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> GAO EMT500ET Digital Timer for Distribution Cabinet User Manual

## GAO EMT500ET

# GAO EMT500ET Digital Timer for Distribution Cabinet User Manual

MODEL: EMT500ET

Brand: GAO

## 1. PRODUCT OVERVIEW

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The GAO EMT500ET is a digital timer designed for precise control of electrical circuits within distribution cabinets. It offers advanced programming capabilities to automate switching operations, enhancing energy efficiency and operational convenience.

### Key Features:

- Two independent channels for versatile control.
- Up to 49 ON/OFF programs per week.
- Random function for security applications.
- Automatic Summer/Winter time switch.
- Manual ON/OFF override switch for each channel.
- Selectable 12 or 24-hour display format.
- Circular function for recurring programs.
- Integrated 3.0 V lithium battery for program retention up to 3 years.

## 2. SAFETY INFORMATION

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Always observe the following safety precautions to prevent injury or damage to the device:

- Installation and maintenance should only be performed by qualified personnel.
- Ensure the main power supply is disconnected before installation or wiring.
- Do not exceed the specified electrical ratings (16A/250V~ Resistive, 4A/250V~ cos0.4).

- Protect the device from moisture, dust, and extreme temperatures outside the operating range (-10°C to +55°C).
- Verify all connections are secure before restoring power.

### 3. INSTALLATION AND WIRING

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The EMT500ET timer is designed for DIN rail mounting within a distribution cabinet. Follow these steps for proper installation:

1. **Mounting:** Securely attach the timer to a standard DIN rail inside the distribution cabinet.
2. **Wiring:** Refer to the wiring diagram below and the terminal labels on the device. Ensure all connections are made with appropriate wire gauges and are securely tightened.



**Figure 1: GAO EMT500ET Digital Timer Front View.** This image shows the timer's front panel, including the digital display, programming buttons, and the lower wiring terminals (1-5) for Channel 1 and power, and upper terminals (6-8) for Channel 2.

### Wiring Terminal Description:

- **Terminals 1 & 2 (M):** Power supply input for the timer itself. Terminal 1 is typically the Live (Phase) input, and Terminal 2 (marked 'M' on the device) is the Neutral input.

- **Terminals 3, 4, 5 (CH1):** Output contacts for Channel 1.
  - Terminal 4: Common Live input for the load connected to Channel 1.
  - Terminal 3: Normally Open (NO) switched Live output for Channel 1.
  - Terminal 5: Normally Closed (NC) switched Live output for Channel 1 (if used).
- **Terminals 6, 7, 8 (CH2):** Output contacts for Channel 2.
  - Terminal 7: Common Live input for the load connected to Channel 2.
  - Terminal 6: Normally Open (NO) switched Live output for Channel 2.
  - Terminal 8: Normally Closed (NC) switched Live output for Channel 2 (if used).

**Important Note:** Ensure correct identification of Live (Phase), Neutral, and Switched Live connections. Consult a qualified electrician if unsure about wiring to prevent electrical hazards or damage to the device.

## 4. INITIAL SETUP AND BASIC OPERATION

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Upon first power-up or after a long power outage, the display may be blank. The internal battery maintains settings, but a brief charge may be needed. Press the **Res..** button with a pointed object to reset the device if necessary.

### 4.1. Setting Current Time and Day:

1. Press and hold the **Clock** button (top left, with clock icon).
2. While holding **Clock**, press **Day** to set the current day of the week (1=Mon, 2=Tue, etc.).
3. While holding **Clock**, press **h** to set the current hour.
4. While holding **Clock**, press **m** to set the current minute.
5. Release the **Clock** button to save the settings.

### 4.2. Manual ON/OFF Override:

The timer features independent manual override for each channel.

