

Product Specification

Name: Programmable time led controller

Model: TC420



Summarization

Here is an upper computer in the programmable time controller to make the load output change over time, the customer may customize schedule mode they want through the upper PC. Then through the USB port to download required schedule to the controller. The upper PC in addition to the function of editing schedule mode, it also can be setup time for the controller because of synchronous clock function of upper host. If user want to see the schedule mode effect after editing, they can use fast saving function of upper. Because there is no delete function of the upper host, so the mode name display space will come into blank as long as you execute delete. This controller can control load of led changing effect no more than five channels. And it can be used in the occasion of the plant lights, light box advertising, the stage, home decoration, etc.

Technical parameters

- Working temperature: -20-60°C
- Supply voltage: DC12V
- Static power consumption: < 0.5W
- Net weight: 200g
- Gross weight: 300g
- External dimension: 120MM*69MM*24MM
- Packing size: 169MM*135MM*53MM
- Output: 5 channel
- Maximum output current: 20A

Function instructions

There are two kinds of modes like energy saving mode and setup mode in this controller , and also there are four buttons such as "Menu", "Enter", "+", "-" in it.

1. Power saving mode

When the controller in the situation of setup mode without any key press in 30 seconds , the screen background light will be closed, and if within 30 seconds there is still no any key press, the controller will go into the energy saving mode .

When the controller is in the energy saving mode, the first line of the screen shows that the current date and mode; the second line displays the current time.

Energy saving mode is as shown in figure 1:

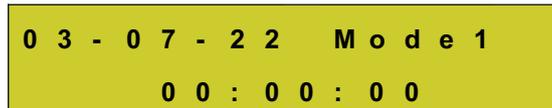


Figure 1

2. Setup mode

- ① Press "Menu" button in the main menu, it will enter into the time display interface.

The first line of the time display interface shows the current time or date and mode, it will automatically switch every two seconds .

The second line shows that "[Menu]", press "Enter" button to access the main menu interface.

Time display interface is as shown in figure 2:



Figure 2

- ② When press "Enter" button in the time display interface , or "Menu" button in the submenu of the main Menu , it will go into the main Menu.

The first line shows the location of " [Menu] "in the main Menu of the display .

The second line of the display shows "1. Mode", "2. Setup" or "3, Run", that you can switch each mode by pressing the key "+" and "-" .

Press "Enter" button,it will access the corresponding setting mode ; and press the "Menu" button to return to the time display interface .

The main menu display is as shown in figure 3:



Figure 3

- ③ Select "1. Mode" in the main menu and press "Enter" button to go into the mode choice options .

The first line of the display shows the location of " 【Mode】 " in mode selection status .

The second line shows that the name of mode choice such as: "Mode11" .

Press the "+" or "-" key to choose mode , and save the selection mode ; Press the "Menu" button to return to the main menu.

The mode choice of display is as shown in figure 4:

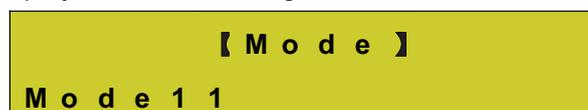


Figure 4

④ Select "2. Setup" in the main menu and press "Enter" button to go into the Setting menu ;

The first line of the screen shows the location of " **【Setup】** " in the setting menu status .

The second line of the display shows "1. Time" and "2. Date" or "3. Sound", you can select setting object through the key "+" or "-" .

Press "Enter" button to access the corresponding Settings, and click "Menu" button to return to the main Menu.

Setting menu is as shown in figure 5:



Figure 5

I. In the status of setting menu , choose "1. Time" and press "Enter" button, it will enter into time setting mode;

The first line of the screen shows the location of " **【Time】** " in the time setting status .

The second line of display shows the setting time ": hour: minute : second", for instance , "11:16:56" is the current setting time.

Press "Enter" button to choose every setting number (hour / minute /second), as you seen ,in editing state , the selected area will be flashing .

Press the key "+" to add 1 , when the number reach maximum , it will return around to the Minimum value ;

Press the key "-" to reduce 1 ,when the number reach minimum , it will be back to the maximum value .

