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## ORNO PRE-450

# ORNO PRE-450 Astronomical Time Programmer User Manual

Model: PRE-450

## 1. INTRODUCTION

This manual provides detailed instructions for the installation, setup, programming, and operation of the ORNO PRE-450 Astronomical Time Programmer. This digital timer is designed for DIN rail mounting and offers advanced scheduling capabilities, including astronomical functions, to control various electrical devices.

## 2. SAFETY INFORMATION

Please read this section carefully before installation and operation to ensure safe use and prevent damage to the device or injury. Installation should only be performed by a qualified electrician.

- Disconnect power before installation or maintenance.
- Ensure the supply voltage matches the device specifications (24-264V AC/DC).
- Do not exceed the maximum current rating of 16A.
- Protect the device from moisture and extreme temperatures outside the operating range (-20°C to +55°C).
- The device is designed for indoor use and DIN rail mounting.

## 3. PRODUCT OVERVIEW AND FEATURES

The ORNO PRE-450 is a versatile digital time programmer equipped with an astronomical clock function. It automatically calculates sunrise and sunset times based on geographical location and time zone, allowing for precise control of connected devices.

### Key Features:

- **Astronomical Function:** Automatically adjusts switching times based on sunrise and sunset.
- **Multiple Program Types:** Supports weekly, annual, and astronomical programming.
- **52 Switching Points:** Allows for flexible and detailed scheduling.
- **Integrated Battery:** Maintains clock settings and program memory for up to 10 years during power outages.

- **Operating Modes:** Manual, Automatic, Holiday, and Random modes.
- **Night Pause Function:** Define periods when the device remains off, even during astronomical ON times.
- **Countdown Function:** For temporary switching operations.
- **Multi-language Menu:** Available in 3 languages.
- **DIN Rail Mounting:** Easy integration into electrical panels.



Figure 1: Front view of the ORNO PRE-450 Astronomical Time Programmer, showing the digital display and control buttons.

#### 4. INSTALLATION

The ORNO PRE-450 is designed for mounting on a standard DIN rail (TH-35mm). It occupies two DIN modules in width.

### Installation Steps:

1. **Power Disconnection:** Ensure the main power supply to the installation area is completely disconnected before proceeding.
2. **Mounting:** Clip the device onto the DIN rail.
3. **Wiring:** Connect the power supply and load according to the wiring diagram provided on the device and below. Ensure all connections are secure.
4. **Power Reconnection:** Once all connections are verified, restore power to the installation.

