



Manuals.plus /

› Peaktech /

› PeakTech 3296 Analog Voltmeter Instruction Manual

Peaktech P 3296

PeakTech 3296 Analog Voltmeter Instruction Manual

Model: P 3296 | Brand: Peaktech

1. INTRODUCTION

Thank you for choosing the PeakTech 3296 Analog Voltmeter. This instrument is designed for precise voltage measurements in educational, laboratory, and workshop environments. Its robust construction and ease of use make it suitable for daily testing and measurement tasks. This manual provides essential information for the safe and efficient operation of your device.

The PeakTech 3296 measures both AC and DC voltages across a wide range, from 0.1 V to 1000 V. It operates without an external power supply, eliminating the need for batteries. Please read this manual thoroughly before using the device to ensure proper handling and to prevent damage or injury.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions when operating the PeakTech 3296 Analog Voltmeter:

- **Read the manual:** Familiarize yourself with all operating instructions and safety information before use.
- **Protection Class II:** This device is designed with Protection Class II, meaning it has double insulation. Do not modify the device.
- **Voltage Limits:** Do not exceed the maximum input voltage ratings for each range (up to 1000 V AC/DC).
- **Proper Connections:** Always use appropriate 4 mm safety test leads and ensure they are securely connected to the correct input terminals for the selected measurement range.
- **Environmental Conditions:** Use the device in a dry environment. Avoid exposure to moisture, dust, or extreme temperatures.
- **Inspection:** Before each use, inspect the device and test leads for any signs of damage. Do not use if damaged.
- **Servicing:** Repairs or servicing should only be performed by qualified personnel.
- **Children:** Keep the device out of reach of children.

3. PRODUCT OVERVIEW

The PeakTech 3296 Analog Voltmeter features a clear analog display and dedicated input terminals for various AC and DC voltage ranges.



Figure 1: Front view of the PeakTech 3296 Analog Voltmeter, showing the analog display, AC voltage inputs on the right, and DC voltage inputs on the bottom.

3.1 Key Components

1. **Analog Display:** Large, easy-to-read scale with a mirror for parallax error reduction.
2. **AC Voltage Input Terminals:** Red 4 mm safety sockets for 3V, 10V, 100V, and 1000V AC ranges.
3. **DC Voltage Input Terminals:** Red 4 mm safety sockets for 0.1V, 1V, 10V, 100V, and 1000V DC ranges.
4. **Common (COM) Terminals:** Black 4 mm safety sockets for common ground connection for both AC and DC measurements.
5. **Zero Adjustment Screw:** Small screw below the display for mechanical zero adjustment of the needle.



Figure 2: Angled view of the PeakTech 3296 Analog Voltmeter, highlighting the robust ABS plastic casing and clearly labeled input terminals.

4. SETUP

The PeakTech 3296 is a bench-type instrument designed for immediate use without external power. Follow these steps to prepare the device:

1. **Unpacking:** Carefully remove the voltmeter from its packaging. Inspect for any visible damage during transit.
2. **Placement:** Place the voltmeter on a stable, level, and dry surface, away from direct sunlight, heat sources, and strong electromagnetic fields.
3. **Zero Adjustment:** Before making any measurements, ensure the meter's needle rests exactly on the zero mark of the scale. If it does not, use a small screwdriver to gently turn the zero adjustment screw located below the display until the needle aligns with zero.
4. **Test Leads:** Obtain appropriate 4 mm safety test leads (not included). Ensure they are in good condition, without frayed wires or damaged insulation.

