VOLTCRAFT GOS-630

Voltcraft VC 630-2 Analog Oscilloscope User Manual

Model: GOS-630

1. Introduction

This manual provides comprehensive instructions for the safe and efficient operation of your Voltcraft VC 630-2 Analog Oscilloscope. Designed for professional use in fields such as assistance, laboratory work, education, and hobby electronics, this 2-channel oscilloscope offers a bandwidth of 0 (DC) to 30 MHz. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage or injury.

Figure 1: Voltcraft Brand Logo

2. Safety Instructions

Always adhere to the following safety guidelines to prevent electric shock, fire, or damage to the device.

- **Power Supply:** Ensure the oscilloscope is connected to a power source matching the specified voltage (115 V/AC or 230 V/AC). Use only the provided power cord.
- **Environment:** Operate the device in a dry, well-ventilated area. Avoid exposure to moisture, extreme temperatures, or direct sunlight.
- **Ventilation:** Do not block ventilation openings. Adequate airflow is essential to prevent overheating.
- **Grounding:** The oscilloscope must be properly grounded. Do not defeat the grounding plug.
- **Input Voltage:** The device is rated for CAT II 300 V. Do not apply voltages exceeding this rating to any input terminal.
- **Servicing:** Refer all servicing to qualified service personnel. Do not attempt to open or repair the device yourself.
- **Cleaning:** Disconnect the power before cleaning. Use a soft, dry cloth. Do not use liquid cleaners or aerosols.

3. Product Overview

The Voltcraft VC 630-2 is a robust analog oscilloscope featuring two input channels and a clear display for waveform analysis. Below is an image illustrating the main components of the device.

Figure 2: Front Panel of the Voltcraft VC 630-2 Oscilloscope. This image shows the display screen, various control knobs for vertical and horizontal adjustments, trigger settings, and input connectors for Channel 1 and Channel 2.

Key Features:

- 2-Channel Input
- 30 MHz Bandwidth
- High-Sensitivity Triggering
- External Input
- X-Y Operation Mode
- Z-Input
- Phase Meter Functionality
- 50 Ω Output for Frequency Counters

4. Setup

4.1 Unpacking and Inspection

1. Carefully remove the oscilloscope from its packaging.
2. Inspect the device for any signs of physical damage that may have occurred during transit.
3. Verify that all included accessories, such as the power cord and user manual, are present.

4.2 Power Connection

1. Ensure the power switch on the oscilloscope is in the OFF position.
2. Connect the provided power cord to the power input on the rear panel of the oscilloscope.
3. Plug the other end of the power cord into a grounded electrical outlet that supplies either 115 V/AC or 230 V/AC, as appropriate for your region.

4.3 Initial Power-On

1. After connecting the power, switch the oscilloscope ON.
2. Observe the display for initial power-up sequence and self-test indicators.
3. Allow a few moments for the device to stabilize before proceeding with measurements.

5. Operating Instructions

5.1 Basic Controls

- **Power Switch:** Located on the front panel, used to turn the device ON/OFF.
- **Intensity/Focus:** Adjusts the brightness and sharpness of the trace on the screen.
- **Position (Vertical/Horizontal):** Moves the waveform vertically or horizontally on the display.

5.2 Vertical Deflection (VOLTS/DIV)

The VOLTS/DIV knob controls the vertical sensitivity of the input signal. It ranges from 5 mV/Div to 5 V/Div. Select the appropriate setting based on the amplitude of the signal you are measuring.

- **Input Coupling (AC/DC/GND):**
    - **AC:** Blocks the DC component of the signal, allowing only the AC component to be displayed.
    - **DC:** Displays both AC and DC components of the signal.
    - **GND:** Disconnects the input signal and grounds the input, useful for setting the zero reference level.
- **CH1/CH2 Inputs:** Connect your probes to the BNC connectors for Channel 1 and Channel 2.

5.3 Horizontal Sweep (TIME/DIV)

The TIME/DIV knob controls the horizontal sweep speed, determining how much time each horizontal division represents. Adjust this to view the desired number of cycles of your waveform.

5.4 Triggering

Triggering stabilizes the waveform on the display. The VC 630-2 features high-sensitivity triggering.

- **Level:** Adjusts the voltage level at which the trigger occurs.
- **Slope:** Selects whether the trigger occurs on the rising or falling edge of the signal.
- **Source:** Selects the trigger source (e.g., CH1, CH2, External).

5.5 Advanced Functions

- **X-Y Operation:** Allows the oscilloscope to display one input signal against another, useful for Lissajous figures and phase measurements.
- **Z-Input:** Modulates the intensity of the trace, often used for blanking or brightening specific parts of the waveform.
- **Phase Meter:** Utilize this function for precise phase difference measurements between two signals.
- **50 Ω Output:** An additional 50 Ω output is provided for connecting external frequency counters, enhancing the versatility of the oscilloscope.