Press the "Menu" button to save and return to the setting menu .

Setting mode displays as shown in figure 6:



Figure 6

II. In the status of setting menu , choose "2.Date" and press "Enter" button, it will enter into date setting mode;

The first line of the screen shows the location of " **【Time】** " in the date setting status .

The second line of display shows the setting date " year - month - day " , for instance "13-01-01" is The current setting date .

Press "Enter" button to choose every setting number (year / month / day), as you seen ,in editing state , the selected area will be flashing .

Press the key "+" to add 1 , when the number reach maximum , it will return around to the Minimum value ;

Press the key "-" to reduce 1 ,when the number reach minimum , it will be back to the maximum value .

Press the "Menu" button to save and return to the setting menu .

Setting mode displays as shown in figure 7:



Figure 7

III. In the status of setting menu , choose " 3 .Sound " and press "Enter" button, it will enter into

sound setting mode ;

The first line of the screen shows the location of "【sound】" in the sound setting status .

The second line of the display shows "OPEN" or "CLOSE" which means the situation of sound setting .

Press the key "+" or "-" to switch voice close or open ;

Press "Menu" button to return to the setting menu .

Sound Setting is as shown in figure 8:



Figure 8

⑤ In the status of main menu , choose " 3.Run " and press "Enter" button, it will enter into run menu;

The first line of the screen shows the location of "【Run】" in the run menu .

The second line of the display shows "Start " or " Stop " which means the on/off situation of the controller .

Press the key "+" or "-" to start or shut down .

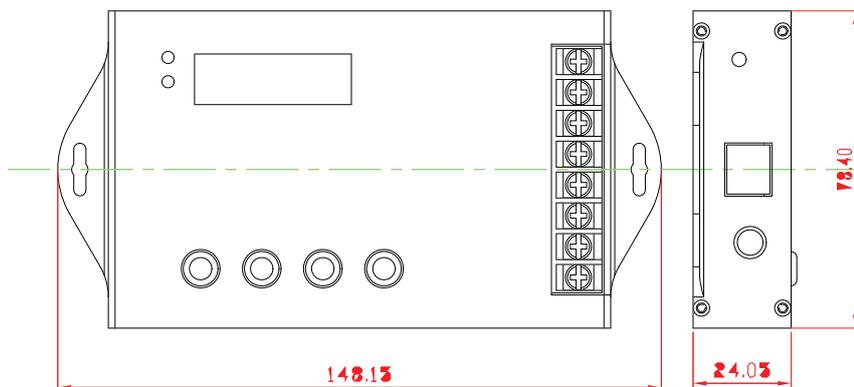
Press "Enter" button to execute user's option; and press the "Menu" button to return to the main Menu .

Run menu displays as shown in figure 9:



Figure 9

External dimension



Interface instruction

Input interface:

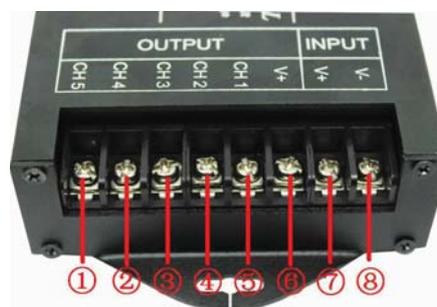


①It is the reset button, when the controller crash, can touch this key to reset.

②It is USB signal joint entrance, when epistatic machine model after editing, can through the USB line to download to the controller.

③It is DC plug, when the load power is small, can choose this port to input voltage.

