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## VICTOR 8145C

# VICTOR 8145C Digital Bench Multimeter User Manual

Model: 8145C | Brand: VICTOR

## 1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your VICTOR 8145C Digital Bench Multimeter. The VICTOR 8145C is a high-precision, 4½-digit (22000 count) bench-type multimeter featuring True RMS measurement, auto-ranging capabilities, and a large LCD display with backlight. It is designed for accurate electrical measurements in both laboratory and mobile service environments, offering a wide range of functions including DC/AC voltage and current, resistance, capacitance, frequency, and temperature.

Please read this manual thoroughly before using the device to ensure proper handling, optimal performance, and safety.

## 2. SAFETY INFORMATION

**WARNING: To avoid electric shock or personal injury, please read and understand all safety information before using this multimeter.**

- Always ensure the multimeter is in good working condition and free from damage before use.
- Do not apply voltage or current that exceeds the maximum specified limits for the selected range. The device is rated CAT III 600V.
- Use only the test leads provided or approved replacements. Ensure test leads are fully seated into the input jacks.
- Never use the multimeter if the test leads are damaged or if the meter itself appears damaged.
- Be cautious when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Disconnect power to the circuit and discharge all high-voltage capacitors before performing resistance, continuity, diode, or capacitance measurements.
- Do not operate the multimeter in explosive gas, vapor, or dusty environments.
- Always select the correct function and range before making a measurement.
- Keep fingers behind the finger guards on the test probes during measurements.

### 3. PACKAGE CONTENTS

Carefully unpack the VICTOR 8145C Digital Bench Multimeter and check for the following items:

- VICTOR 8145C Digital Bench Multimeter
- Test Leads (Red and Black)
- Power Cord
- USB Communication Cable
- PC Software CD
- User Manual



Figure 3.1: The image displays the product packaging and the accessories that come with the VICTOR 8145C, including the multimeter, test leads, power cord, USB cable, software CD, and user manual.

### 4. PRODUCT OVERVIEW

#### 4.1 Front Panel



Figure 4.1: This image shows the front panel of the VICTOR 8145C Digital Bench Multimeter, highlighting its large LCD screen, function buttons, and input terminals.



Figure 4.2: A close-up view highlighting the multimeter's LCD display with backlight, 22000 count capability, durable rubber buttons, and the 10A stand-alone input jack.

- **LCD Display:** Large, backlit display with a maximum count of 22000. Features a 5-bit main display for primary readings and a 4-bit auxiliary display for secondary information.
- **Function Buttons:** Dedicated buttons for selecting measurement types (DCV, DCA, ACV, ACA, Hz,

TEMP) and special functions (REL, RATE, HOLD, MAX/MIN/AVG, Config).

- **AUTO/RANGE Buttons:** For automatic or manual range selection.

- **Input Jacks:**

- **VΩ:** Input for voltage, resistance, capacitance, frequency, diode, and continuity measurements.
- **COM:** Common (ground) input for all measurements.
- **mA:** Input for milliampere current measurements.
- **10A:** Input for high current (up to 10A) measurements.

## 4.2 Rear Panel

The rear panel typically includes the main power switch, AC power input, and a USB port for PC connectivity.

