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Neufday PM5900

Neufday PEAKMETER PM5900 Three-Phase Motor Rotation Indicator Tester User Manual

1. Introduction

The Neufday PEAKMETER PM5900 is a portable, handheld instrument designed for testing the magnetic field direction of three-phase systems, phase rotation, and motor rotation direction. This device provides a convenient and reliable method for electrical professionals to ensure correct wiring and motor operation without direct contact for motor rotation testing.

2. Safety Information

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **WARNING:** To avoid electrical shock, do not operate the device with the battery door open.
- Always ensure the device is in good working condition before use. Do not use if damaged.
- Observe all local and national safety codes.
- Do not exceed the maximum input voltage ratings specified for the device (Un=400/230V AC, Umax=1.400V AC).
- Use only the provided test leads or suitable replacements that meet safety standards.
- Keep hands and fingers away from live circuits during testing.
- This device is rated for IEC61010-1, 600V CAT III. Adhere to these safety categories.



Figure 2.1: Rear view of the PM5900, highlighting the battery compartment and safety warning.

3. Product Overview

The PEAKMETER PM5900 is designed for ease of use and reliability. It features a clear indicator panel and robust construction suitable for

industrial environments.

3.1 Package Contents



Figure 3.1: PM5900 package contents.

The package typically includes:

- PEAKMETER PM5900 Main Unit
- Three Test Leads (Red, Green, Black)
- Three Alligator Clips (Red, Green, Black)
- Carrying Pouch
- User Manual (this document)

3.2 Device Layout

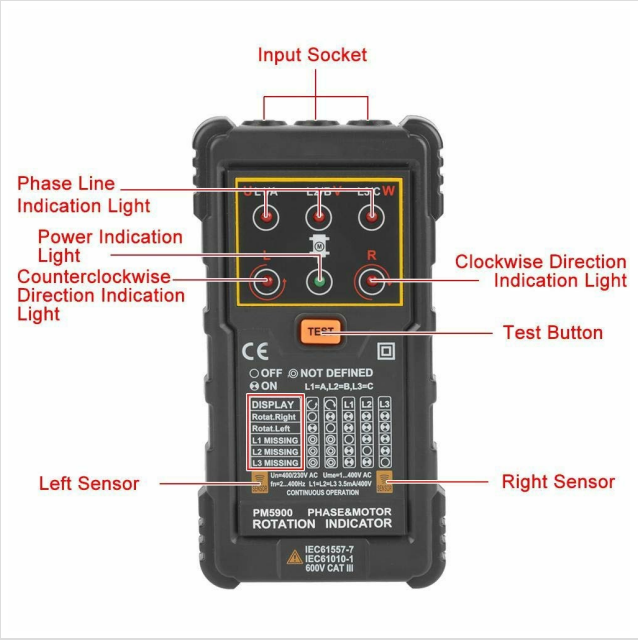


Figure 3.2: Front Panel Layout of the PM5900.

The front panel of the PM5900 features the following components:

1. **Input Sockets:** Three sockets for connecting test leads (UL1/A, L2/B/V, L3/C/W).
2. **Phase Line Indicators:** Three LEDs (L1, L2, L3) to indicate the presence of each phase.
3. **Power Indicator:** LED to show the device is powered on.

4. **Direction Indicators:** LEDs for Clockwise (R) and Counter-Clockwise (L) rotation.
5. **Test Button:** Activates the testing function.
6. **Display Area:** Shows various indicators for rotation direction, missing phases, and sensor status.
7. **Left Sensor Position:** Area for non-contact motor rotation sensing.
8. **Right Sensor Position:** Area for non-contact motor rotation sensing.



Figure 3.3: Top view showing input jacks.