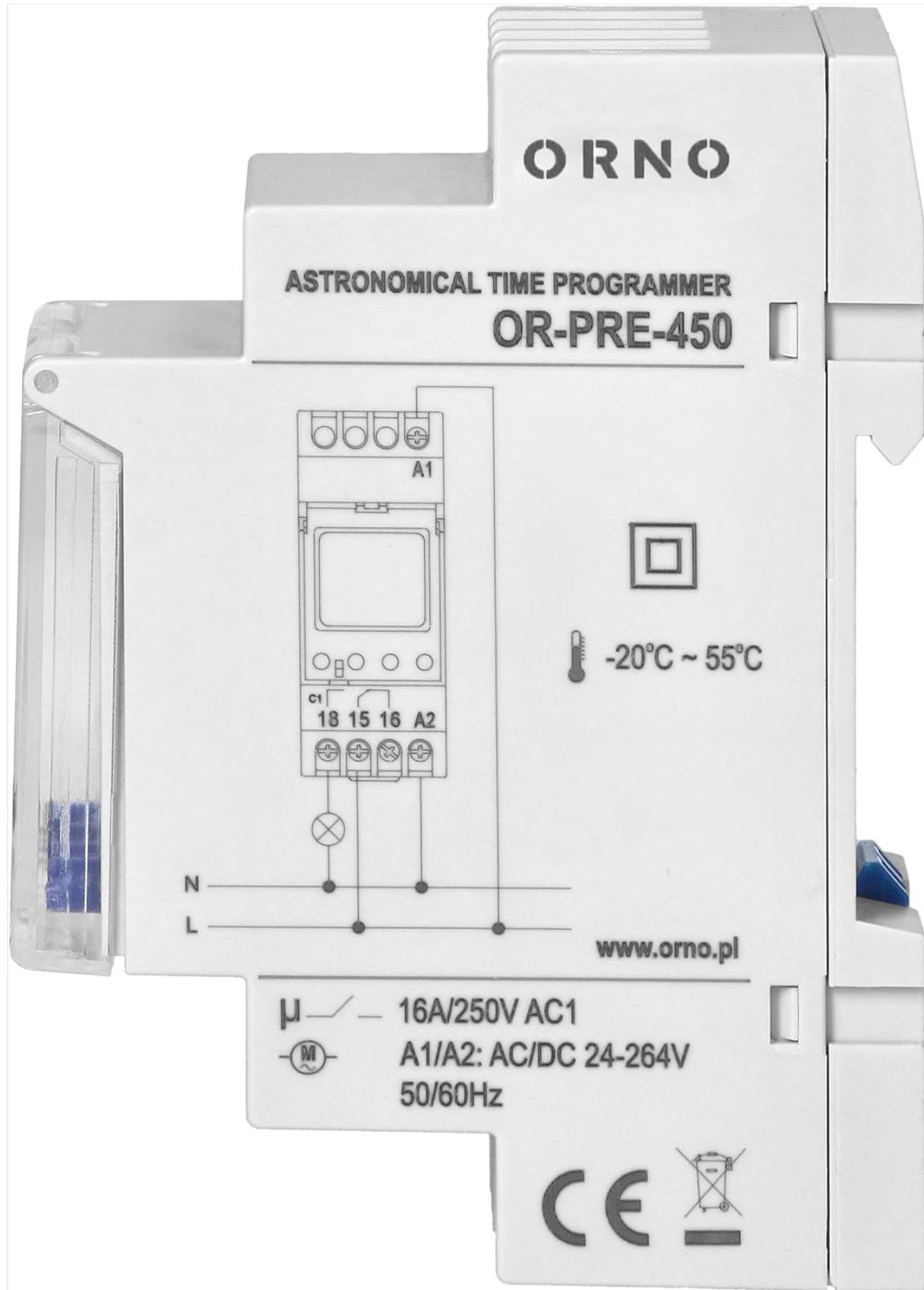


Figure 2: Side view of the ORNO PRE-450, illustrating the wiring diagram for connecting power (N, L) and the relay output (18, 15, 16, A2).

#### Wiring Details:

- **A1/A2:** Power supply input (24-264V AC/DC).
- **18, 15, 16:** Relay output contacts. 15 is common, 18 is normally open (NO), 16 is normally closed (NC).

## 5. INITIAL SETUP

Upon initial power-up or after a prolonged power outage, you may need to set the basic parameters.

## 5.1. Language Selection

1. Press the **MENU** button.
2. Navigate to the Language setting using the arrow buttons (**▲** / **▼**).
3. Press **OK** to select.
4. Choose your desired language (e.g., English) and press **OK** to confirm.

## 5.2. Date and Time Setting

1. From the main menu, navigate to "Time/Date" or similar.
2. Use the arrow buttons to adjust the year, month, day, hour, and minute.
3. Press **OK** after each adjustment to confirm and move to the next field.
4. The device supports automatic summer/winter time switching. Ensure this setting is enabled if desired.

## 5.3. Astronomical Settings (Geographical Coordinates)

For the astronomical function to work correctly, you must input your geographical coordinates (latitude and longitude) and time zone.

1. Navigate to the "Astronomical" or "Location" settings in the menu.
2. Enter the latitude and longitude of your location. These can be found using online maps or GPS services.
3. Set the correct time zone offset (e.g., +1 for Central European Time).
4. Confirm settings with **OK**.

## 6. OPERATING MODES

The ORNO PRE-450 offers several operating modes to suit different needs:

- **Automatic Mode:** The device operates according to the programmed schedules (weekly, annual, astronomical). This is the standard operating mode.
- **Manual Mode:** Allows you to manually switch the output ON or OFF, overriding any active programs. This is typically for temporary control.
- **Holiday Mode:** Suspends all regular programs for a specified period, useful for vacations or extended absences.
- **Random Mode:** Introduces random variations to programmed ON/OFF times, often used for presence simulation.