## 4.3 Key Features

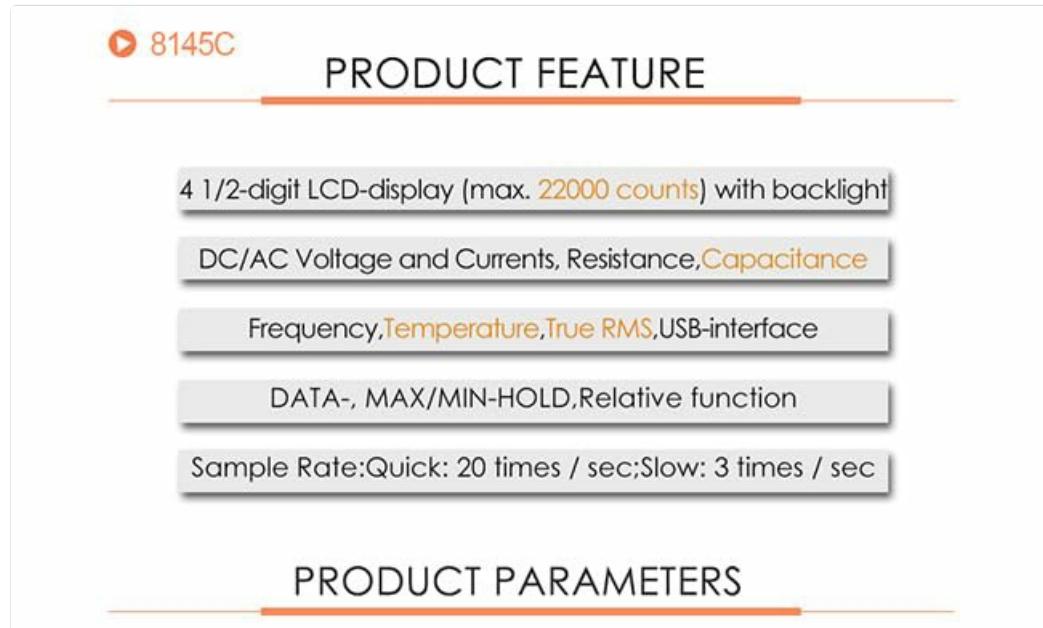


Figure 4.3: This graphic summarizes the main features of the VICTOR 8145C, including its 4 1/2-digit LCD, measurement capabilities (DC/AC Voltage, Current, Resistance, Capacitance, Frequency, Temperature, True RMS), USB interface, and data functions.

- 4½-digit LCD display (max. 22000 counts) with backlight.
- Measures DC/AC Voltage and Currents, Resistance, Capacitance, Frequency, and Temperature.
- True RMS measurement for accurate readings of non-sinusoidal waveforms.
- USB interface for PC connectivity and data logging.
- DATA HOLD, MAX/MIN/AVG, and Relative function.
- Sample Rate: Quick (20 times/sec) and Slow (3 times/sec).

## 5. SPECIFICATIONS

Project			VICTOR 8145C
DC voltage	Range	200mV/2V/20V/200V/1000V	
	Basic accuracy	±(0.05%+4dgt)	
AC voltage	Range	200mV/2V/20V/200V/750V	
	Basic accuracy	±(0.5%+40dgt)	
DC current	Range	0.2mA/2mA/20mA/200mA/10A	
	Basic accuracy	±(0.2%+10dgt)	
AC current	Range	0.2mA/2mA/20mA/200mA/10A	
	Basic accuracy	±(0.8%+30dgt)	
Resistance	Range	200Ω/2kΩ/20kΩ/200kΩ/2MΩ/20MΩ/60MΩ	
	Basic accuracy	±(0.2%+5dgt)	
Capacitance	Range	10nF/100nF/1000nF/10uF/100uF/1000uF	
	Basic accuracy	±(5%+5dgt)	
Frequency	Range	10Hz ~ 10MHz	
	Basic accuracy	±(0.02%+4dgt)	
Thermocouple	Range	K indexing:-200.0°C ~ 1372.0°C	
	Basic accuracy	±(0.5%+5°C)	
Display words		22000	
The measurement rate		Quick: 20 times / sec Slow: 2.5 times / sec	
Automatic / manual range		✓	
True RMS		✓	
Bandwidth		1kHz	
Diode test		✓	
Continuity beeper		✓	
MAX/MIN/AVG		✓	
Relative value measurement		✓	
Data Hold		✓	
The reference junction compensation		✓	
°C/ ° F conversion		✓	

Figure 5.1: A detailed table outlining the technical specifications of the VICTOR 8145C Digital Bench Multimeter, including measurement ranges, basic accuracy, display words, and special functions.

### VICTOR 8145C General Specifications

Feature	Description
Display	22000 Counts, 4½-digit LCD with backlight
DC Voltage Range	200mV / 2V / 20V / 200V / 1000V
DC Voltage Basic Accuracy	±(0.05%+4dgt)
AC Voltage Range	200mV / 2V / 20V / 200V / 750V
AC Voltage Basic Accuracy	±(0.5%+40dgt)
DC Current Range	0.2mA / 2mA / 20mA / 200mA / 10A
DC Current Basic Accuracy	±(0.2%+10dgt)

