)
Power Requirement	230 V AC ± 10%, 50/60 Hz, 5 VA.
Dimensions	215 mm (W) x 85 mm (H) x 205 mm (D).
Weight	1.8 Kg.

Panel Controls and Features:

No.	Parameter	Details
1	LCD DISPLAY	16 Character X 1 line display shows frequency of output signal set by FREQUENCY KNOB (2) and UP RANGE(9) or DOWN RANGE (10) switches. It also displays the output waveform selected by WAVEFORM SELECTOR (8).
2	FREQUENCY	In conjunction with UP RANGE/FREQUENCY (9) or DOWN RANGE/FREQUENCY (10) switches this knob varies the output frequency of the waveforms at the 50 ohms OUTPUT JACK (6).
3	PULSE WIDTH	This control varies the duty cycle of the selected pulse from 15% to 85%.
4	DC OFFSET	Turns on/off the DC offset voltage applied to the output and controls the output signal DC level with respect to ground. It is continuously variable for $\pm 5V$. Its range is attenuated by the ATTENUATOR (7) switch.
5	AMPLITUDE	It adjusts the amplitude of the output signal from less than 10% to 100% of the levels, selected with the ATTENUATOR (7) switch.
6	OUTPUT JACK	Waveforms selected by WAVEFORM SELECTOR (8) switch as well as the superimposed DC offset voltages are available at this jack.
7	ATTENUATOR	This switch adjusts the amplitude of output signal in precise steps of 20 dB. Maximum attenuation obtained is 60 dB.
8	WAVEFORM SELECTOR	Selects either sine, square, triangle or pulse as the output waveform.
9	UP RANGE / FREQUENCY	In Switch mode increases frequency at digit position set by FREQUENCY KNOB (2). In Pot mode used in conjunction with FREQUENCY KNOB to select the desired output frequency. Each press of the switch increases the frequency by factor of 10.
10	DOWN RANGE / FREQUENCY	In Switch mode decreases frequency at digit position set by FREQUENCY KNOB (2). In Pot mode used in conjunction with FREQUENCY KNOB to select the desired output frequency. Each press of the switch decreases the frequency by factor of 10.
11	POWER ON-OFF	Turns on/off the mains supplied to the unit. Located on the back panel

CROMTECH INDIA

1st Floor Begum Niwas, Opp Mercantile, Bank Society Colony, 5th Natwar Nagar Road, Jogeshwari (East), Mumbai 400 060.
Maharashtra - India.

Mobile: +91 98693 82134 / 81088 13320

Telefax: +91 22 2838 6028

Email: cromamumbai@mail.com/ cromtechindia@mail.com/ info@cromtechindia.com/ sales@cromtechindia.com

Website: www.cromtechindia.com