To switch between modes, access the "Operating Mode" option in the main menu and select the desired mode using the arrow and **OK** buttons.

## 7. PROGRAMMING SCHEDULES

The device supports up to 52 switching points across various program types.

### 7.1. Astronomical Program

This program type uses the calculated sunrise and sunset times. You can set an offset (e.g., turn on 15 minutes before sunset or turn off 30 minutes after sunrise).

1. Go to "Programs" in the menu and select "Astronomical".
2. Choose to set an ON or OFF event.
3. Select "Sunrise" or "Sunset" as the trigger.
4. Set an optional offset in minutes (e.g., -15 for 15 minutes before, +30 for 30 minutes after).
5. Specify the days of the week for this program to be active.
6. Confirm with **OK**.

## 7.2. Weekly/Annual Programs

These programs allow you to set specific ON/OFF times for particular days of the week or dates of the year.

1. Go to "Programs" and select "Weekly" or "Annual".
2. Choose an empty program slot.
3. Set the desired ON time (hour and minute).
4. Set the desired OFF time (hour and minute).
5. For weekly programs, select the days of the week. For annual programs, select the specific date(s).
6. Confirm with **OK**.

## 7.3. Night Pause Function

The night pause function allows you to define a period during which the output will remain OFF, overriding any ON commands from other programs, typically used during nighttime hours.

1. Navigate to "Night Pause" in the menu.
2. Set the start time for the pause.
3. Set the end time for the pause.
4. Enable the night pause function.
5. Confirm with **OK**.

## 8. MAINTENANCE

The ORNO PRE-450 is designed for maintenance-free operation. However, periodic checks are recommended.

- Ensure the device is free from dust and debris.
- Verify that all wiring connections remain secure.
- The internal battery (CR2450) has a lifespan of approximately 10 years for memory backup. If the device frequently loses time or program settings after power outages, the battery may need replacement by a qualified technician.

## 9. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	No power supply or incorrect wiring.	Check power connections (A1/A2) and ensure power is supplied. Verify wiring against diagram.

Problem	Possible Cause	Solution
Programs are not executing.	Device is in Manual or Holiday mode; incorrect program settings; Night Pause active.	Switch to Automatic mode. Review program settings for correct times and days. Check Night Pause settings.
Astronomical function is inaccurate.	Incorrect geographical coordinates or time zone.	Verify and correct latitude, longitude, and time zone settings.
Time/date resets after power outage.	Internal battery (CR2450) is depleted or faulty.	The internal battery may need replacement. Contact a qualified technician.

## 10. TECHNICAL SPECIFICATIONS

<b>Brand</b>	ORNO
<b>Model</b>	PRE-450
<b>Supply Voltage</b>	24 – 264 V AC/DC
<b>Max Current</b>	16 A
<b>Rated Load</b>	2300 W
<b>Frequency</b>	50/60 Hz
<b>Number of Programs</b>	52
<b>Number of Relay Outputs</b>	1
<b>Operating Modes</b>	Manual, Automatic, Holiday, Random
<b>Program Types</b>	Weekly, Annual, Astronomical
<b>Minimum Operating Time</b>	1 minute
<b>Integrated Battery</b>	CR2450 (Memory backup: 10 years)
<b>Mounting</b>	DIN rail (TH-35mm)
<b>Protection Index (IP)</b>	20
<b>Operating Temperature</b>	-20 °C to +55 °C
<b>Dimensions (L x W x H)</b>	6.4 x 3.6 x 9 cm
<b>Weight</b>	135 g

