

## Orno OR-WE-513

# ORNO OR-WE-513 Three-Phase DIN Rail Electricity Meter

User Manual

## 1. INTRODUCTION

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The ORNO OR-WE-513 is a three-phase DIN rail electricity meter designed for direct measurement of active energy in a three-phase system. It provides highly accurate measurements compliant with EN50470-1:2006, EN50470-3:2006, and MID 2014/32/EU directives, making it suitable for billing purposes. The device features a flashing LED indicator for energy consumption and an LCD display (6+2 digits) to show consumed energy. It can display various parameters including total energy, tariff energy, three-phase voltage, three-phase current, active power, reactive power, apparent power, power factor, frequency, and pulse output. The meter supports positive and negative energy measurement and can be adjusted to three measurement modes.



Figure 1: ORNO OR-WE-513 electricity meter in a protective enclosure.

## 2. SAFETY INFORMATION

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- Installation and maintenance must be performed by qualified personnel only.
- Ensure the main power supply is disconnected before any installation or wiring work.
- Adhere to all local and national electrical codes and regulations.
- Do not operate the device if it is damaged or shows signs of malfunction.
- Protect the device from moisture, dust, and extreme temperatures.

## 3. PACKAGE CONTENTS

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The package typically includes:

- 1 x ORNO OR-WE-513 Three-Phase DIN Rail Electricity Meter
- 1 x User Manual (this document)

## 4. TECHNICAL SPECIFICATIONS

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Parameter	Value
Type	Three-phase
Supply Voltage	3 x 230 V/400 V AC, 50/60 Hz
Base Current (I <sub>b</sub> )	5 A
Maximum Current (I <sub>max</sub> )	80 A
Minimum Current (I <sub>min</sub> )	0.25 A
Pulse Frequency	1000 imp/kWh
Accuracy Class	B
MID Compliance	2014/32/EU (Yes)
Display	6 + 2 digits LCD
Pulse Output	Yes
Number of Modules	4.5
Protection Class	IP51
Dimensions (W x H x D)	72 x 100 x 66 mm
Weight	400 g

## 5. SETUP AND INSTALLATION

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### 5.1 Mounting

The ORNO OR-WE-513 meter is designed for mounting on a standard 35mm DIN rail. Ensure the mounting location is dry, free from vibrations, and within the specified operating temperature range.

### 5.2 Wiring Connections

Connect the meter according to the wiring diagram provided on the device and in this manual. Ensure all connections are secure and correctly phased. Refer to Figure 2 and Figure 3 for visual guidance.

