EX ELECTRONIX EXPRESS 01V86D

EX ELECTRONIX EXPRESS Autoranging Digital Multimeter with USB Interface, Model 01V86D

Instruction Manual

1. Introduction

This manual provides detailed instructions for the safe and effective use of your EX ELECTRONIX EXPRESS Autoranging Digital Multimeter, Model 01V86D. This device is designed for measuring DC/AC Volts, Resistance, DC/AC Current, Capacitance, Frequency, and Temperature, and includes a Continuity Beeper and Diode Checker. It features a large 3 3/4 digit backlit display and a USB interface for data logging.

2. Safety Information

To ensure safe operation, always follow these basic safety precautions:

- Read and understand all instructions before using the multimeter.
- Never apply voltage or current to the meter that exceeds the specified maximum limits.
- Use extreme caution when working with voltages above 60V DC or 30V AC RMS, as these pose a shock hazard.
- Always disconnect the test leads from the circuit before changing functions or ranges.
- Ensure the test leads are in good condition, without any damaged insulation.
- Replace batteries immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter in explosive atmospheres or in the presence of flammable gases or dust.

3. Package Contents

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

- EX ELECTRONIX EXPRESS Autoranging Digital Multimeter (Model 01V86D)
- Test Leads (one red, one black)
- Instruction Manual
- Transistor Test Accessory

- Temperature Probe
- 2 x AAA Batteries
- USB Cable
- Software Disc (for USB interface)

4. Product Features

The EX ELECTRONIX EXPRESS 01V86D Multimeter offers the following key features:

- Large 3 3/4 Digits Backlit Display for clear readings.
- USB Interface for connecting to a computer for data logging.
- Measures DC/AC Volts, Resistance, DC/AC Current, Capacitance, Frequency, and Temperature.
- Includes Continuity Beeper and Diode Checker functions.
- Data Hold function to freeze the displayed reading.
- Auto Power Off feature to conserve battery life.
- Bar Graph Display for quick visual indication of measurement trends.

5. Setup

5.1 Battery Installation

The multimeter is powered by two AAA batteries. To install or replace batteries:

1. Ensure the multimeter is turned off and test leads are disconnected.
2. Locate the battery compartment cover on the back of the unit.
3. Use a screwdriver to remove the screw securing the cover.
4. Remove the cover and insert two AAA batteries, observing the correct polarity (+/-).
5. Replace the battery compartment cover and secure it with the screw.

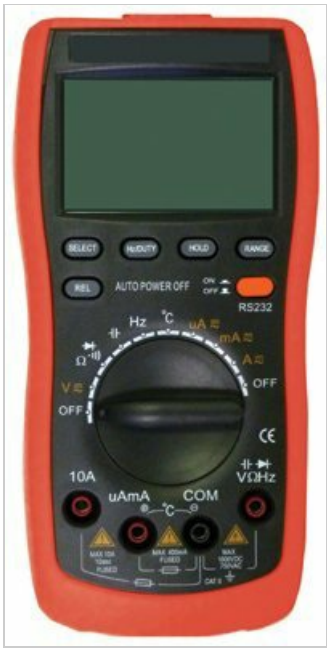


Figure 1: Illustration of the battery compartment on the back of the multimeter. The cover is typically secured by a single screw, and the battery polarity markings are visible inside.

5.2 Connecting Test Leads

Always connect the black test lead to the 'COM' (common) jack. Connect the red test lead to the appropriate input jack based on the measurement type:

- For Voltage, Resistance, Capacitance, Frequency, Diode, and Continuity measurements, connect the red lead to the 'VΩHzCAP' jack.
- For Current measurements up to 400mA, connect the red lead to the 'mA' jack.
- For Current measurements up to 10A, connect the red lead to the '10A' jack.

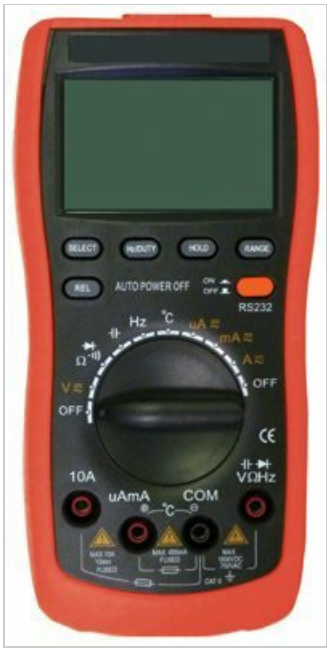


Figure 2: Close-up view of the multimeter's input jacks, showing the 'COM', 'VΩHzCAP', 'mA', and '10A' ports for connecting test leads.

5.3 USB Interface Setup

The multimeter includes a USB interface for connecting to a computer. The included software disc contains drivers and application software compatible with 32 and 64-bit editions of Windows XP, Vista, 7, 8, 8.1, and 10. Install the software before connecting the multimeter via the USB cable.



Figure 3: Image showing the USB port on the multimeter and the included USB cable, ready for connection to a computer.

6. Operating Instructions

Turn the rotary switch to the desired function. The meter is autoranging, meaning it will automatically select the correct range for most measurements.

