PEAKMETER MS2205

PEAKMETER MS2205 Digital Power Clamp Meter User Manual

Comprehensive guide for the PEAKMETER MS2205 Three-Phase Power Clamp Meter.

1. Introduction

The PEAKMETER MS2205 is a high-accuracy digital power clamp meter designed for measuring three-phase power and harmonics. This handheld instrument combines voltage, current, and power measurements with advanced digital signal processing capabilities. It is equipped with powerful software management and data processing functions, allowing for precise measurement and analysis of various electrical parameters including AC voltage, AC current, active power, apparent power, reactive power, power factor, frequency, and harmonic distortion. The meter is suitable for electrical measurement and examination of on-site power equipment and power-supplying circuits, offering a compact and lightweight design for ease of use.



Image 1: PEAKMETER MS2205 Digital Power Clamp Meter.

2. Product Overview

2.1. Key Features

- Measures 3-phase power and harmonic with RS232C interface.
- Large dual 6000 counts LCD display.
- Measures AC voltage, AC current, active power, apparent power, reactive power, power factor, frequency, and harmonic.
- True RMS measurement for accurate readings.
- Max. memory for 100 groups of data.
- Provided RS232C connection interface and Windows graphics software for data analysis.
- Hand-held, clamp-type structure, with light weight, convenient for carry-on.
- Auto Power Off function.
- Data Hold function.
- Backlight display.

2.2. Package Contents

Verify that all items listed below are present and in good condition:

- PEAKMETER MS2205 Digital Power Clamp Meter
- Test Leads (Red, Yellow, Green, Black)
- Alligator Clips
- RS232C Interface Cable
- Software CD
- Carrying Bag
- User Manual



Image 2: PEAKMETER MS2205 and included accessories.

2.3. Meter Layout and Controls

Familiarize yourself with the various parts and controls of the MS2205 meter:



Image 3: Detailed view of the PEAKMETER MS2205 with labeled components.

- **Clamp Jaw:** For non-contact current measurement.
- **Rotary Switch:** Selects measurement functions.
- **LCD Display:** Shows measurement readings and indicators.
- **Function Buttons:**
    - **MODE:** Toggles between different measurement modes (e.g., ACV, ACA, Power).
    - **V/Hz:** Selects Voltage or Frequency measurement.
    - **A:** Selects Current measurement.
    - **kW/PF:** Selects Active Power or Power Factor measurement.
    - **kVA/kVAr:** Selects Apparent Power or Reactive Power measurement.
    - **kWh/TIME:** Selects Active Energy or Time measurement.
    - **Σ:** Power Summation.
    - **RS232:** Activates RS232 communication.
    - **CLEAR:** Clears stored data.
    - **MAX/MIN:** Displays maximum/minimum recorded values.

- **SAVE:** Saves current measurement data.
- **BACKLIGHT:** Activates/deactivates display backlight.

- **Input Terminals (V1, V2, V3, COM):** For connecting test leads for voltage measurements.

3. Setup

3.1. Battery Installation

1. Ensure the meter is powered off.
2. Locate the battery compartment on the back of the meter.
3. Open the battery compartment cover.
4. Insert 4 x 1.5V AA batteries, observing correct polarity. (Note: Batteries may not be included due to shipping regulations.)
5. Close the battery compartment cover securely.

3.2. Connecting Test Leads

For voltage and power measurements, connect the test leads to the appropriate input terminals:

- Connect the black test lead to the **COM** terminal.
- Connect the red, yellow, and green test leads to the **V1**, **V2**, and **V3** terminals respectively, corresponding to the phases being measured.
- Ensure all connections are firm and secure.

4. Operating Instructions

4.1. Powering On/Off

Rotate the central rotary switch from the 'OFF' position to any desired measurement function to power on the meter. To power off, rotate the switch back to 'OFF'. The meter also features an auto power-off function to conserve battery life.

4.2. Measuring AC Voltage and Frequency

1. Set the rotary switch to the 'V/Hz' position.
2. Connect the test leads to the circuit under test (e.g., V1 and COM for single-phase voltage).
3. The display will show the AC voltage. Press the 'V/Hz' button to toggle between voltage and frequency readings.

4.3. Measuring AC Current

1. Set the rotary switch to the 'A' position.
2. Open the clamp jaw and enclose a single conductor of the circuit. Ensure the jaw is fully closed.
3. The display will show the AC current.

4.4. Measuring Three-Phase Power and Harmonics

The MS2205 is designed for comprehensive three-phase power analysis. Connect the voltage test leads (V1, V2, V3, COM) to the respective phases and neutral, and clamp the current jaw around one of the phase conductors. Use the function buttons (kW/PF, kVA/kVAr, kWh/TIME) to cycle through active power, apparent power, reactive power, power factor, and active energy measurements. The meter also supports harmonic analysis.

For detailed instructions on specific three-phase configurations and harmonic measurements, refer to the full manual or the provided software documentation.

Your browser does not support the video tag.

