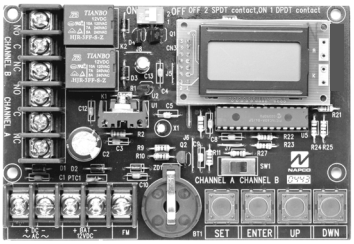
NAPCO®
333 Bayview Avenue
Amityville, New York 11701
For Sales and Repairs, (800) 645-9445
For Technical Service, (800) 645-9440

NP-DTM7D24H-D
DUAL ANNUAL EVENT TIMER

WI1345A 12/05



DESCRIPTION

The NP-DTM7D24H-D is a two channel 24 Hour / 365 Day *Timer Controller* used to support a varied range of applications, including but not limited to: Security, Home and Building Automation, Access Control, Lighting Control and more. The NP-DTM7D24H-D is equipped with an independently controlled form "C" relay contact providing many latching and/or momentary operations during a program schedule of your choice. 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. NP-DTM7D24H-D compensates for daylight saving time if desired. Also, individually selected holiday exceptions can 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.
- Two form "C" relay contacts are rated 10Amps @120VAC/28VDC.
- Tandem relay mode (converts 2 SPDT contacts to 1 DPDT contact).
- EE-Prom program memory protected against power loss.
- 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 92mm(L)

INSTALLATION INSTRUCTIONS

1. Mount NP-DTM7D24H-D in desired location / enclosure.
   Carefully Review:
   - "Basic Operation" (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 electromechanical 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:

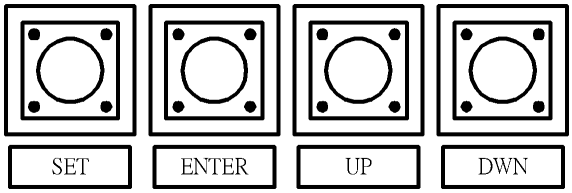
NP-DTM7D24H-D controls an independently operated dry form "C" relay output. Relay can be programmed to: turn on (latch), turn off (release latch) or pulse (momentary toggle) at a specified time and day (this is referred to as an "event"). Events are programmed via the push buttons and LCD display. Events 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.

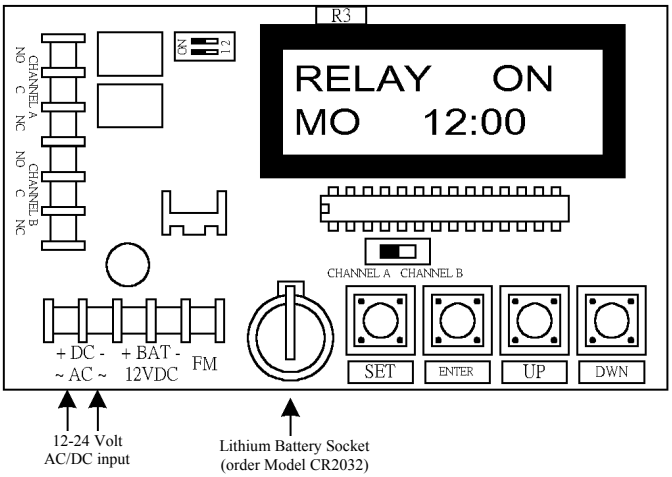
The four (4) output relay modes consist of: **Relay OFF** - De-energizes the relay until a relay ON event is detected. **Relay ON** - Energizes the relay until a relay OFF event is detected. **Disable** - Used to cancel an existing programmed event. **Pulse** - Momentarily energizes the relay for a selectable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

TERMINAL IDENTIFICATION

Terminal	Function/Description
NO, C, NC CHA NO, C, NC CHB	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 – ~ AC ~	AC or DC Input 12 to 24 Voltages. When using DC carefully observe polarity.
+ BAT – 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:





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.

SW1 clip SW	Selects channel to be programmed.
SW2 slide SW	Selects tandem or individual relay operation. (CUT R3)

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 CLOCK/CALENDAR:

Upon initial power up | CH ON
SU 01:01 | will appear in display.

Depress **SET**. | ENTER TO
SET TIME | will appear in display.

Depress **ENTER.** | 01/01/01
SU / 01:01 | will appear in 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.

To program Daylight Saving Time (refer to **D. Setting Block Events (Weekly Repeat)** and **F. Daylight Saving Time**).

To change or program clock/calendar simply repeat the steps above.

B. SETTING EVENTS:

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

Depress **ENTER.** | A01 OFF
SU 00:00 | **w**ill appear in display.