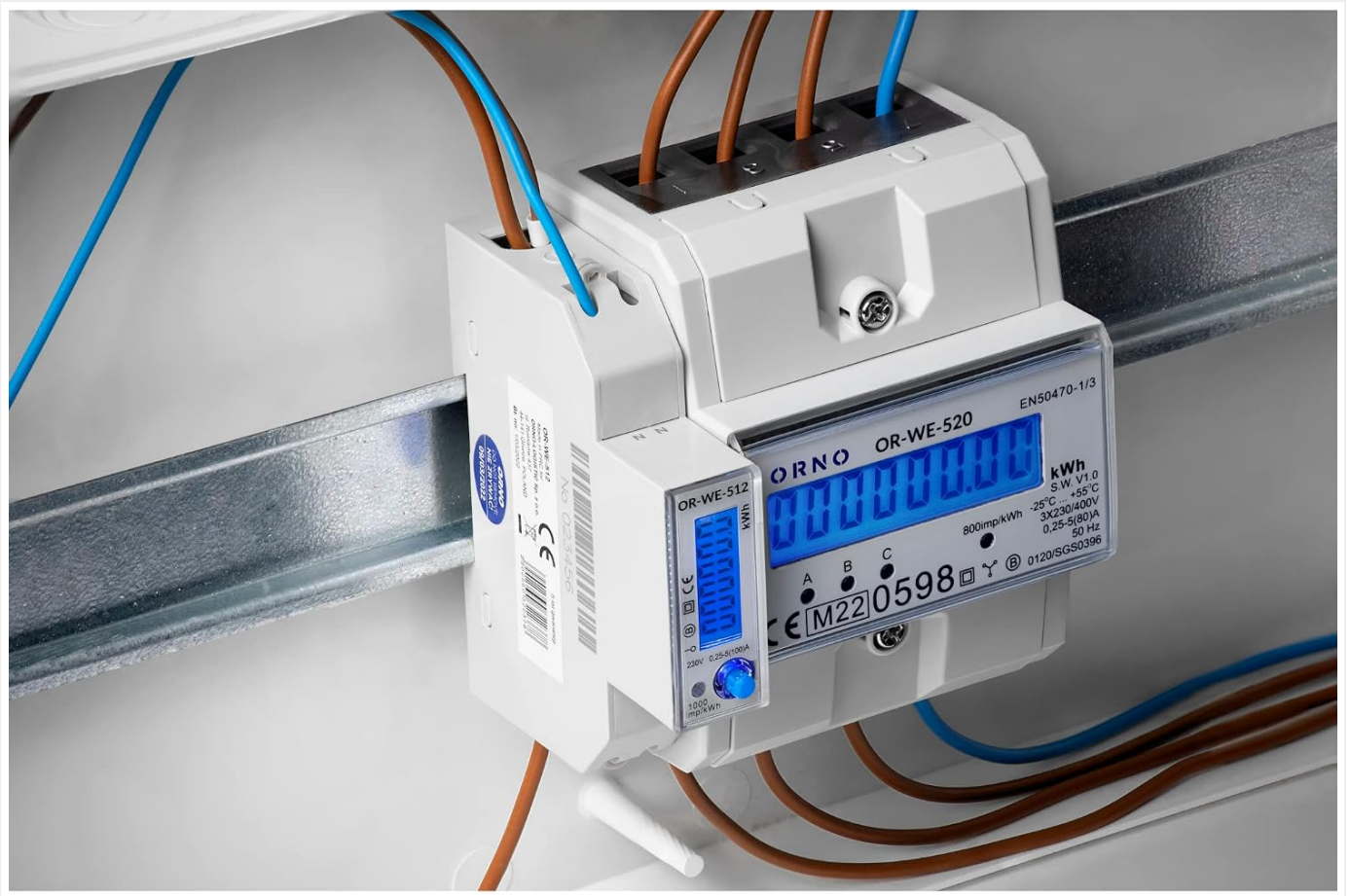


Figure 2: ORNO OR-WE-513 meter with wiring connections in a distribution board.



Figure 3: Side view illustrating the input (IN) and output (OUT) terminals for L1, L2, L3, and N.

**Input Terminals:** L1, L2, L3, N (Live 1, Live 2, Live 3, Neutral)

**Output Terminals:** L1, L2, L3, N (Live 1, Live 2, Live 3, Neutral)

Ensure the correct phase sequence for accurate measurement.

## 6. OPERATING INSTRUCTIONS

## 6.1 Display Overview

The meter features a 6+2 digit LCD display for energy readings. The first six digits indicate whole kilowatt-hours (kWh), and the last two digits indicate decimal parts of kWh.



Figure 4: Close-up of the LCD display and indicators.

## 6.2 LED Pulse Indicator

A flashing LED on the front panel indicates energy consumption. Each flash corresponds to a specific amount of energy consumed (e.g., 1000 imp/kWh means 1000 pulses for every kilowatt-hour consumed).

## 6.3 Data Display Modes

The meter can cycle through various data displays. Use the button on the front panel (if available, or automatic cycling) to view:

- Total Active Energy (kWh)
- Tariff Energy (if configured)
- Three-phase Voltage (V)
- Three-phase Current (A)
- Total Active Power (kW)
- Total Reactive Power (kVar)
- Total Apparent Power (kVA)
- Total Power Factor (PF)
- Frequency (Hz)
- Pulse Output status

## 7. MAINTENANCE

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The ORNO OR-WE-513 electricity meter is designed for maintenance-free operation. No user-serviceable parts are inside. For cleaning, use a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the device is disconnected from power before cleaning.

## 8. TROUBLESHOOTING

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- **No Display:** Check power connections and ensure the main power supply is active. Verify correct wiring.
- **Incorrect Readings:** Ensure the meter is correctly wired according to the three-phase system. Verify that the current and voltage inputs match the system specifications.
- **LED Not Flashing:** If there is power consumption but the LED is not flashing, check for internal faults or contact support.

For issues not resolved by these steps, contact qualified technical support.

## 9. WARRANTY

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ORNO products are covered by a standard manufacturer's warranty against defects in materials and workmanship. Please refer to your purchase documentation or contact your retailer for specific warranty terms and conditions. Keep your proof of purchase for warranty claims.

## 10. SUPPORT

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For technical assistance, product inquiries, or service requests, please contact your local distributor or the ORNO customer support team. Contact information can typically be found on the manufacturer's official website or on the product packaging.