# WYMIARY / DIMENSIONS / ABMESSUNGEN (mm)

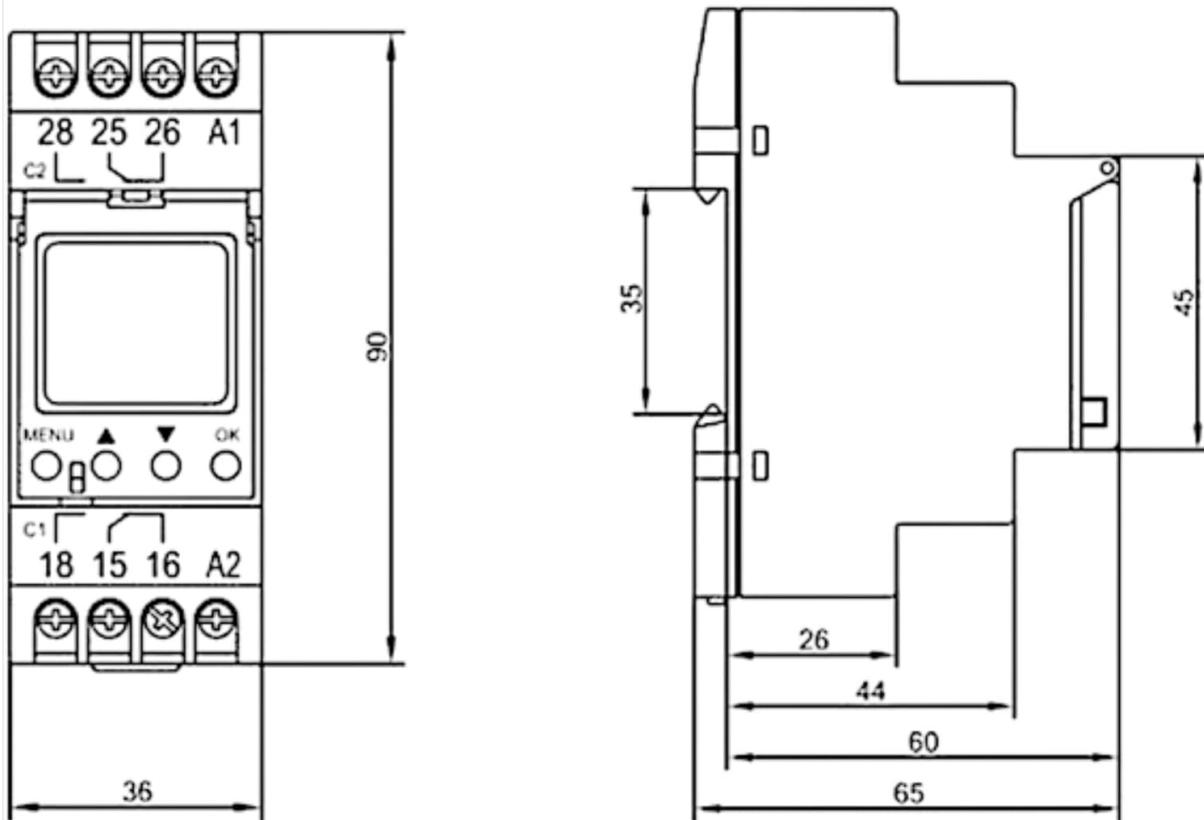


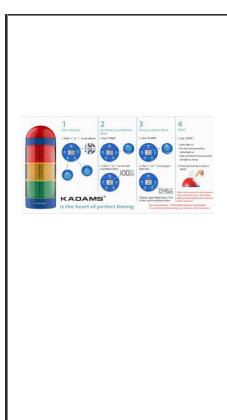
Figure 3: Dimensional drawing of the ORNO PRE-450, indicating key measurements for installation.

## 11. WARRANTY AND SUPPORT

For warranty information, please refer to the terms and conditions provided at the point of purchase. For technical support or further assistance, please contact your retailer or the manufacturer directly. Keep your purchase receipt as proof of purchase.

Manufacturer: ORNO

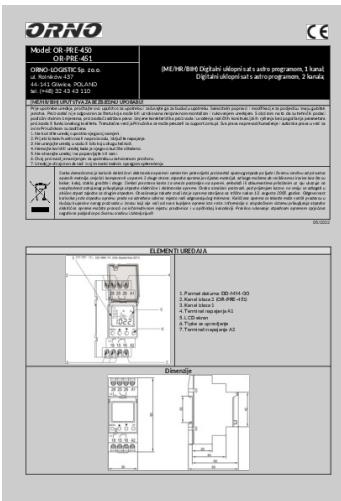
## Related Documents - PRE-450



### [KADAMS Visual Timer: Setup and Usage Guide](#)

Comprehensive guide to setting up and using the KADAMS Visual Timer, a traffic light-style countdown device for effective time management in classrooms and homes. Learn to adjust volume, set countdown and pre-alarm times, and operate the timer.