Output interface:



①It is the load output 5th channel negative pole;

②It is the load output 4th channel negative pole;

③It is the load output third channel negative pole;

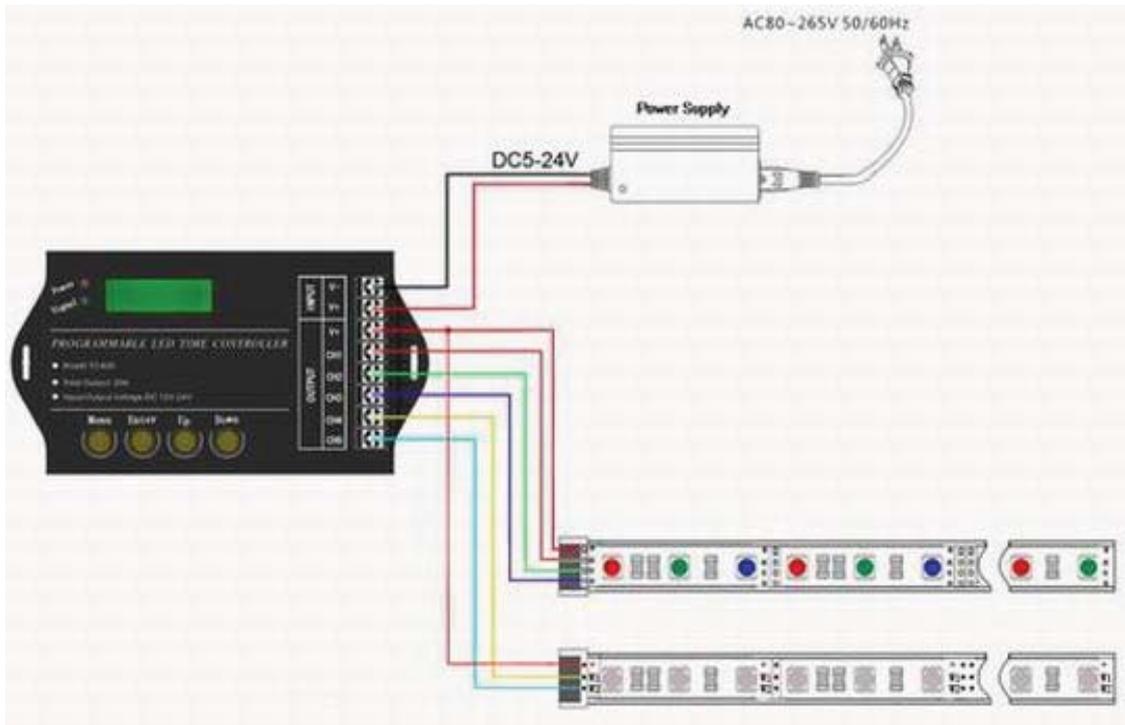
④It is the load output second channel negative pole;

⑤It is the load output first channel negative pole;

⑥It is the load output common anode;

⑦. ⑧It is power supply input positive and negative pole, when the load power is too large, you can choose this 2 port. (Remark: you only need to choose one between power supply input port and this 2 port)

