

## Road Far PM5900

# Road Far PEAKMETER PM5900 Phase and Motor Rotation Indicator User Manual

Model: PM5900

## 1. INTRODUCTION

The PEAKMETER PM5900 Motor and Phase Rotation Indicator is a handheld device designed for testing the magnetic field direction of three-phase systems, phase rotation, and motor rotation direction. This instrument simplifies electrical diagnostics by allowing non-contact motor rotation direction determination.

It is a durable, reliable, and lightweight tool essential for professionals involved in the installation, repair, or maintenance of three-phase systems and motors.

## 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.

- Always observe local and national safety codes.
- Do not use the device if it appears damaged or is operating abnormally.
- Ensure the maximum operating voltage of 400V AC is not exceeded.
- Keep hands and fingers away from live circuits.
- Use appropriate personal protective equipment (PPE) when working with electrical systems.
- The device is designed for indoor use in environments with pollution degree 2 and operating altitude up to 2000m.

## 3. PRODUCT FEATURES

- Tests magnetic field direction of three-phase systems.
- Determines phase rotation.
- Identifies motor rotation direction without direct connection.
- Maximum Operating Voltage: 400V AC for all ranges.
- Durable, reliable, and lightweight design.

- Battery-powered for portability (3 x 1.5V AA batteries, not included).

## 4. PACKAGE CONTENTS

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Verify that all items listed below are present and undamaged upon opening the package.



Image 4.1: PEAKMETER PM5900 with included accessories.

This image shows the PM5900 unit, three test leads with alligator clips (red, green, black), a black carrying case, and a user manual.

- PEAKMETER PM5900 Main Unit
- Test Leads (3 pieces: Red, Green, Black)
- Carrying Case
- User Manual
- *Note: 3 x 1.5V AA batteries are not included and must be purchased separately.*

## 5. DEVICE LAYOUT AND CONTROLS

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Familiarize yourself with the various parts and controls of the PM5900 before operation.



Image 5.1: Front panel layout of the PEAKMETER PM5900.

This diagram highlights key components: Input Jacks (UL1/A, L2/B/V, L3/C/W), Phase Line Indicator Lights (L1, L2, L3), Power Light, Counter-clockwise Indicator Light, Clockwise Indicator Light, Direction Indication Symbol, Test Button, Description of Indicator Light (Rotat.Right, Rotat.Left, L1 Missing, L2 Missing, L3 Missing, Continuous Operation), Left Sensor Position, and Right Sensor Position.

1. **Input Jack (UL1/A, L2/B/V, L3/C/W):** Connect test leads for direct phase testing.
2. **Phase Line Indicator Light (L1, L2, L3):** Illuminates to indicate presence of respective phases.
3. **Power Light:** Indicates the device is powered on.
4. **Counter-clockwise Indicator Light:** Illuminates for counter-clockwise rotation.
5. **Clockwise Indicator Light:** Illuminates for clockwise rotation.
6. **Direction Indication Symbol:** Visual representation of rotation.
7. **Test Button:** Initiates a test sequence.
8. **Display Description:** LEDs indicating "Rotat.Right", "Rotat.Left", "L1 Missing", "L2 Missing", "L3 Missing", and "Continuous Operation".
9. **Left/Right Sensor Position:** Areas for non-contact motor rotation detection.

## 6. SETUP

### 6.1 Battery Installation

The PM5900 requires three 1.5V AA batteries for operation.

1. Locate the battery compartment on the back of the device.
2. Open the battery compartment cover.
3. Insert three 1.5V AA batteries, observing the correct polarity (+/-) as indicated inside the compartment.
4. Close the battery compartment cover securely.

### 6.2 Connecting Test Leads (for direct phase testing)

For direct phase rotation testing, connect the provided test leads:

1. Insert the red test lead into the UL1/A input jack.

2. Insert the green test lead into the L2/B/V input jack.
3. Insert the black test lead into the L3/C/W input jack.
4. Ensure connections are firm before proceeding with testing.

## 7. OPERATING INSTRUCTIONS

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### 7.1 Determining Rotary Field Direction (Direct Contact)

This method uses the test leads to directly measure the phase sequence of a three-phase system.