	<p><a href="#"><b>KRUPS ProAroma Time Coffee Maker Model 314: Instructions for Use and Warranty</b></a></p> <p>Comprehensive guide for the KRUPS ProAroma Time coffee maker (Model #314), covering setup, operation, features like programmable timer and aroma selection, cleaning, decalcifying, and warranty information.</p>
	<p><a href="#"><b>MEAN WELL NPB-450 Series: 450W Intelligent Battery Charger - Features, Specs, and Applications</b></a></p> <p>Detailed specifications and features of the MEAN WELL NPB-450 series intelligent battery chargers. Learn about their ultra-wide output range, CANBus connectivity, programmable charging, and applications in various industries.</p>
	<p><a href="#"><b>IJOY LOGO Premium Wireless Headset User Manual</b></a></p> <p>Comprehensive user manual for the IJOY LOGO over-ear wireless headset, covering setup, functions, safety, and specifications. Learn how to pair, charge, and use your headset.</p>
	<p><a href="#"><b>Philips Pure Essentials Collection Steamer HD9140/91 - Features and Specifications</b></a></p> <p>Discover the Philips Pure Essentials Collection Steamer HD9140/91. This 10L, 900W steamer features a digital timer, time pre-setting, aroma enhancer, keep-warm function, and a sleek black plastic/metal design. Learn about its features like the aroma booster, recipe book, cord wrap, stackable bowls, and external water inlet.</p>
	<p><a href="#"><b>MEAN WELL HRPG-450 Series: 450W Single Output PFC Power Supply Specifications</b></a></p> <p>Detailed specifications and features for the MEAN WELL HRPG-450 series of 450W single-output power supplies, including universal AC input, active PFC, high efficiency, and comprehensive protection features.</p>



## [pdf] User Manual

Agnieszka Grzeslo Model OR PRE 450 451 ORNO 1W 2W Odstupanje napona napajanja ±10% Broj kanala 1 2 programa 52 100 manual ME files orno pl support ManualsUser |||

**Model: OR-PRE-450 OR-PRE-451 ORNO-LOGISTIC Sp. z o.o. ul. Rolnikw 437 44-141 Gliwice, POLAND tel. 48 32 43 43 110 ME/HR/BIH Digitalni uklopní sat s astro programom, 1 kanal; Digitalni uklopní sat s astro programom, 2 kanala; ME/HR/BIH UPUTSTVA ZA BEZBJEDNU UPORABU Prije upotrebe ureaja, pr...**

lang:hr score:30 filesize: 2.28 M page\_count: 11 document date: 2022-09-29



## [pdf]

Karta katalogowa or pre 450 product sheet 3063 files orno pl |||

**Karta katalogowa Elektroniczny programator astronomiczny i czasowy, 52 programy, 3 języki menu, 1 wyjście przekanikowe max.16A/230V, szeroko 2 moduły, DIN TH-35mm** Marka: Orno Symbol: OR-PRE-450 Ean: 5908254824586 OPIS PRODUKTU Wielofunkcyjny programator czasowy przydatny w każdym domu i firmie, pr...

lang:pl score:27 filesize: 3.91 M page\_count: 4 document date: 2024-07-17



## [pdf] Datasheet Dimension Guide

Product data sheet ORNO Marka Orno Symbol OR PRE 450 Ean 5908254824586 PRODUCT

**DESCRIPTION** This multi functional timer allows to save electricity and facilitates the use of or pre product 3063 files orno pl en |||

**Product data sheet DIN rail digital timer, 100 programmes, 3 menu languages, 1 chanel, max.16A/230V, 2 modules wide** Marka: Orno Symbol: OR-PRE-450 Ean: 5908254824586 **PRODUCT DESCRIPTION** This multi-functional timer allows to save electricity and facilitates the use of various electrical devices....

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