Feature	Description
AC Current Range	0.2mA / 2mA / 20mA / 200mA / 10A
AC Current Basic Accuracy	±(0.8%+3dgt)
Resistance Range	200Ω / 2kΩ / 20kΩ / 200kΩ / 2MΩ / 20MΩ / 60MΩ
Resistance Basic Accuracy	±(0.2%+5dgt)
Capacitance Range	10nF / 100nF / 1000nF / 10uF / 100uF / 1000uF
Capacitance Basic Accuracy	±(5%+5dgt)
Frequency Range	10Hz ~ 10MHz
Frequency Basic Accuracy	±(0.02%+4dgt)
Thermocouple Range	K indexing: -200.0°C ~ 1372.0°C
Thermocouple Basic Accuracy	±(0.5%+5°C)
Measurement Rate	Quick: 20 times/sec; Slow: 2.5 times/sec
Automatic / Manual Range	Yes
True RMS	Yes
Bandwidth	1kHz
Diode Test	Yes
Continuity Beeper	Yes
MAX/MIN/AVG	Yes
Relative Value Measurement	Yes
Data Hold	Yes
Reference Junction Compensation	Yes
°C / °F Conversion	Yes
Power Source	AC Power (1 LR41 battery included for internal functions)
Product Dimensions (L x W x H)	20 x 15 x 18 cm (7.87 x 5.91 x 7.09 inches)
Item Weight	1 kg (2.2 lbs)
Manufacturer	Xi'an Beicheng Electronics Co.Ltd (VICTOR and Ruoshui)



Figure 5.2: This diagram illustrates the physical dimensions of the VICTOR 8145C Digital Bench Multimeter, showing its length, width, and height in millimeters.

## 6. SETUP

### 6.1 Power Connection

1. Ensure the multimeter's power switch (located on the rear panel) is in the OFF position.
2. Connect the provided power cord to the AC power input on the rear panel of the multimeter.
3. Plug the other end of the power cord into a suitable AC power outlet.
4. Flip the power switch to the ON position to power on the device.

### 6.2 Test Lead Connection

Always connect the test leads to the appropriate input jacks based on the measurement you intend to perform.

- For most measurements (voltage, resistance, capacitance, frequency, diode, continuity): Insert the red test lead into the **VΩ** jack and the black test lead into the **COM** jack.
- For milliamperere current measurements: Insert the red test lead into the **mA** jack and the black test lead into the **COM** jack.
- For high current (up to 10A) measurements: Insert the red test lead into the **10A** jack and the black test lead into the **COM** jack.

### 6.3 USB Connection (Optional)

To connect the multimeter to a computer for data logging or control:

1. Install the provided PC software from the CD onto your computer.
2. Connect one end of the USB communication cable to the USB port on the rear panel of the multimeter.
3. Connect the other end of the USB cable to an available USB port on your computer.
4. Follow the instructions in the PC software manual for establishing communication and using data

logging features.

## 7. OPERATING INSTRUCTIONS

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### 7.1 Basic Measurement Steps

1. Ensure the multimeter is powered on and test leads are correctly connected for the desired measurement type.
2. Select the appropriate function by pressing the corresponding button (e.g., DCV for DC Voltage).
3. The multimeter will typically operate in auto-ranging mode. If manual ranging is desired, press the **RANGE** button to cycle through available ranges.
4. Connect the test probes to the circuit or component under test.
5. Read the measurement value on the LCD display.
6. Disconnect the test probes from the circuit after measurement.

### 7.2 Specific Measurement Functions

- **DC/AC Voltage (DCV/ACV):** Press the **DCV** or **ACV** button. Connect probes in parallel with the circuit.
- **DC/AC Current (DCA/ACA):** Press the **DCA** or **ACA** button. Connect probes in series with the circuit. Ensure correct jack (mA or 10A) is used.
- **Resistance ( $\Omega$ ):** Press the  **$\Omega$**  button. Disconnect power from the circuit. Connect probes across the component.
- **Capacitance (F):** Press the **F** button. Disconnect power and discharge the capacitor before connecting probes.
- **Frequency (Hz):** Press the **Hz** button. Connect probes to the signal source.
- **Temperature (TEMP):** Press the **TEMP** button. Connect a K-type thermocouple (not included) to the appropriate input terminals.
- **Diode Test:** Press the **Diode** button. Connect probes across the diode. Forward bias will show a voltage drop, reverse bias will show OL.
- **Continuity Test:** Press the **Continuity** button. Connect probes across the circuit. A beep indicates continuity (low resistance).

### 7.3 Special Functions

- **HOLD:** Press the **HOLD** button to freeze the current reading on the display. Press again to release.
- **MAX/MIN/AVG:** Press the **MAX/MIN/AVG** button to record the maximum, minimum, and average values over a period. Press repeatedly to cycle through MAX, MIN, AVG, and exit.
- **REL (Relative Measurement):** Press the **REL** button to store the current reading as a reference value. Subsequent measurements will be displayed as the difference from this reference. Press again to exit.
- **Config:** Used for advanced settings and configurations, refer to the detailed software manual for specific options.

## 8. MAINTENANCE

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### 8.1 Cleaning

To clean the multimeter, wipe the case with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the device is powered off and disconnected from all power sources before cleaning.