Video 1: Demonstration of the PEAKMETER MS2205/MS2203 Clamp Multimeter in use, showing various measurements.

MS2203(PM2203)Specifications	Range	Accuracy
AC Voltage	0.1 ~ 600V	±(1.2%+5)
AC Current	0.1 ~ 1000A	±(2.0%+5)
Active Power	0.1kW ~ 600kW	±(3.0%+5)
Apparent Power	0.1kVA ~ 600kVA	±(3.0%+5)
Reactive Power	0.1kVAr ~ 600kVAr	±(4.0%+5)
Power Factor	0.3 ~ 1	±(0.02%+2)
Active Energy	0.001kWh ~ 10000kWh	±(3.0%+2)
Frequency	20Hz ~ 1000Hz	±0.5%
Feature		
Display	9999 Counts	
Data logging and recall	28 groups	
Jaw opening	φ50mm/2.0"	
True RMS	Ture Root Mean Square Measurement	
Auto Rang	√	
Data hold	√	
Max/Min	√	
Display Back Light	√	
Low Battery indication	√	
Rs232 Interface	√	
General		
Power Supply	4×1.5V AA Batteries	
Weight	640g	
Size	300mm×103mm×51mm	
Safety Rating	EN61010-1, EN61010-2-032, EN61326, CAT. Ⅲ 600V	

Image 4: PEAKMETER MS2205 in an electrical testing setup.

4.5. Data Logging and PC Interface

The MS2205 can store up to 100 groups of measurement data. Use the 'SAVE' button to store readings and the 'MAX/MIN' buttons to recall them. The meter also features an RS232C optical interface for connecting to a computer. The included Windows graphics software allows for real-time data monitoring, analysis, and report generation.
To use the PC interface:

1. Install the provided software on your computer.
2. Connect the meter to your computer using the RS232C cable.
3. Launch the software and follow the on-screen instructions to establish communication and begin data transfer.

5. Maintenance

5.1. Cleaning

Wipe the meter's casing with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the meter is completely dry before use or storage.

5.2. Battery Replacement

When the low battery indicator appears on the display, replace the batteries promptly to ensure accurate measurements. Refer to section 3.1 for battery installation instructions.

5.3. Storage

If the meter is not used for an extended period, remove the batteries to prevent leakage and damage. Store the meter in its carrying bag in a cool, dry place, away from direct sunlight and extreme temperatures.

6. Troubleshooting

Problem	Possible Cause	Solution
Meter does not power on.	Dead or incorrectly installed batteries.	Replace batteries, ensuring correct polarity.
No reading on display.	Incorrect function selected, open circuit, or test leads not properly connected.	Verify rotary switch setting, check circuit continuity, ensure test leads are firmly connected.
Inaccurate current reading.	Clamp jaw not fully closed, multiple conductors inside jaw, or strong external magnetic fields.	Ensure jaw is closed, clamp only one conductor, move away from strong magnetic sources.
RS232 communication failure.	Incorrect cable connection, driver issues, or software not configured correctly.	Check cable, reinstall drivers, verify software settings.

7. Specifications (MS2205)

The following table outlines the key specifications for the PEAKMETER MS2205 Digital Power Clamp Meter:



Image 5: Detailed specifications for the PEAKMETER MS2205.

Measurement	Range	Accuracy
AC Voltage	80V/150V/400V/600V	±(1.0%+5)
AC Current	20A/40A/100A/200A/450A/1000A	±(2%+5)
Single-phase active power	30kW/60kW/120kW/150kW/300kW/600kW	±(3%+5)
Three-phase active power	3kW/12kW/30kW/120kW/150kW/600kW	±(3%+5)
Power factor	0.3~1 Capacitive, 0.3~1 Inductive	±(2%+2)
Passive power	3kVAr/12kVAr/30kVAr/120kVAr/150kVAr/600kVAr	±(3%+5)
Frequency	30Hz/1kHz	0.5%+1
Harmonic number	1	±(3.0%+10)
	2~6	±(3.5%+10)
	7~8	±(4.5%+10)

Measurement	Range	Accuracy
	9~10	±(5.0%+10)
	11~15	±(7%+10)
	16~20	±(10%+10)

General Specifications:

- **Display:** 6000 counts
- **Data Hold:** Yes
- **Back Light:** Yes
- **RS232C Interface:** Yes
- **Auto Power Off:** Yes
- **Data Recording:** 100 groups
- **Power Supply:** 4 x 1.5V AA Batteries
- **Size:** 300mm x 103mm x 51mm (11.81 x 4.06 x 2.01 inches)
- **Weight:** 500g (1.1 lbs)
- **Jaw Size:** Φ50mm (2.0 inches)
- **Safety Rating:** EN61010-1, EN61010-2-032, EN61326, CAT III 600V

8. Warranty and Support

The PEAKMETER MS2205 Digital Power Clamp Meter comes with a standard manufacturer's warranty against defects in materials and workmanship. Please refer to the warranty card included in your package for specific terms and conditions, including the warranty period and coverage details.
For technical support, service, or warranty claims, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

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