Note: A01 indicates Channel A event 01.
When cursor appears you are able to scroll through events.
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 the 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 depressing **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.
Note: When it is required to have the same event repeated on two (2) programmed as a block by selecting **BK** in the day field.

A01 OFF BK 00:00

Note: To program the consecutive days of the week, refer to **D. Setting Block Event (Weekly Repeat)** and **F. Daylight Saving Time**.

C. ADDING EVENTS

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

Depress **ENTER.** | A01 OFF
SU 00:00 | will appear in display.

Depress **ENTER.** If the event is not programmed, the cursor will move to the OFF (relay function) position. If the event is programmed, the cursor will move to the position and the programmed information of the event will be displayed. At this point, depress the UP button to step up through the programmed events. When an unprogrammed event is reached, the cursor will move to the OFF (relay function position). (At this point, see **Setting Events** or **Setting Holiday Events**).

D. SETTING BLOCK (WEEKLY REPEAT)

Select channel A or B by moving slide switch SW1 to appropriate position.

Note: Channel cannot be changed in the middle of programming events. To change channels, you must exit programming, then change channel switch position, then enter program mode again.

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

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

E. BLOCK EVENT PROGRAMMING

Flashing cursor will appear at the location of the first day of the week desired. Depress **UP** and **DWN** to select day.

Depress **ENTER** to confirm selection, then cursor will appear at the location of the last day of the week desired.

Depress **UP** and **DWN** to select day. Depress **ENTER** to confirm selection.

1) Monday through Thursday depress **MO** followed by **TH**.
2) Wednesday through Sunday depress **WE** followed **SU**.

F. DAYLIGHT SAVING PROGRAMMING

The cursor will appear under DS (auto clock adjust daylight saving mode) in display. To change mode, depress **UP** or **DWN** once. ST (clock does not adjust standard time mode) will appear in display. Depress **ENTER** to accept correct selection.

Note: Select **DS** for areas that observe Daylight Saving or **ST** for areas that do not observe Daylight Saving.

G. SETTING HOLIDAY EVENTS

(These events will occur on programmed Holiday Dates - see Setting Holiday Dates below). Select channel A or B by moving slide switch SW1 to appropriate position.

Note: Channel cannot be changed in the middle of programming events. To change channels, you must exit programming, then change channel switch position, then enter program mode again.

Find the first unprogrammed event (refer to **C. Adding Events**). Depress **ENTER** until the flashing cursor appears under OFF (relay function) position in display. Now select type of operation 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 the **UP** or **DWN** push buttons, then depressing **ENTER** to accept.

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

Next select **HL** (holiday) and time (military) by scrolling using **UP** and **DWN** push buttons and depressing **ENTER** to accept. You may continue to program events by repeating the previous steps or exit programming by depressing **SET**.

H. SETTING HOLIDAY DATES:

Select channel A or B by moving slide switch SW1 to appropriate position.

Note: Channel cannot be changed in the middle of programming events. To change channels you must exit programming, then change channel switch position, then enter program mode again. It is now necessary to assign these holiday events specific calendar dates, which they are to occur.

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

Depress **ENTER.** | A01 ^ ON
HL 00:00 | will appear in display.

Enter the holiday date, day of week and year by depressing **UP** and **DWN** to make the selection then depress **ENTER** to accept.

Note: Holiday events will override all regularly programmed events that occur on a particular holiday date.

I. DELETE/DISABLE EVENTS OR EDIT EVENTS:

Select channel A or B by moving slide switch SW1 to appropriate position.

Note: Channel cannot be changed in the middle of programming events. To change channels you must exit programming, then change channel switch position, then enter program mode again. 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** | A01 ^ 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.

J. DELETE ALL EVENTS:

This will delete all previously programmed events.

SET until | ENTER TO
CLR MEM | appears in display.

Depress **ENTER.** | CLEAR
MEMORY? | will appear in display.

Depress **ENTER.** | PRESS UP
& ACCEPT | will appear in 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**.

K. TANDEM RELAY MODE:

To operate in the Tandem Relay Mode, close switch SW2 and cut R3. This mode setting will allow events programmed for Channel A and Channel B to operate both relays simultaneously (1 DPDT relay output). This setting doubles the amount of programmable events.

Note: When using the Tandem Relay mode, sequential ON/Off or OFF/ON events must be programmed in the same channel. (If there is a Channel Program conflict, such as Channel A is set to ON and Channel B is set to OFF, the ON command will override the OFF command and both relays will remain ON).

CUSTOMER EVENT LOG

EVENT #	RELAY #	DAY / BLOCK	HOLIDAY DATE	EVENT TYPE