6. Maintenance

6.1 Cleaning

To maintain the performance and appearance of your oscilloscope:

- Always disconnect the power cord before cleaning.
- Use a soft, dry, lint-free cloth to wipe the exterior surfaces.
- For stubborn dirt, slightly dampen the cloth with water or a mild, non-abrasive cleaner. Do not allow any liquids to enter the device.
- Avoid using harsh chemicals, solvents, or abrasive cleaning agents.

6.2 Storage

When not in use, store the oscilloscope in a cool, dry place, away from direct sunlight, dust, and extreme temperatures. Protect it from physical shocks.

6.3 Calibration

The Voltcraft VC 630-2 is factory calibrated. For continued accuracy, periodic professional calibration may be required depending on usage and application. Please note that the product description indicates "factory (without certificate)".

7. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No display/Power off	Power cord not connected; Power outlet faulty; Power switch off.	Check power cord connection; Test power outlet; Ensure power switch is ON.
No trace on screen	Intensity too low; Focus out of adjustment; Vertical/Horizontal position off-screen; Input coupling set to GND.	Adjust Intensity and Focus knobs; Center Position controls; Change Input Coupling from GND to AC or DC.
Unstable waveform	Trigger level incorrect; Trigger source incorrect; Signal too noisy.	Adjust Trigger Level; Select correct Trigger Source (CH1, CH2, EXT); Check signal integrity.
Distorted waveform	Input signal too high (clipping); Probe compensation incorrect; Bandwidth exceeded.	Adjust VOLTS/DIV to a higher setting; Compensate probe; Ensure signal frequency is within 30 MHz bandwidth.

8. Specifications

Technical specifications for the Voltcraft VC 630-2 Analog Oscilloscope (Model: GOS-630).

Parameter	Value
Model Number	GOS-630
Bandwidth	0 (DC) to 30 MHz
Channels	2
Input Coupling	AC, DC, GND
Vertical Deflection	5 mV - 5 V / Div

Monitor Dimensions	10 x 8 cm
Power Supply	115 V/AC, 230 V/AC
Weight	7.8 kg
Overvoltage Category	CAT II 300 V
Manufacturer	VOLTCRAFT

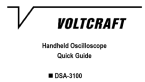
9. Warranty & Support

Voltcraft products are manufactured to high quality standards and come with a standard warranty. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or visit the official Voltcraft website.

For technical support, troubleshooting assistance beyond this manual, or service inquiries, please contact Voltcraft customer service. Contact details can typically be found on the manufacturer's website or in your product packaging.

Related Documents - GOS-630

	VOLTCRAFT DSO-111 Oscilloscope Quick Guide: Operation, Safety, and Troubleshooting Comprehensive quick guide for the VOLTCRAFT DSO-111 Oscilloscope, detailing safety instructions, front/rear panel operations, basic usage, probe compensation, X-Y mode, and troubleshooting common issues.
	VOLTCRAFT DSO-2154 Oscilloscope Quick Guide A quick guide to the VOLTCRAFT DSO-2154 Oscilloscope, covering safety instructions, basic operation, interface overview, and PC communication for efficient use.
	VOLTCRAFT DSA-3100 Handheld Oscilloscope Quick Start Guide This document provides a quick start guide for the VOLTCRAFT DSA-3100 handheld oscilloscope, covering safety instructions, operation of oscilloscope, multimeter, and spectrum analyzer functions, PC communication, troubleshooting, and technical specifications.

	VOLTCRAFT DSA-3100 Handheld Oscilloscope Quick Guide This quick guide provides essential information for operating the VOLTCRAFT DSA-3100 handheld oscilloscope, including safety precautions, usage instructions for oscilloscope, multimeter, and spectrum functions, PC communication, troubleshooting, and technical specifications.
	VOLTCRAFT DSO-1102 USB & DSO-2202 USB User Manual Comprehensive user manual for the VOLTCRAFT DSO-1102 USB and DSO-2202 USB oscilloscopes, covering installation, operation, functions, safety precautions, and technical specifications.
	VOLTCRAFT DOV Series Oscilloscope Quick Guide and User Manual This quick guide provides essential information for operating the VOLTCRAFT DOV Series oscilloscopes. It covers safety precautions, instrument structure, user interface, Android system usage, oscilloscope functions, touch screen controls, and maintenance. Includes details for models DOV702, DOV704, DOV1002, DOV1004, DOV1254 LA, DOV1254F LA, DOV2504 LA, and DOV2504F LA.