Typical application



Manual of QL-CTL-T

LEDTimer Control help document

I. Main interface of software description: as shown in figure 1-1 .

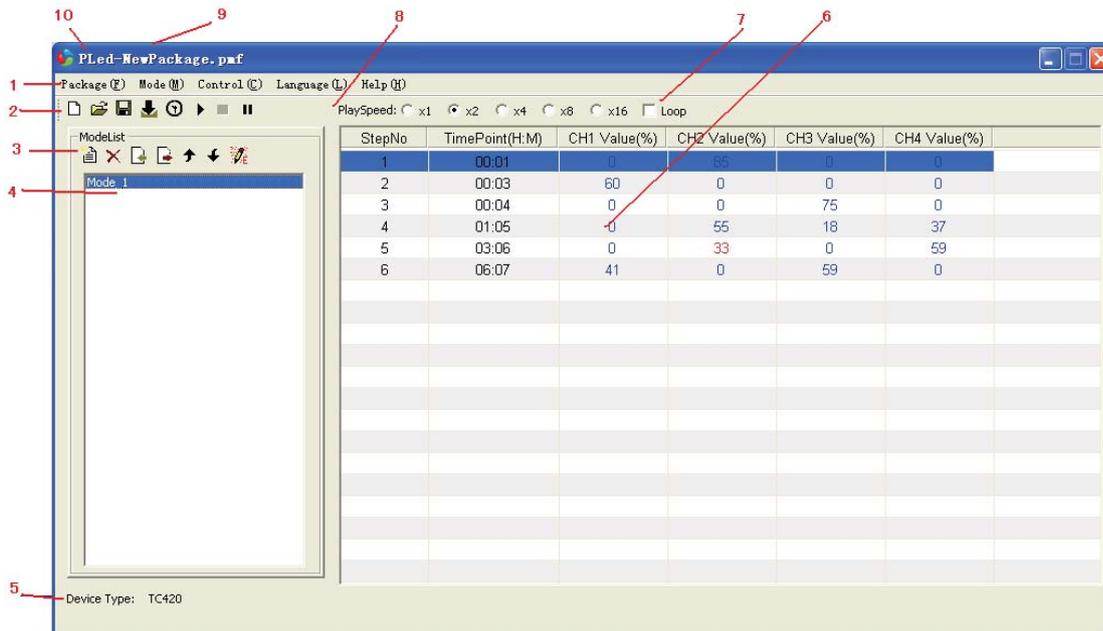


Figure 1-1

1.Menu bar: it contains package menu ,mode menu ,control menu ,language menu and help menu .

(1) Package menu :it is specialized for the mode package controlling /processing menu ;

New : means to create a new mode package ,50 modes are included .

Open : is to unfold an existing mode package .

Save : to save the current mode package and all mode file ,and do remember to preserve mode package after setup value.

Exit : to close the application program.

(2) Mode menu : it is a menu for mode control , it will be available when there is a mode bag ;

Insert :you can use it to create a new mode file which includes max 50 time points , and it can be download to the controller when it has at least two time points .

Load : to load an existing mode, and mode name should be not the same;

Edit : Used to open the figure 1-2 . It can be opened when mode is selected . Also it can be turned on via double-click edit display frame .

Export : to save the current editing mode to the file , and the data of time point edited won't be lost when software is closed or reboot .

Delete :to delete mode file , and you can remove it out of the list alone ,once mode file is deleted , it can't be opened again.

MoveUp: used to change the mode download sequence, and pattern moved up

MoveDown : mode is moving down ;

Rename : you can rename the mode ;

Empty : Remove all patterns of mode list in the current mode package .

(3) Control menu :it is used to manage and setup the controller . Only when controller inserted , the option is available.

Download: In sequence to download all patterns of mode list in mode package to the

- controller, if time point number is less than 2, then skip the download ;
- OnlinePlay :Quick preview mode setting effect, when previewing , most of the operation will be unable, and it will be restored after previewed .
- SynTime :The time of controller can be set into computer time via synchronous clock .
- ClearAll : used to delete all modes saved in the controller .
- (4) Language menu : the option for language switch .
- (5) Help menu : to view the help and check the information .
2. Standard toolbar :options are as followed : new package , open package , save package , fast sowing, download and synchronization and so on .
 3. Mode tool sample :functional key are such as nouveau mode , delete , open , save and move mode .
 4. Mode list :Display all mode in the current mode package , double-click the mode name to change name, then push enter or other key to save rename , and click ESC to cancel.
 5. Device type : show the current setting mode package to be suitable for which device type .
 6. Edit display frame : the editing schedule, step number and the channel value can be displayed .
 7. Cycle mark : fast sowing
 8. The speed of play ,1 time speed is not accelerating ,2 times speed of play time is half of the actual time, 4 times speed of play time is 1/4 of the actual time , 8 times speed of play time is 1/8 of the actual time , 16 times speed of play time is 1/16 of the actual time ;
 9. Package name of the current using mode , and the package is used for storage and management mode. Make sure the package name when open or new construction.

