# NP-DTM7D24H
# SINGLE ANNUAL EVENT TIMER

WI1344A  12/05
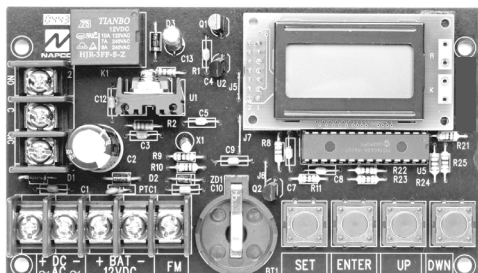


## DESCRIPTION

The NP-DTM7D24H is a 24 Hour / 365 Day *Event Timer that* supports a varied range of applications, including but not limited to: Security, Home and Building Automation, Access Control, Lighting Control, etc. The NP-DTM7D24H is equipped with an independently controlled form "C" relay contact that provides many latching and/or momentary operations during a program schedule. The EPROM memory allows you to program the unit prior to/or during field installation. Events can be set for single or multiple operations on a daily and/or weekly schedule. The Block-programming feature allows repeating an event on any combination of consecutive days. The NP-DTM7D24H compensates for daylight saving time if desired. Also, individually selected holiday exceptions may be programmed to override regularly scheduled events.

## FEATURES

- Standby current: 10mA (relay OFF) 50mA (relay ON).
- 12 to 24 volts AC or DC operation
- Battery charging current: 100mA.
- Form "C" relay contacts are rated 10Amps @120VAC/28VDC.
- EPROM memory protects against loss of programming due to power failure.
- Accurate crystal controlled clock.
- Momentary and/or Latching Events.
- 50 individually programmed daily/weekly events.
- Block programming capacity can accommodate a total of 350 events per week.
- 10 programmable Holiday dates.
- "First man in" option.
- Alphanumeric LCD display simplifies programming.
- Standard or Daylight Saving Time settings.
- Automatic compensation for leap year.
- Built-in charger for 12VDC sealed lead acid or gel type batteries (Max charge current 100mA).
- Lithium battery backup maintains clock (optional).
- User-friendly programming.
  Board dimensions: 30mm(H) x 135mm(W) x 77mm(L)

## INSTALLATION INSTRUCTIONS

1. Mount NP-DTM7D24H in desired location / enclosure. Carefully Review:

- "Basic Operation" section (below)
- "Terminal Identification Table" (below)
- "Push Button Layout" and "Description" (page 2)
- "Programming Instructions" (pages 2-3)

2. Connect 12 to 24 Volts AC or DC to terminals marked [+ DC –, ~ AC ~]. (When using DC carefully observe polarity).
3. Connect 12VDC battery (optional) to terminals marked [+ BAT –, 12VDC].
4. Insert lithium battery (optional/not supplied--order part CR2032) in battery holder with the + positive side facing up.
5. Connect devices to be controlled to dry outputs marked [NO, C, NC].
   **Note:** It is important when connecting DC powered electro-mechanical devices such as Magnetic Locks, Electric Strikes, Bells, Relays, etc. to install a catch diode across the pos (+) and Neg. (-) terminals of the device. Connect diode as close to the device as possible with the banded side facing the Pos. (+) terminal. This will reduce the possibility of interference.
6. Program clock and desired event schedule (see Programming Instructions, pages 2-3.

## BASIC OPERATION:

NP-DTM7D24H controls an independently operated dry form "C" relay output. Relay can be programmed to: turn on (latch), turn off (release latch) or pulse (momentary toggle) at a specified time and day (this is referred to as an "event"). Events are programmed via the push buttons and LCD display. Events may be programmed to occur on any day of the week at any time. In addition, events may be repeated at a specific time on two (2) or more consecutive days (i.e. M-F, Sun-Th, etc.). Multiple combinations of individual and block events may be programmed. Holiday exceptions are individually selected by date and will override all regularly scheduled events.

The four (4) output relay modes consist of: **Relay OFF** - De-energizes the relay until a relay ON event is detected. **Relay ON** - Energizes the relay until a relay OFF event is detected. **Disable** - Used to cancel an existing programmed event. **Pulse** - Momentarily energizes the relay for a selectable time period of 1 second to 15 seconds. Time is displayed in 24 hr. military format.

| TERMINAL IDENTIFICATION | |
|---|---|
| **Terminal** | **Function/Description** |
| NO, C, NC | Dry Contact output used to switch controlled devices. When these relays are energized (ON) the NC and C terminals are open and the NO and C terminals are closed. When this relay is de-energized (OFF) the NC and C terminals are closed and the NO and C terminals are open. |
| + DC –<br>~ AC ~ | AC or DC Input 12 to 24 Voltages. When using DC carefully observe polarity. |
| + BAT –<br>12VDC | 12VDC standby battery input (battery leads provided). |
| FM | When this terminal is connected to DC Neg. (-) the "First Man in" feature is enabled. The relay will remain in its present position until this connection is terminated. At that time the relay will resume normal operation and latest scheduled events will occur. |

**Push Button Layout:**
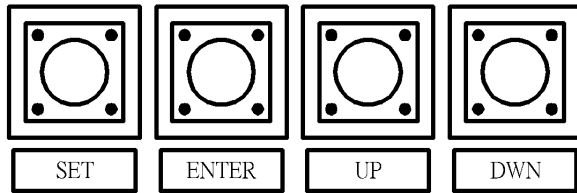


| SET | ENTER | UP | DWN |

| **Push Button Description Table** | |
|---|---|
| **Push Button** | **Function/Description** |
| SET | Scrolling keys for programming. Escaping out of existing programming. |
| ENTER | Accepts selections made to programming. |
| UP | Scrolls through selections. |
| DWN | Scrolls through selections. |

**UP** and **DOWN** keys can be used to select data entries. After scrolling to the correct entry, depress **ENTER** to accept.