4. Specifications

Feature	Specification
Brand	Neufday
Model	PM5900
Power Source	Battery Powered (3 x 1.5V AA batteries)
Color	Black, Red, Green
Item Weight	200 Grams
Dimensions (L x W x H)	4.92 x 2.64 x 1.22 inches (125 x 67 x 31 mm)
Voltage Range	Un=400/230V AC, Umax=1.400V AC
Frequency Range	fn=2...400Hz
Current	L1=L2=L3 3.5mA/400V
Safety Rating	IEC61010-1, 600V CAT III

5. Setup

5.1 Battery Installation

The PM5900 requires three 1.5V AA batteries for operation.

1. Ensure the device is powered off.
2. Locate the battery compartment on the back of the device.
3. Use a screwdriver to open the battery compartment cover.
4. Insert three 1.5V AA batteries, observing the correct polarity (+/-) as indicated inside the compartment.
5. Replace the battery compartment cover and secure it with the screw.



Figure 5.1: Battery compartment with batteries removed.

5.2 Connecting Test Leads

For phase sequence testing, connect the provided test leads to the input sockets.

1. Connect the red test lead to the UL1/A input socket.
2. Connect the green test lead to the L2/B/V input socket.
3. Connect the black test lead to the L3/C/W input socket.
4. Attach the alligator clips to the test leads if needed for secure connections to the circuit under test.



Figure 5.2: PM5900 with test leads connected.



Figure 5.3: Alligator clips for test leads.

6. Operating Instructions

6.1 Phase Sequence Testing

This function tests the phase sequence (L1, L2, L3) of a three-phase voltage system.

1. Ensure the test leads are correctly connected to the PM5900.
2. Connect the alligator clips (or probes) of the test leads to the respective phases of the three-phase system: Red to L1, Green to L2, Black to L3.
3. Press the **TEST** button on the device.
4. Observe the indicators:
    - If the phase sequence is correct (L1, L2, L3), the **Rotat.Right** indicator will illuminate, and the **R** (Clockwise) LED will light up.
    - If the phase sequence is reversed (e.g., L1, L3, L2), the **Rotat.Left** indicator will illuminate, and the **L** (Counter-Clockwise) LED will light up.
    - The **L1, L2, L3 Missing** indicators will light up if a phase is not detected.

6.2 Non-Contact Motor Rotation Direction Testing

This function allows for determining the motor's rotation direction without direct electrical connection, by sensing its magnetic field.

1. Ensure the motor is running.
2. Place the PM5900 directly above the motor's drive shaft, aligning the sensor positions (Left Sensor, Right Sensor) with the motor's axis.
3. Press the **TEST** button.
4. Observe the indicators:
    - If the motor is rotating clockwise, the **R** (Clockwise) LED will light up.
    - If the motor is rotating counter-clockwise, the **L** (Counter-Clockwise) LED will light up.
5. For accurate results, ensure the device is held steady and close to the motor's rotating part.

7. Maintenance

- **Cleaning:** Wipe the device with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace batteries when the power indicator dims or the device fails to power on. Refer to Section 5.1 for battery installation instructions.
- **Storage:** When not in use for extended periods, remove the batteries to prevent leakage. Store the device in its carrying pouch in a cool, dry place.
- **Inspection:** Regularly inspect the test leads and alligator clips for any signs of damage (cuts, cracks, exposed wiring). Replace damaged components immediately to ensure safety.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Dead or incorrectly installed batteries.	Check battery polarity; replace with new AA batteries.
Phase indicators (L1, L2, L3) do not light up.	No voltage present on the phase, or poor connection.	Verify power supply to the circuit; ensure test leads are securely connected.
Motor rotation direction is inconsistent or not detected.	Device not positioned correctly over the motor shaft; weak magnetic field.	Reposition the device closer to the motor's drive shaft; ensure motor is running.
"L1 Missing", "L2 Missing", or "L3 Missing" indicator lights up.	One or more phases are not detected.	Check connections of the test leads to the phases; verify power supply for all phases.

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided at the point of purchase or contact your retailer. Keep your purchase receipt as proof of purchase for warranty claims.

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