5. OPERATING INSTRUCTIONS

Follow these steps for accurate voltage measurements:

5.1 General Measurement Procedure

1. **Identify Voltage Type:** Determine whether you are measuring AC (Alternating Current) or DC (Direct Current) voltage.
2. **Select Range:** Based on the expected voltage, select the appropriate input terminal. Always start with the highest possible range to prevent damage to the meter, then switch to a lower range if necessary for better resolution.
3. **Connect Test Leads:**

- Connect the black test lead to the **COM** terminal.
 - Connect the red test lead to the selected voltage range terminal (e.g., 1000V AC, 10V DC).
4. **Connect to Circuit:** Connect the test leads in parallel with the component or circuit point where you want to measure the voltage.
- For DC voltage, observe polarity: red to positive (+), black to negative (-).
 - For AC voltage, polarity is not critical.
5. **Read Measurement:** Read the voltage value directly from the analog scale. Use the scale corresponding to your selected range. For improved accuracy, view the needle directly from above to avoid parallax error (the mirror behind the needle helps with this).
6. **Disconnect:** Always disconnect the test leads from the circuit before changing ranges or disconnecting from the meter.

5.2 Specific Range Selection

- **DC Voltage Ranges:** 0.1V, 1V, 10V, 100V, 1000V. Use the terminals labeled "DC VOLTAGE".
- **AC Voltage Ranges:** 3V, 10V, 100V, 1000V. Use the terminals labeled "AC VOLTAGE".

Note: The 0.1V DC range is highly sensitive. Exercise caution to avoid overvoltage.

6. MAINTENANCE

The PeakTech 3296 Analog Voltmeter requires minimal maintenance to ensure long-term accuracy and performance.

- **Cleaning:** Wipe the device with a soft, dry cloth. For stubborn dirt, a slightly damp cloth with mild detergent can be used. Ensure no liquid enters the device. Do not use abrasive cleaners or solvents.
- **Storage:** When not in use, store the voltmeter in a clean, dry, and dust-free environment, away from extreme temperatures and direct sunlight.
- **Test Leads:** Regularly inspect test leads for wear, cuts, or damage. Replace damaged leads immediately to ensure safety and accurate measurements.
- **Calibration:** While the device is designed for stability, periodic calibration by a qualified technician may be necessary for applications requiring certified accuracy.

7. TROUBLESHOOTING

If you encounter issues with your PeakTech 3296, refer to the following table:

Problem	Possible Cause	Solution
Needle does not move or shows incorrect reading.	<p>Incorrect range selected.</p> <p>Loose or faulty test leads.</p> <p>No voltage present in the circuit.</p> <p>Overload condition (needle pinned).</p>	<p>Select a higher range, then adjust down.</p> <p>Check lead connections and integrity.</p> <p>Verify circuit power.</p> <p>Disconnect immediately and re-evaluate circuit voltage.</p>
Needle is not at zero when disconnected.	Mechanical zero offset.	Use the zero adjustment screw below the display to align the needle.
Inconsistent readings.	<p>Poor contact with circuit.</p> <p>External interference.</p>	<p>Ensure firm contact with test points.</p> <p>Move device away from strong magnetic fields or other electronic devices.</p>

If the problem persists after attempting these solutions, contact PeakTech customer support or a qualified service technician.

8. SPECIFICATIONS

Technical specifications for the PeakTech 3296 Analog Voltmeter:

Parameter	Value
Model	P 3296
Measurement Type	Analog Voltmeter
DC Voltage Ranges	0-0.1V, 0-1V, 0-10V, 0-100V, 0-1000V
AC Voltage Ranges	0-3V, 0-10V, 0-100V, 0-1000V
Input Terminals	4 mm Safety Sockets
Power Supply	Not required (passive device)
Protection Class	II (Double Insulation)
Housing Material	Durable ABS Plastic
Dimensions (L x W x H)	6.69 x 5.12 x 2.17 inches (approx. 170 x 130 x 55 mm)
Weight	1.22 pounds (approx. 0.55 kg)

9. WARRANTY AND SUPPORT

Specific warranty information for the PeakTech 3296 Analog Voltmeter is typically provided with the product packaging or can be found on the official PeakTech website. Please refer to these resources for details regarding warranty periods and conditions.

For technical support, service, or inquiries, please contact your local PeakTech distributor or visit the official PeakTech website for contact information.

