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Walfront FG-100

Walfront FG-100 Function Generator DDS Counter Source Module User Manual

Model: FG-100 | Brand: Walfront

1. Introduction

This manual provides detailed instructions for the proper use and maintenance of the Walfront FG-100 Function Generator DDS Counter Source Module. The FG-100 is a versatile device utilizing Direct Digital Synthesis (DDS) technology to generate various waveforms, including sine, square, triangle, and sawtooth, across a frequency range of 1Hz to 500KHz. It is designed for applications requiring precise signal generation and frequency counting in educational, hobbyist, and professional settings.

2. Safety Information

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or damage to the product.

- **Power Source:** Use only the specified 5V DC power supply. Ensure the power source is stable and within the rated voltage.
- **Environment:** Operate the device in a dry, well-ventilated area. Avoid exposure to moisture, extreme temperatures, or direct sunlight.
- **Handling:** Do not drop or subject the device to strong impacts. Avoid opening the casing, as there are no user-serviceable parts inside.
- **Connections:** Ensure all connections are secure before applying power. Disconnect power before making or changing connections.
- **Cleaning:** Use a soft, dry cloth for cleaning. Do not use liquid cleaners or solvents.

3. Package Contents

Verify that all items listed below are present in your package:

- 1 x Walfront FG-100 Function Generator DDS Counter Source Module

- 1 x USB Power Cable

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4. Product Overview

The FG-100 features a compact design with an intuitive control panel and an LCD display for easy operation. Below is an illustration of the device and its main components.

Figure 4.1: Walfront FG-100 Function Generator and included USB power cable.

4.1 Front Panel Controls

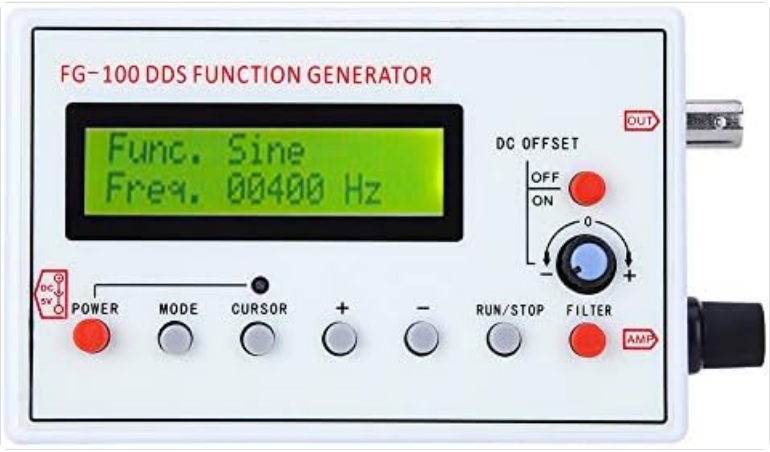

Figure 4.2: Close-up view of the FG-100 front panel.

- **LCD Display:** Shows current waveform type, frequency, and other settings.
- **POWER Button:** Toggles the device power on/off.
- **MODE Button:** Cycles through different waveform types (Sine, Square, Triangle, Sawtooth).
- **CURSOR Button:** Moves the cursor on the LCD to select digits for frequency adjustment.
- **'+' / '-' Buttons:** Adjust the value of the selected digit or parameter.
- **RUN/STOP Button:** Starts or pauses the waveform output.

- **FILTER Button:** Toggles the output filter on/off.
- **DC OFFSET Switch:** Toggles DC offset on/off.
- **AMP Knob:** Adjusts the amplitude of the output signal.

4.2 Side Panel Connections

Figure 4.3: Side view showing output and amplitude control.

- **DC 5V Input:** Power input port for the USB power cable.
- **OUT (BNC Connector):** Main signal output port.

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5. Setup

Follow these steps to set up your FG-100 Function Generator:

1. **Power Connection:** Connect the provided USB power cable to the 'DC 5V' input port on the side of the FG-100. Plug the other end of the USB cable into a 5V USB power adapter (not included) or a compatible USB port.
2. **Output Connection:** Connect a BNC cable (not included) to the 'OUT' BNC connector on the side of the FG-100. Connect the other end of the BNC cable to your oscilloscope, frequency counter, or other test equipment.
3. **Power On:** Press the 'POWER' button on the front panel. The LCD display should illuminate and show the default waveform and frequency.

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6. Operating Instructions

6.1 Waveform Selection

Press the 'MODE' button to cycle through the available waveform types: Sine, Square, Triangle, and Sawtooth. The currently selected waveform will be displayed on the LCD.

6.2 Frequency Adjustment

To adjust the output frequency:

1. The frequency value is displayed on the LCD.
2. Press the 'CURSOR' button to move the blinking cursor to the digit you wish to change.
3. Use the '+' and '-' buttons to increase or decrease the value of the selected digit.
4. Repeat steps 2 and 3 until the desired frequency is set.