- Press the button labeled with the **hand icon '1'** (located above the 'm' button) to manually switch Channel 1 output ON or OFF, overriding any active programs for Channel 1. Subsequent presses will cycle through ON, AUTO, OFF modes for Channel 1.
- Press the button labeled with the **hand icon '2'** (located above the 'Res..' button) to manually switch Channel 2 output ON or OFF, overriding any active programs for Channel 2. Subsequent presses will cycle through ON, AUTO, OFF modes for Channel 2.

### 4.3. Summer/Winter Time Switch:

Press the **±1h** button to adjust the time by one hour for daylight saving changes. This function typically toggles between standard and daylight saving time.

## 5. PROGRAMMING ON/OFF CYCLES

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The timer allows for up to 49 ON/OFF programs per week across its two channels. Each program consists of an ON time and an OFF time for a specific day or group of days.

### 5.1. Entering Programming Mode:

Press the **Prog.** button (top middle). The display will show "1 ON" or similar, indicating the first program's

ON time setting.

## 5.2. Setting a Program:

1. While in programming mode (after pressing **Prog.**):
2. Press **Day** repeatedly to select the desired day(s) for this program. Options include individual days, weekdays, weekends, or all days.
3. Press **h** to set the hour for the ON time.
4. Press **m** to set the minute for the ON time.
5. Press **Prog.** again to move to the OFF time setting for the same program ("1 OFF").
6. Repeat steps 2-4 to set the OFF time.
7. Press **Prog.** again to move to the next program number ("2 ON"). Repeat the process for all desired programs.
8. To exit programming mode and return to the current time display, press the **Clock** button.

## 5.3. Clearing Programs:

While in programming mode for a specific ON or OFF setting, press the **Clear** button (bottom left) to delete that specific program step. To clear all programs, a full reset using the **Res..** button might be required, which will also clear current time settings.

## 6. MAINTENANCE

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The GAO EMT500ET timer is designed for low maintenance. However, periodic checks are recommended.

- **Cleaning:** Gently wipe the exterior with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- **Battery:** The internal 3.0 V lithium battery provides backup power for up to 3 years. If the display frequently goes blank or programs are lost during power outages, the battery may need replacement. Battery replacement should be performed by a qualified technician.
- **Connections:** Periodically check wiring connections for tightness, especially in environments with vibration.

## 7. TROUBLESHOOTING

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- **Display is blank:**
  - Check main power supply to the timer (Terminals 1 & 2).
  - The internal battery might be fully discharged. Allow the timer to be powered for several hours to recharge the internal battery.
  - Perform a reset by pressing the **Res..** button with a pointed object.
- **Programs are not activating:**
  - Ensure the timer is in "AUTO" mode (not manual ON/OFF override).
  - Verify that the current time and day are set correctly.
  - Check that the program times and days are correctly entered.
  - Confirm wiring for the output channels (Terminals 3,4,5 and 6,7,8) is correct and secure.
- **Output is always ON or OFF:**

- Check if the manual override function is active. Press the manual override button for the respective channel to cycle back to "AUTO" mode.
  - Review your programmed ON/OFF times for conflicts or errors.
- **Display turns off after a short time:**
    - This is a normal power-saving feature for some digital timers. The timer continues to operate according to its program even when the display is off. Press any button to temporarily reactivate the display.

## 8. SPECIFICATIONS

<b>Model Number</b>	EMT500ET
<b>Brand</b>	GAO
<b>Operating Voltage</b>	250V~ (as per rating)
<b>Max. Resistive Load</b>	16A / 250V~
<b>Max. Inductive Load</b>	4A / 250V~ (cosφ 0.4)
<b>Operating Temperature</b>	-10°C to +55°C
<b>Channels</b>	2
<b>Programs</b>	Up to 49 ON/OFF per week
<b>Battery Backup</b>	3.0 V Lithium, up to 3 years
<b>Protection Class</b>	Class II
<b>Dimensions</b>	16.8 x 9.2 x 8.5 cm
<b>Weight</b>	160 g