



T24 Timer Getting Started

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Version 1.0

The T24 Timer Basics

The T24 timer has simple front panel controls. There is a row of four buttons, a row of four LEDs, and a second row of four buttons. There is a USB port for connecting the timer to a computer for setup using the T24 software. If the optional network board is installed, there is a location to plug in a network cable.

The first row of buttons is for the built-in menu system and is used to configure the timer for installations with simple requirements. The second row of buttons is used to control any channel configured as an output. The button action depends upon if the timer is configured for simple ON/OFF actions or by T24 commands which, using a T24 0-10V receiving module, controls fixtures to levels – by default, 100%, 70%, 40%, 70%, and OFF.

If the timer is configured for ON/OFF then the action of the button toggles an output channel on and off. If the timer is configured for level control then each press of the button changes the level to the next step. That is, from OFF to 10%, 10% to 40%, 40% to 70%, 70% to 100%, and 100% to OFF.

If a channel is configured as an output, the LED shows the state of the channel – when the LED is ON the output is ON and when OFF the output is OFF.

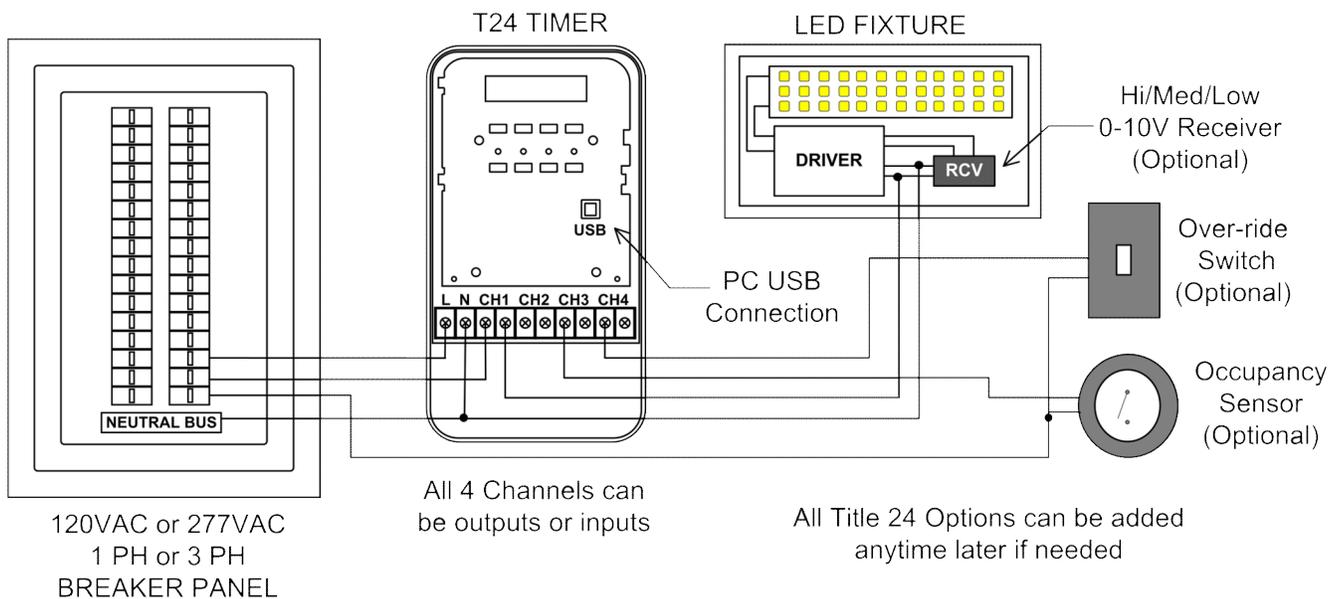
If a channel is configured as an input – occupancy sensor, switch, or demand response – the button for that channel has no effect. The LED shows if the input is currently ON or OFF.

There are two ways to configure the timer: Using a Windows software application – available for download from the PCS web site – or by using a menu system built into the timer itself. Before describing both methods, it is first necessary to understand the limits of the timer when using the built-in menus. This may help you choose which method you want to use.

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FIGURE 1 TYPICAL TIMER WIRING



Timer Home Screen

The Home screen shows the date and time, and on the second line the display shows the state of each channel. It shows the state of one channel, and after a few seconds the display changes to show the state of the next channel. To show the state of other channels press the up or down buttons.

For an output channel, the display shows the level (ON/OFF or percentage) and if suspended or not. If suspended it shows "Suspended!"

For an input channel the display shows the state of the input – ON or OFF, the kind of input attached to the channel (OC = Occupancy sensor, SW = Switch, DR = Demand Response), if the input is enabled or disabled (ENA = Enabled, DIS = Disabled), and if the channel is suspended or not (Suspended = "Susp").

Home screen examples:

```
05/06/16 10:54:59 AM
Ch3 70%
```

Channel 3 is at 70%.

```
05/06/16 10:34:07 AM
Ch1 40% for 117 min
```

Channel 1 is at 40% and was set to that level by manual action – by pushing the channel button. *For 117 min* tells you that in just under 2 hours it will automatically change to its set point.

```
05/06/16 10:38:07 AM
Ch2 Off    Suspended!
```

Channel 2 is off and suspended from control by the schedule.

```
05/06/16 10:36:58 AM
Ch4 OFF OC ENA
```

Channel 4 is an input configured for an occupancy sensor. The sensor is currently off and it is enabled.

```
05/06/16 10:55:36 AM
Ch4 OFF OC ENA SUSP
```

Channel 4 is an input configured for an occupancy sensor. The sensor is currently off and it is enabled but suspended.

