Bemko A25-TPA1

Bemko A25-TPA1 Astronomical Programmer User Manual

Model: A25-TPA1 (TPA1 Series)

1. Introduction

This manual provides detailed instructions for the installation, setup, and operation of the Bemko A25-TPA1 Astronomical Programmer. This device is designed to control electrical circuits based on astronomical calculations (dawn and dusk times) and user-defined schedules. Please read this manual thoroughly before installation and use to ensure safe and correct operation.

2. Safety Information

WARNING: Installation and maintenance must be performed by qualified personnel only. Disconnect power before performing any work on the device or connected circuits.

- Ensure the power supply voltage matches the device's specifications (24-264V AC/DC).
- Do not expose the device to moisture, extreme temperatures, or corrosive environments.
- Verify all wiring connections are secure and correct before applying power.
- The device is rated IP20, meaning it is protected against solid objects larger than 12.5mm but has no protection against water. Install in a suitable enclosure.

3. Product Overview

The Bemko A25-TPA1 is a compact, DIN rail-mountable astronomical programmer. It features a digital display and intuitive buttons for programming. The device is designed for precise control of lighting, heating, or other electrical loads based on natural light cycles and user-defined schedules.



Figure 1: Front view of the Bemko A25-TPA1 Astronomical Programmer. The image shows the device with its digital display, 'MENU', 'UP', 'DOWN', and 'OK' buttons, and terminal connections at the bottom. The Bemko logo and model identifier 'TPA11' are visible, along with

electrical specifications and an IP20 rating.

3.1. Components and Controls

- **Display:** Shows current time, date, program status, and menu options.
- **MENU Button:** Accesses the main menu and programming options.
- **UP (▲) / DOWN (▼) Buttons:** Navigate through menu options and adjust values.
- **OK Button:** Confirms selections and saves settings.
- **Terminals:** Connections for power supply (A1/A2) and output relay (C1, 15, 16, 18).

4. Installation

4.1. Mounting

The Bemko A25-TPA1 is designed for DIN rail mounting. Snap the device onto a standard 35mm DIN rail in an electrical enclosure. Ensure adequate ventilation and clearance around the device.

4.2. Wiring

Refer to the wiring diagram below for correct electrical connections. Ensure all connections are made with appropriate wire gauges and are securely tightened.



Figure 2: Wiring diagram for the Bemko A25-TPA1. The diagram illustrates connections for the power supply (N, L to A1/A2) and the output relay (terminals 15, 16, 18 for a single-pole double-throw contact, controlling a load).

- **Power Supply (A1, A2):** Connect the phase (L) and neutral (N) wires to terminals A1 and A2 respectively. The device accepts 24-264V AC/DC.
- **Output Relay (C1, 15, 16, 18):** The device has one potential-free changeover contact (SPDT).
  - **15:** Common terminal.
  - **16:** Normally Closed (NC) contact.
  - **18:** Normally Open (NO) contact.
- Connect the load to the appropriate output terminals (e.g., Common to 15, Load to 18 for NO operation).

5. Setup and Initial Configuration

5.1. Power On

After successful wiring, apply power to the device. The display will illuminate, and the device will enter its initial setup mode or display the current time.

5.2. Setting Date and Time

1. Press the **MENU** button to enter the main menu.
2. Navigate using **UP**/**DOWN** buttons to 'Time/Date' or similar option. Press **OK**.
3. Adjust the year, month, day, hour, and minute using **UP**/**DOWN** buttons. Press **OK** after each adjustment to confirm.
4. Exit the menu by repeatedly pressing **MENU** or waiting for timeout.

5.3. Setting Location (Astronomical Function)

For accurate astronomical calculations, the device requires your geographical location (latitude and longitude) or a pre-defined city.

1. From the main menu, navigate to 'Location' or 'Astro Settings'. Press **OK**.
2. Choose to enter Latitude/Longitude manually or select from a list of cities (if available).
3. Adjust values using **UP**/**DOWN** and confirm with **OK**.
4. Some devices allow an offset for dawn/dusk times (e.g., turn on 15 minutes before sunset). Adjust this if desired.

6. Operating Instructions

6.1. Programming Astronomical Events

The astronomical function automatically calculates sunrise and sunset times based on the set location and date.

1. Enter the main menu and select 'Program' or 'Astro Program'. Press **OK**.
2. Choose to set an 'ON' event (e.g., at sunset) or an 'OFF' event (e.g., at sunrise).
3. Select the desired astronomical event (e.g., 'Sunset', 'Sunrise').
4. Optionally, set an offset (e.g., 'Sunset - 15 min' or 'Sunrise + 30 min').
5. Confirm and save the program.

6.2. Programming Fixed Time Events

In addition to astronomical events, you can program specific ON/OFF times.

1. Enter the main menu and select 'Program' or 'Timer Program'. Press **OK**.
2. Select an empty program slot.

3. Set the desired 'ON' time (hour and minute) and the days of the week for this event.
4. Set the desired 'OFF' time (hour and minute) and the days of the week for this event.
5. Confirm and save the program.

6.3. Manual Override

The device typically includes a manual override function to temporarily switch the output ON or OFF, independent of the programmed schedule.

- Look for a dedicated button (e.g., 'ON/OFF' or 'Manual') or an option within the menu.
- Pressing this button usually cycles through 'ON', 'OFF', and 'AUTO' modes.
- In 'AUTO' mode, the programmer follows the set schedule.

7. Maintenance

The Bemko A25-TPA1 is designed for maintenance-free operation. However, periodic checks are recommended.

- **Cleaning:** Disconnect power before cleaning. Use a soft, dry cloth to wipe the device. Do not use abrasive cleaners or solvents.
- **Connection Check:** Periodically inspect terminal connections to ensure they remain tight and free from corrosion.
- **Battery (Internal):** The device contains an internal battery for retaining settings during power outages. This battery is typically long-lasting and not user-replaceable. If the device consistently loses settings after power loss, contact support.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	No power supply; incorrect wiring; faulty device.	Check power connections (A1/A2). Verify voltage. Consult a qualified electrician.
Programs are not executing.	Incorrect time/date; program disabled; manual override active; incorrect location settings.	Verify current time and date. Check program status (enabled/disabled). Ensure device is in 'AUTO' mode. Re-check location settings.
Astronomical times are inaccurate.	Incorrect location (latitude/longitude) or time zone.	Re-enter or verify the geographical location settings. Ensure the current date and time are correct.
Output relay not switching.	Incorrect wiring of load; faulty relay.	Check load wiring to terminals 15, 16, 18. Ensure the load is within the device's rating.

9. Technical Specifications

Feature	Specification
Brand	Bemko
Model	A25-TPA1 (TPA1 Series)
Input Voltage	24-264V AC/DC

Feature	Specification
Frequency	50/60 Hz
Output Relay	1 x Changeover Contact (SPDT)
Contact Rating	16A / 250V AC1
Operating Temperature	-20°C to 55°C
Protection Class	IP20
Dimensions (Approx.)	90 x 65 x 36 mm (Height x Width x Depth) *(Note: Original data stated cm, but mm is assumed for a DIN rail module)*
Weight	0.14 kg (140 g)
Display Size	1.5 Inches
Manufacturer	BEMKO SP. Z O.O.

10. Warranty and Support

Bemko products are manufactured to high-quality standards. For information regarding warranty terms and conditions, please refer to the official Bemko website or contact your local distributor. For technical support or service inquiries, please contact Bemko customer service with your product model number (A25-TPA1) and purchase details.

Manufacturer: BEMKO SP. Z O.O.

Website: www.bemko.eu (as seen on device)

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.

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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