6.3 DC Offset Control

The 'DC OFFSET' switch allows you to add or remove a DC component to the output signal. Flip the switch to 'ON' to enable DC offset or 'OFF' to disable it.

6.4 Filter Function

Press the 'FILTER' button to toggle the output filter. This filter can be used to smooth the output of sine and pulse waves, which may be beneficial for certain applications.

6.5 Amplitude Adjustment

Rotate the 'AMP' knob on the side of the device to adjust the amplitude (peak-to-peak voltage) of the output signal. Turn clockwise to increase amplitude, counter-clockwise to decrease.

6.6 Run/Stop Output

Press the 'RUN/STOP' button to pause or resume the waveform output. When paused, the output signal will cease, and the display may indicate a stopped state.

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7. Maintenance

Proper maintenance ensures the longevity and reliable operation of your FG-100.

- **Cleaning:** Regularly wipe the device with a soft, dry, lint-free cloth. Do not use abrasive cleaners, solvents, or chemical agents.
- **Storage:** When not in use, store the device in a cool, dry place, away from direct sunlight and excessive dust.
- **Inspection:** Periodically inspect the power cable and connectors for any signs of damage. If damage is found, discontinue use and contact support.

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8. Troubleshooting

If you encounter issues with your FG-100, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on / LCD is blank.	No power, faulty cable, or power adapter issue.	Ensure the USB power cable is securely connected. Try a different USB power adapter or USB port. Verify the 'POWER' button is pressed.
No output signal.	Output cable not connected, 'RUN/STOP' is paused, or amplitude is set to minimum.	Check BNC cable connection. Press 'RUN/STOP' to ensure output is active. Rotate the 'AMP' knob clockwise to increase amplitude.
Incorrect frequency or waveform.	Settings are not correctly adjusted.	Verify the frequency setting using 'CURSOR' and '+/-' buttons. Press 'MODE' to select the desired waveform.

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9. Specifications

Technical specifications for the Walfront FG-100 Function Generator:

Feature	Specification
Model	FG-100
Frequency Range	1Hz - 500KHz
Waveform Types	Sine, Square, Triangle, Sawtooth
Technology	DDS (Direct Digital Synthesis)
DC Offset	Adjustable On/Off
Filter	Selectable On/Off for sine/pulse waves
Power Supply	DC 5V (via USB)
Material	ABS
Item Weight	9.6 ounces
Manufacturer	Eujgoov

10. Warranty and Support

For warranty information, technical support, or service inquiries regarding your Walfront FG-100 Function Generator, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase.

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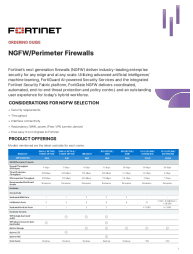
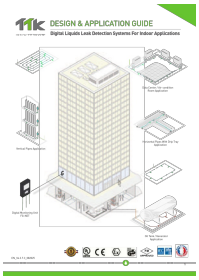
Related Documents - FG-100

	VOLTCRAFT FG-1302 / FG-1602 Dual-Channel Arbitrary Waveform Generator Datasheet Detailed technical specifications and features for the VOLTCRAFT FG-1302 (30 MHz) and FG-1602 (60 MHz) Dual-Channel Arbitrary Waveform Generators, including waveform types, frequency characteristics, amplitude, modulation, and general specifications.

	[VOLTCRAFT Dual-Channel Arbitrary Waveform Generator User Manual] Comprehensive user manual for the VOLTCRAFT Dual-Channel Arbitrary Waveform Generator, covering models FG-2102, FG-2252, FG-2502, and FG-2602. Includes safety information, technical specifications, operation guides, and troubleshooting.
	[VOLTCRAFT Dual-Channel Arbitrary Waveform Generator Quick Guide] This quick guide from VOLTCRAFT details the operation of the Dual-Channel Arbitrary Waveform Generator, covering safety, setup, waveform generation, PC communication, and maintenance for models FG-30802T, FG-31602T, and FG-32502T.
	[DDS Double Ambulatory Spinal-Air Decompression LSO User Manual] User manual for the DDS Double Ambulatory Spinal-Air Decompression LSO, detailing its features, how to use, care, contraindications, and warranty information from DDS, Inc.
	[Fortinet NGFW/Perimeter Firewalls Ordering Guide] This ordering guide details Fortinet's Next-Generation Firewalls (NGFW) and Perimeter Firewalls, highlighting their advanced AI/ML capabilities, FortiGuard services, and the integrated Fortinet Security Fabric for comprehensive enterprise threat protection and policy control.
	[TTK Digital Liquids Leak Detection Systems for Indoor Applications: Design & Application Guide] This guide details TTK's digital liquid leak detection systems for indoor applications, covering product specifications, design layouts, and practical applications. It is intended for engineering consultants, contractors, and end-users, providing comprehensive information on system components like FG-NET, FG-BBOX, and various alarm units, sensors, and accessories.