If a channel is *suspended* then any event in the schedule that would control that channel has no effect. This gives you a way to disable schedule control of a channel without removing schedule entries. Both output and input channels can be suspended.

To begin using the timer menu system, press the left most button ("OK") and the menu opens.

Working with the Timer Menus

This section describes the timer menu system and how it can be used to configure timer options, view state, and edit timed events.

General methods when using the timer menus

All actions with the timer menus use the top row of 4 buttons. The actions of these buttons are:

- The up and down buttons – middle two – move from option to option or change from choice to choice.
- The OK button (left button) commits your choice.
- The Exit button (right button) exits the operation.

When the display shows text that is blinking, the option represented by that text is changed by using the up and down buttons – they cycle through your choices. To commit the change, press the OK button.

For example, when setting the clock, the first option - day of the week - will be blinking. Pressing the up button changes *Monday* to *Tuesday* and the down button changes *Monday* to *Sunday*. When you have selected the day of the week you want, commit the change with the OK button.

The next field then begins blinking – in this case the month – and that can be changed in the same manner. When all fields of the clock are set as you want, press the Exit button to leave clock setting.

To quickly move from field to field without making any changes, just press the OK button.

All the operations with the T24 timer menu work the same: The option able to be changed is blinking, up and down buttons move through the option choices, the OK button commits the change and moves to the next field.

Timer Menu

The timer menu contains these options and performs these functions:

1. Set Clock
Sets the timer clock.
2. Set Location
Sets the timer location by entering the latitude, longitude, time zone, and if daylight saving time is supported in your location, what the DST start and end dates are (USA or Mexico rules).
3. Edit Events
The first 99 timed events in schedule 1 can be edited.
4. Channel Mode
If a channel is suspended or not. When a channel is suspended it is not affected by any timed event that referenced that channel. This is a way to temporarily stop a schedule from acting upon a channel without removing the schedule entries.
5. Timer Options
There are three options that can be configured from this menu:
 - a. Remote Access
Does the USB port or optional network board allow connections to the timer?
 - b. Set Levels in Events
Do timed events contain only ON or OFF or do they contain percentages that are communicated to the channel using T24 commands?
 - c. 2 Hour Override
If a channel is manually controlled does it stay at that level for 2 hours before automatically being returned to its set point as determined by the schedule?
6. View Sun Times - Show the sunrise and sunset times as determined by the date and location.
7. Clear Schedules - Clears all entries for all schedules. When selected you have to change “No” to “Yes” and press the OK button to cause the schedules to be cleared.

The timer beeps to show that this was done.

8. Reset All - Return all timer settings to the factory defaults. When selected you have to change "No" to "Yes" and press the OK button to cause the reset to occur. The timer beeps to show that this was done.
9. About Timer - Display the timer firmware version.
10. Exit Menu - Exit the menu and return to the timer home screen.

Editing Timed Events

As an example, the following procedure adds an event to the timer schedule. The example event to be created is:

Channel 1 to 70% at 30 minutes before sunset Monday to Friday.

Once the menu system is opened (press OK button), move to "Edit Events".

```
Press Up/Dn then OK  
3) Edit Events
```

Press OK to begin.

```
Event 01: Unused
```

"01" is blinking. Press OK to edit the first event in the schedule.

```
Event 01: Unused
```

"Unused" is blinking. Press the down arrow to change from "Unused".

```
Event 01: Ch1 100%  
Fixed 00:00A MTWTFSS
```

The display changes to show the event. The "1" in CH1 is blinking. Press OK.

```
Event 01: Ch1 100%  
Fixed 00:00A MTWTFSS
```

"100%" is blinking. Use down button to change to 70%. Press OK.

```
Event 01: Ch1 70%  
Fixed 00:00A MTWTFSS
```

"Fixed" is blinking. Use down button to change to "Sunset". Press OK.

```
Event 01: Ch1 70%
Sunset +00 MTWTFSS
```

“+00” is blinking. Use down button twice to change to -30. Press OK.

```
Event 01: Ch1 70%
Sunset -30 MTWTFSS
```

“M”– for Monday – is blinking. The up and down buttons toggle the day as included (shows letter for the day) or excluded (shows “-”).

```
Event 01: Ch1 70%
Sunset -30 MTWTF-
```

Use OK button to move to S – Saturday – and exclude then press OK and move to Sunday and exclude.

```
Event 02: Unused
```

Finally, use the Exit button to save the timed event into the schedule and exit editing events.

To add another event rather than using the exit button, you could use the OK button to move back to the event number and then use the up button to move to event 2 and edit that event.

Restarting and/or clearing the timer

There are several ways to restart and/or clear the timer to factory defaults.

To restart the timer and clear to factory defaults: Hold down the top right button (labeled *Exit*) while power cycling the timer. When it restarts, release the button and the display shows "Set Factory Defaults / OK to continue. Press the *OK* button to reset the timer. Press the *Exit* button to cancel the reset and clear.

To restart the timer: If the timer has a visible push button or a hole where a "bent paperclip" can be poked through the hole to a pushbutton, press and release that button to reset. The timer restarts and all settings are preserved. This can also be accomplished by power cycling the timer without pressing any buttons.

To clear the timer back to factory defaults: The timer menu system has an option (#8) that clears the timer to factory defaults.