1. Ensure the device has fresh batteries installed.
2. Connect the test leads to the input jacks as described in Section 6.2.
3. Carefully connect the alligator clips of the test leads to the respective phases of the three-phase system (L1, L2, L3). Observe safety precautions.
4. Press the **TEST** button.
5. Observe the indicator lights:
  - If the **Clockwise Indicator Light** illuminates and "Rotat.Right" LED is on, the rotary field direction is clockwise.
  - If the **Counter-clockwise Indicator Light** illuminates and "Rotat.Left" LED is on, the rotary field direction is counter-clockwise.
  - The L1, L2, L3 phase indicator lights will also illuminate if the phases are present.
  - If any "L Missing" LED illuminates, it indicates a missing phase.

### 7.2 Non-Contact Motor Rotation Indication

This feature allows determining motor rotation direction without direct electrical connection, by sensing the magnetic field.

1. Ensure the device has fresh batteries installed.
2. Place the PM5900 directly above the motor, aligning the Left or Right Sensor Position with the motor's drive shaft.
3. Ensure the motor is running.
4. Observe the indicator lights:
  - The **Clockwise Indicator Light** or **Counter-clockwise Indicator Light** will illuminate to show the motor's rotation direction.
  - The "Continuous Operation" LED may also illuminate during this test.
5. *Note: For accurate results, ensure the device is held steady and close to the motor's rotating part.*

## 8. MAINTENANCE

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Proper maintenance ensures the longevity and accuracy of your PM5900.

- **Cleaning:** Wipe the device with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Battery Replacement:** Replace batteries promptly when the low battery indicator appears or if the device fails to power on. Remove batteries if the device will not be used for an extended period to prevent leakage.
- **Storage:** Store the device in its carrying case in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Inspection:** Regularly inspect the test leads for any signs of damage (cracks, frayed insulation). Replace damaged leads immediately.

## 9. TROUBLESHOOTING

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If you encounter issues with your PM5900, refer to the following common problems and solutions.

| Problem                                | Possible Cause                                                                 | Solution                                                                                                    |
|----------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Device does not power on.              | Dead or incorrectly installed batteries.                                       | Check battery polarity; replace with new AA batteries.                                                      |
| Incorrect or no phase indication.      | Poor connection of test leads; voltage outside specified range; missing phase. | Ensure test leads are securely connected. Verify voltage is within 120-400V AC. Check for "L Missing" LEDs. |
| Inaccurate non-contact motor rotation. | Device not positioned correctly; motor not running or too far.                 | Reposition the device closer to the motor's drive shaft. Ensure the motor is actively rotating.             |
| "L Missing" LED illuminates.           | One or more phases are absent or have a poor connection.                       | Inspect the circuit and test lead connections for the indicated missing phase.                              |

If the problem persists after attempting these solutions, contact customer support.

## 10. SPECIFICATIONS

| Parameter                                                | Value                                |
|----------------------------------------------------------|--------------------------------------|
| Maximum Operating Voltage (Ume)                          | 400V AC for All Ranges               |
| Nominal Voltage Rotary Direction                         | 1 to 400V AC                         |
| Nominal Voltage Phase Indication                         | 120 to 400V AC                       |
| Frequency Range (fn) - Rotary Field                      | 2 to 400Hz                           |
| Test Currents (In Per Phase)                             | Less Than 3.5mA                      |
| Non-Contact Rotary Field Indication Frequency Range (fn) | 2 to 100Hz                           |
| Operating Temperature                                    | 0°C to 40°C                          |
| Operating Altitude                                       | 2000m                                |
| Pollution Degree                                         | 2                                    |
| Power Supply                                             | 3 x 1.5V AA Batteries (not included) |
| Item Weight                                              | Approximately 16 ounces (1 pound)    |
| Dimensions (Package)                                     | 9.3 x 5.5 x 2.2 inches               |

## 11. WARRANTY AND SUPPORT

This product is covered by 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, troubleshooting assistance, or warranty claims, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

Manufacturer: Road Far

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**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.

**Name**

Anonymous

**Email**

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

**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.

Submit question