## 8.2 Battery Replacement (Internal)

The multimeter includes an LR41 battery, typically for internal memory or clock functions. If the display shows signs of memory loss or incorrect time (if applicable), this battery may need replacement. This procedure should ideally be performed by qualified personnel to avoid damaging internal components.

## 8.3 Fuse Replacement

If the current measurement function fails, the internal fuse may need replacement. Refer to the detailed service manual or contact customer support for fuse specifications and replacement procedures. Always replace with a fuse of the identical type and rating.

## 8.4 Storage

When not in use for extended periods, store the multimeter in a dry, dust-free environment, away from direct sunlight and extreme temperatures. Disconnect all test leads and the power cord.

# 9. TROUBLESHOOTING

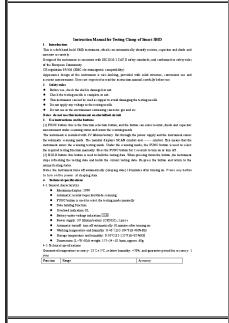
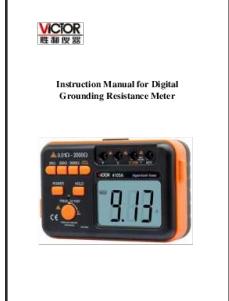
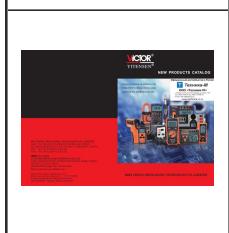
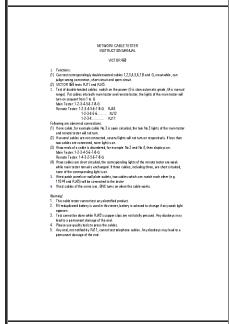
## Common Issues and Solutions

Problem	Possible Cause	Solution
No display when powered on	No AC power; Power cord loose; Power switch off	Check AC power connection; Ensure power switch is ON.
Incorrect readings	Wrong function/range selected; Poor test lead connection; Damaged test leads	Select correct function/range; Reconnect test leads firmly; Inspect/replace test leads.
Current measurement not working	Blown fuse; Incorrect jack used	Check/replace fuse (refer to service manual); Ensure red lead is in mA or 10A jack.
Continuity beeper not working	Circuit resistance too high; Beeper function not selected	Ensure circuit resistance is low; Select continuity function.
USB communication failure	Driver not installed; Loose USB cable; Software issue	Install USB drivers from CD; Reconnect USB cable; Consult software manual.

# 10. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided at the time of purchase or contact your retailer. The manufacturer of this product is Xi'an Beicheng Electronics Co.Ltd (VICTOR and Ruoshui). If you encounter any issues not covered in this manual or require technical assistance, please contact the seller or authorized service center for support.

## Related Documents - 8145C

	<p><a href="#">Victor 8145C Dual Display Digital Multimeter User Manual and Specifications</a></p> <p>Comprehensive user manual for the Victor 8145C Dual Display Digital Multimeter, covering features, operation, safety, specifications, and maintenance. Includes detailed instructions and technical data.</p>
	<p><a href="#">Victor 6013B Smart SMD Component Tester Instruction Manual</a></p> <p>Detailed instruction manual for the Victor 6013B Smart SMD component tester, covering its introduction, safety rules, button operations, technical specifications, testing procedures for resistors, capacitors, and diodes, and maintenance guidelines.</p>
	<p><a href="#">VICTOR 4105A Digital Grounding Resistance Meter Instruction Manual</a></p> <p>Comprehensive instruction manual for the VICTOR 4105A Digital Earth Tester, covering overview, safety precautions, work principle, technical specifications, measurement methods, battery installation, and troubleshooting.</p>
	<p><a href="#">VICTOR Electronic Testing and Measuring Instruments Catalog   Digital Multimeters, Oscilloscopes, and More</a></p> <p>Explore the comprehensive range of VICTOR electronic testing and measuring instruments, including digital multimeters, clamp meters, oscilloscopes, function generators, and more. High-quality, reliable equipment for professional use.</p>
	<p><a href="#">VICTOR 468 Network Cable Tester Instruction Manual</a></p> <p>Instruction manual for the VICTOR 468 Network Cable Tester, detailing its functions, testing procedures for double-twisted cables, abnormal connection indicators, and important warnings.</p>
	<p><a href="#">Victor Personal Massager User Manual and Joyhub App Guide</a></p> <p>Comprehensive user manual for the Victor personal massager, detailing product features, app connectivity with Joyhub, usage instructions, care, warnings, and warranty information. Supports multiple languages.</p>