II. Interface description of step edit box : as shown in figure 1-2

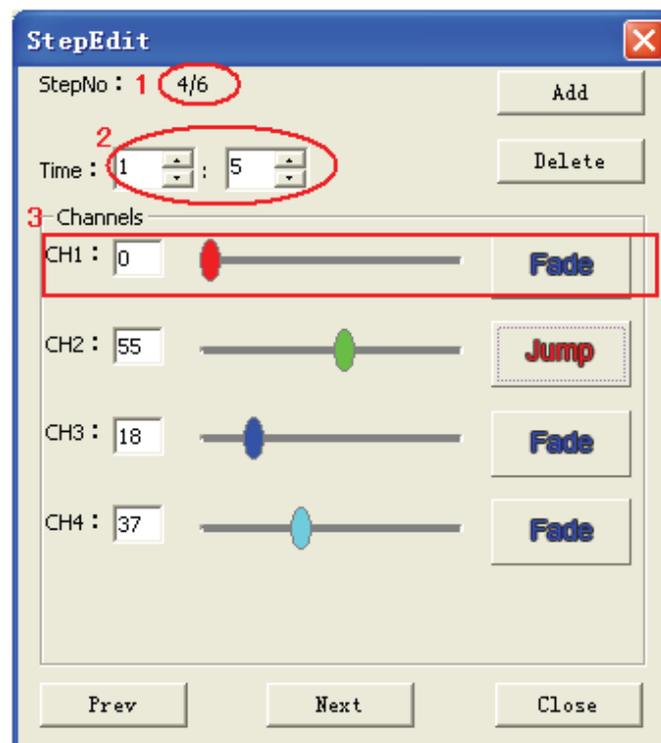


Figure 1-2

1. Step number : the front number means the current setting step , and the behind number is total steps , the maximum total steps are fifty .
2. Time editor : to set up hour and minute separately according to 24-hour time system .
3. Channel value setting : the channel value is measured via percentage , and fade means the

brightness of this channel is gradual changing into the next step in the same channel .

Prev: to check last step ;

Next: to see next step ;

Close: to close setting ;

Add: when adding a step , time will automatically add a minute , but the time of adding step can't be the same as the other step number .

Delete: to delete the editing step;

III. Direction for use

Step 1: New established mode package , to click the first button of "common" toolbar or select "Package" -> "New", and open the "Package Options", as shown in figure 1-3, "PackagePath" are mode Package files and mode storage path, "PackageName" are mode package and mode file name; "DeviceType" is equipment pattern , "ChannelNum" is channel number equipment needed . After setup is completed, click "OK";

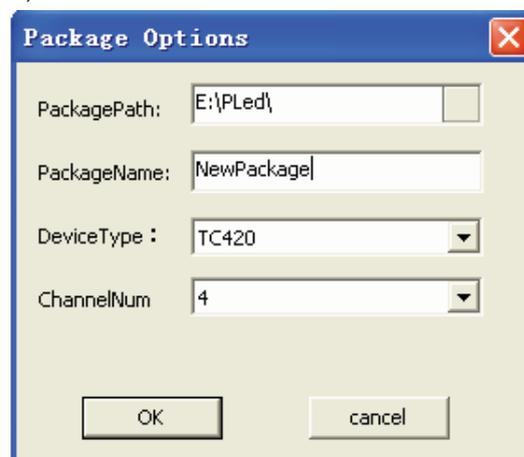


Figure 1-3

Step 2 : creating a new mode : click the first button "Mode" on the toolbar or select "Mode" -> "Insert", the new mode name and mode file name will be defaulted "Mode_" at the beginning , as shown in figure 1-1.

Step 3 : editing mode: firstly click the last button on "mode" toolbar or select "Mode" -> "edit" option, open the "step edit box", as shown in figure 1-2; And click the "Add" button to add a time point , then edit channel value and modify the procedure time , at last step number will be automatic changed according to the modified time .

Step 4: check step edit effect: when the step edit meets requirement, choose "Control" -> "play" or button Alt + p key, or click the "common" play button on the toolbar, to see the editing effect. If you edit appropriately, then download to the controller, or continue to modify.

Step 5: Download mode: when step edit is correct, choose the "Control" -> "Download" option, or click the "Download" button on "common" toolbar, or click the ALT + L key at the same time to get download mode.

Step 6: Save mode, select "Package" -> "Save" or click "Save" button on the "common" on the toolbar , or press Ctrl + S key at the same time, Save all model and mode package , and then exit the software.