## PROGRAMMING INSTRUCTIONS:

**Note**: The flashing cursor denotes location of data entry selection to be made. If an entry was made in error or requires changing, depress SET to backspace, make the correct selection and depress ENTER to accept data and advance the cursor.

### A. SETTING EVENTS:

Depress **SET** until | ENTER TO SET EVENT | appears in display.

Depress **ENTER**. | #01  OFF  SU  00:00 | will appear in display.

Depress **ENTER** until the flashing cursor appears under OFF in display. Now select type of event required, by scrolling using the **UP** and **DWN** push buttons until either:

> ON - Relay ON (latching mode).
> OFF - Relay OFF (latching mode).
> PL - Relay Pulse (momentary).

...appears in display and depressing **ENTER** will make selection.

When selecting the pulse mode PL01 will appear in the display. It is now necessary to assign the length of time (duration of relay activation). The pulse can range in length from 1-second minimum to 15-seconds maximum and is selected by using **UP** or **DWN** push buttons, and then depressing **ENTER** to accept.

**Note:** If pulse duration is not selected relay output defaults to 1-second.

Next select the day of the week or BK* for weekly repeat and time (military) by scrolling using **UP** and **DWN** push buttons and depress **ENTER** to accept.

You may continue to program events by repeating the previous steps or exit programming by depressing **SET**.

**Note:** When programming additional events it is necessary to select the next consecutive event number following the last event program to continue.

*See section B

### B. Setting Block (weekly repeat):

Next select block programming by depressing **SET** until

| ENTER TO SET  BK | appears in display.

Depress **ENTER**. | BK=SA/SU TIME=DS | will appear in display.

**Example:** To select Monday through Friday, repeat operation. With flashing cursor under SA depress **UP** or **DWN** to change to MO then depress **ENTER** to move flashing cursor to SU and depress **UP** or **DWN** to change FR. Depress **ENTER**--flashing cursor will now be under TIME = DS. Press **ENTER** if you wish to select DS (Daylight Saving mode). If your area does not require Daylight Saving adjustment, depress **UP** or **DWN** to change to (Standard Time mode) ST will appear in display. Depress **ENTER** to accept correct selection.

### C. Setting Holiday Events:

Depress **SET** until | ENTER TO SET EVENT | appears in display.

Depress **ENTER**. | #01  ^  ON  HL  00:00 | will appear in display.

Next select HL to indicate as Holiday Event and time by scrolling using **UP** and **DWN** push buttons and depress **ENTER** to accept.

You may continue to program more holiday events by repeating the previous steps or exit programming by depressing **SET**.

### D. Setting Holiday Dates:

It is now necessary to assign these holiday events specific calendar dates, which they are to occur. To select Holiday events depress **SET** until

| ENTER TO SET HOL | appears in the display.

Depress **ENTER**

```
#01   ^   ON
TU     00:00
```
will appear in display.

**Note:** Holiday events will override all regularly programmed events.

## E.  Delete/Disable Events or Edit Events:

Previously programmed regularly scheduled and/or holiday events may be deleted/disabled without having to erase all events.

Depress **SET** until
```
ENTER TO
SET EVENT
```
appears in display.

Depress **ENTER.**
```
#01   ^   ON
TU     00:00
```
will appear in display.

Now scroll using **UP** and **DWN** push buttons to the event you wish to delete, depress **ENTER** to move flashing cursor under relay option, then depress **UP** and **DWN** push buttons until DIS is displayed, depress **ENTER** to confirm.

## F.  Setting Clock/Calendar:

Upon initial power up
```
RLY     OFF
SU     01:01
```
will appear in the display.

Depress **SET**
```
ENTER  TO
SET   TIME
```
will appear in the display.

Depress **ENTER**
```
01 / 01 / 01
SU / 01:01
```
will appear in the display.

Enter the current date, day of week and time (military) by depressing **UP** and **DWN** to make the selection, then depress **ENTER** to accept.

**Note:**  If clock was set prior to programming events, re-program clock to insure accuracy.

## G.  Delete All Events:

All previously programmed events can be deleted by depressing **SET** until
```
ENTER   TO
CLR    MEM
```
appears in display.

Depress **ENTER**
```
CLEAR
MEMORY?
```

will appear in the display.

Depress **ENTER**
```
PRESS UP
& ACCEPT
```

will appear in the display.

Depressing **UP** push button will now clear all events previously programmed.

If you wish to escape from this selection, depress any of the other push buttons: **SET, ENTER** and **DWN**.

# CUSTOMER EVENT LOG

| EVENT # | RELAY # | DAY / BLOCK | HOLIDAY DATE | EVENT TYPE |
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