6.1 DC/AC Voltage Measurement

1. Connect the black lead to 'COM' and the red lead to 'VΩHzCAP'.
2. Turn the rotary switch to the 'V=' (DC Voltage) or 'V~' (AC Voltage) position.
3. Connect the test leads in parallel across the circuit or component to be measured.
4. Read the voltage value on the display.

6.2 DC/AC Current Measurement

1. **Important:** Disconnect power to the circuit before connecting the meter for current measurement.
2. Connect the black lead to 'COM'. Connect the red lead to 'mA' for currents up to 400mA, or to '10A' for currents up to 10A.
3. Turn the rotary switch to the 'A=' (DC Current) or 'A~' (AC Current) position.
4. Connect the meter in series with the circuit where current is to be measured.
5. Apply power to the circuit and read the current value.

6.3 Resistance Measurement

1. Ensure the circuit or component is de-energized before measuring resistance.
2. Connect the black lead to 'COM' and the red lead to 'VΩHzCAP'.
3. Turn the rotary switch to the 'Ω' (Resistance) position.
4. Connect the test leads across the component.
5. Read the resistance value on the display.

6.4 Capacitance Measurement

1. Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
2. Connect the black lead to 'COM' and the red lead to 'VΩHzCAP'.
3. Turn the rotary switch to the 'CAP' (Capacitance) position.
4. Connect the test leads across the capacitor.
5. Read the capacitance value on the display.

6.5 Frequency Measurement

1. Connect the black lead to 'COM' and the red lead to 'VΩHzCAP'.
2. Turn the rotary switch to the 'Hz' (Frequency) position.
3. Connect the test leads across the signal source.
4. Read the frequency value on the display.

6.6 Temperature Measurement

1. Connect the temperature probe to the appropriate input jacks (usually 'COM' and 'VΩHzCAP' or dedicated temperature jacks if available).
2. Turn the rotary switch to the 'TEMP' (Temperature) position.
3. Place the tip of the temperature probe on or near the object whose temperature is to be measured.
4. Read the temperature value on the display.

6.7 Continuity Check

1. Ensure the circuit is de-energized.
2. Connect the black lead to 'COM' and the red lead to 'VΩHzCAP'.
3. Turn the rotary switch to the 'Ω' (Resistance) position and press the 'SELECT' button (if available) to cycle to continuity mode (indicated by a speaker icon).
4. Connect the test leads across the component or wire. A continuous beep indicates a low resistance path (continuity).

6.8 Diode Check

1. Ensure the diode is disconnected from the circuit.
2. Connect the black lead to 'COM' and the red lead to 'VΩHzCAP'.
3. Turn the rotary switch to the 'Ω' (Resistance) position and press the 'SELECT' button (if available) to cycle to diode mode (indicated by a diode symbol).
4. Connect the red lead to the anode and the black lead to the cathode of the diode. The display will show the forward voltage drop. Reverse the leads; the display should show 'OL' (Open Loop) for a good diode.

7. Maintenance

7.1 Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

7.2 Battery Replacement

When the low battery indicator appears on the display, replace the two AAA batteries as described in Section 5.1. Always dispose of old batteries responsibly.

8. Troubleshooting

If the multimeter does not function correctly, check the following:

- **No display or dim display:** Check battery installation and replace batteries if necessary.
- **Incorrect readings:** Ensure test leads are correctly connected to the appropriate jacks for the selected function. Verify the rotary switch is set to the correct measurement type. Check if the circuit is de-energized for resistance, capacitance, and diode tests.
- **'OL' (Overload) displayed:** The measured value exceeds the meter's range for the current setting. The autoranging feature should typically handle this, but if in a manual range, switch to a higher range.
- **No continuity beep:** Ensure the meter is in continuity mode and the circuit is de-energized.
- **USB connection issues:** Ensure the software is correctly installed and the USB cable is securely connected. Refer to the software manual for specific troubleshooting steps.

9. Specifications

Measurement Type	Range	Accuracy
DC Voltage	400mV - 1000V	±(0.5%)
AC Voltage	400mV - 750V	±(0.8%)

Measurement Type	Range	Accuracy
DC Current	400mA - 10A	±(1.0%)
AC Current	400mA - 10A	±(1.5%)
Resistance	400Ω - 40MΩ	±(0.8%)
Capacitance	4nF - 100mF	±(0.5%)
Frequency	4Hz - 30MHz	±(1.0%)
Temperature	-20°C - 1000°C	±(1.0%)

General Specifications:

- **Display:** Large 3 3/4 Digits, Backlit
- **Power Source:** 2 x AAA Batteries
- **Dimensions (L x W x H):** 7.5 x 3.7 x 1.9 inches (19.05 x 9.4 x 4.83 cm)
- **Weight:** 1 lb (0.45 kg)
- **Features:** Data Hold, Auto Power Off, Bar Graph Display
- **USB Interface:** Compatible with Windows XP, Vista, 7, 8, 8.1, 10 (32 & 64 bit)

10. Warranty and Support

For warranty information and technical support, please refer to the contact details provided with your purchase documentation or visit the official EX ELECTRONIX EXPRESS website. Keep your purchase receipt as proof of purchase for any warranty claims.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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