

BSOD TC420

BSOD TC420 Programmable LED Time Controller User Manual

Model: TC420

1. INTRODUCTION

The BSOD TC420 Programmable LED Time Controller is designed to manage the output of LED lighting systems over time. This device allows users to program custom lighting schedules, including brightness adjustments and on/off times, for various 12V to 24V LED applications. It features five output channels, making it suitable for single-color, dual-color, RGB, and RGBW LED products.

This manual provides detailed instructions for the installation, operation, and maintenance of your TC420 controller, ensuring optimal performance and longevity.

2. SAFETY INFORMATION

Important Safety Warnings:

- Ensure the supply voltage is within the specified range of DC 12V to 24V. Using an incorrect voltage supply can damage the device and connected LEDs.
- Do not exceed the maximum load current of 4A per channel or a total output of 20A for the entire controller. Overloading can lead to overheating and device failure.
- Always disconnect power before making any wiring connections or disconnections to prevent electrical shock.
- Ensure all connections are secure and properly insulated to avoid short circuits.
- This product is designed for indoor use. Avoid exposure to moisture, extreme temperatures, or corrosive environments.
- Do not attempt to disassemble or modify the controller. This will void the warranty and may result in damage or injury.
- Keep the device away from children.

The main menu display is as shown in figure 3:

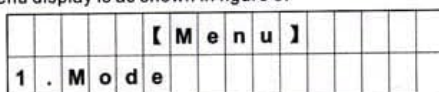


Figure 3

Select "1. Mode" in the main menu and press "Enter" button to go into the

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:

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

Figure 4

Setting menu is as shown in figure 5:

Figure 5

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

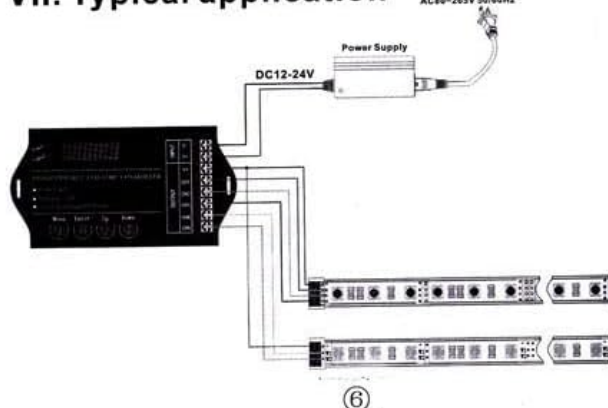
Sound Setting is as shown in figure 8:

Figure 8

Run menu displays as shown in figure 9:

Figure 9

AC220-265V 50/60Hz

Figure 6

Setting mode displays as shown in figure 7:

Figure 7

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

⑤

1. Power supply voltage of this product is from DC12V to 24 V, and other high voltage power supply is unacceptable ;
2. When it is downloading mode , you should firstly power on the controller , and then connect usb line to the controller and computer ;
3. The power cord shall not be mutual attached in order to avoid short circuit .
4. Warranty of this product is one year, in this period we guarantee replacement or repairing with no charge, but exclude the situation of artificial damaged or overload working.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x BSOD TC420 LED Time Controller
- 1 x USB Data Cord
- 1 x CD with Compatible Software
- 1 x User Manual (this document)



Image Description: The BSOD TC420 LED Time Controller, USB data cord, software CD, and user manual displayed next to its product box, illustrating the complete package contents.

4. PRODUCT OVERVIEW

The TC420 controller features a compact design with an aluminum casing, an LCD display, and intuitive control buttons. It provides five output channels for versatile LED control.

4.1. Components and Controls



Image Description: A top-down view of the BSOD TC420 LED Time Controller, showing its LCD screen, five control buttons (Menu, Enter, Up, Down), input/output terminals, and a connected USB data cable.

- **LCD Display:** Shows current time, mode, and programming parameters.
- **Control Buttons:**
 - **Menu:** Accesses the main menu and navigates back.
 - **Enter:** Confirms selections and enters sub-menus.
 - **Up:** Increases values or moves selection upwards.
 - **Down:** Decreases values or moves selection downwards.
- **Power Indicator (LED):** Illuminates when the device is powered on.
- **Signal Indicator (LED):** Indicates data transmission or operational status.

4.2. Input/Output Ports



Image Description: A close-up view of the BSOD TC420 controller, highlighting the USB port, power input, and the five output channels (CH1-CH5) with their screw terminals, along with the V+ input terminals.

- **Power Input (DC 12-24V):** Connect your DC power supply here.
- **USB Port:** For connecting to a computer for programming.
- **Reset Button:** Resets the device (located near the USB port).
- **Input Terminals (V+, V-):** Connect the positive and negative leads from your DC power supply.
- **Output Terminals (CH1, CH2, CH3, CH4, CH5, V+):** Connect your LED products to these channels. The controller uses a common anode connection mode.

5. SPECIFICATIONS

Feature	Specification
Model	TC420
Color	Black
Material	Aluminum

Dimensions (L x W x H)	12 x 6.9 x 2.4 cm (4.72"D x 2.72"W x 0.94"H)
Item Weight	205g (7.2 ounces)
Working Temperature	-20°C to 60°C
Supply Voltage	DC 12V-24V
Output Channels	5 (CMOS drain-open output)
Connecting Mode	Common Anode
Max Load Current (per channel)	4A
Total Output Current	20A
Number of Settings	5 (likely referring to channels or programmable modes)

6. SETUP

6.1. Wiring Connections

Follow these steps to connect the TC420 controller to your power supply and LED products:

- 1. Prepare Components:** Ensure you have a compatible DC 12V-24V power supply and your LED strips/lights.
- 2. Connect Power Supply:** Connect the positive (+) output of your DC power supply to the V+ input terminal on the controller. Connect the negative (-) output of your DC power supply to the V- input terminal on the controller.
- 3. Connect LED Products:**
 - For single-color LEDs: Connect the positive lead of the LED to the V+ output terminal and the negative lead to CH1.
 - For dual-color LEDs: Connect the common positive lead to the V+ output terminal. Connect the first color's negative lead to CH1 and the second color's negative lead to CH2.
 - For RGB LEDs: Connect the common positive lead to the V+ output terminal. Connect the Red negative lead to CH1, Green to CH2, and Blue to CH3.
 - For RGBW LEDs: Connect the common positive lead to the V+ output terminal. Connect the Red negative lead to CH1, Green to CH2, Blue to CH3, and White to CH4.
 - Ensure that the total current draw for each channel does not exceed 4A and the total for all channels does not exceed 20A.
- 4. Secure Connections:** Tighten all screw terminals to ensure a firm and reliable connection.

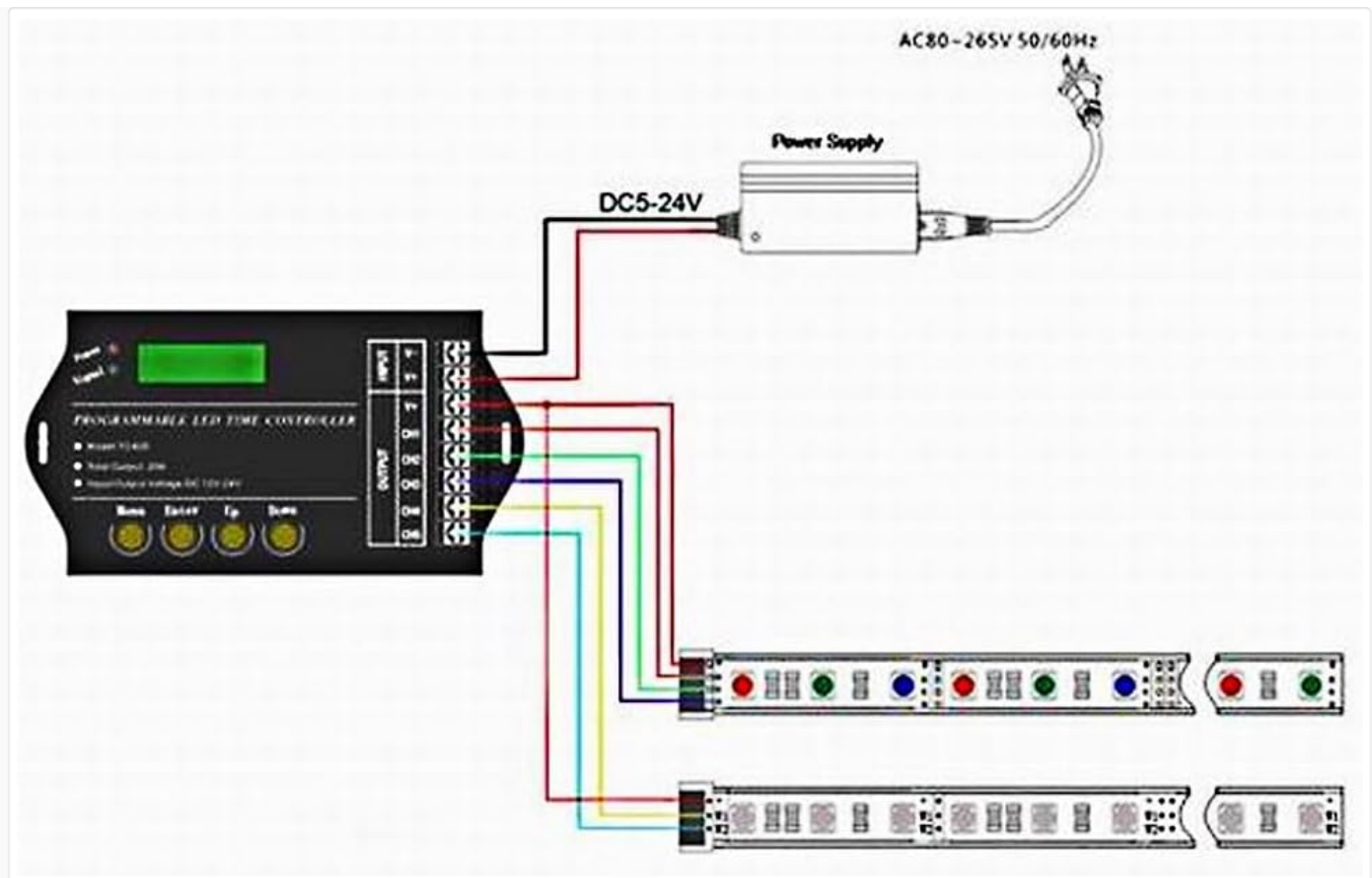


Image Description: A detailed wiring diagram illustrating how to connect a DC 5-24V power supply to the BSOD TC420 controller's input terminals, and how to connect various LED strips (single color, RGB) to the controller's output channels (CH1-CH5) and common V+ terminal.

6.2. Software Installation

The TC420 controller requires a computer program for advanced scheduling and configuration. The software is provided on the included CD.

1. Insert the provided CD into your computer's CD-ROM drive.
2. Follow the on-screen instructions to install the "Programmable LED Time Controller" software.
3. Once installed, connect the TC420 controller to your computer using the supplied USB data cord.
4. Launch the software. The software should detect the connected controller.

Note: The programming software is typically designed for Windows operating systems. Compatibility with other operating systems like Linux may vary or require alternative solutions.

7. OPERATING INSTRUCTIONS

The TC420 controller can be operated directly via its buttons for basic settings or programmed extensively using the PC software.

7.1. Basic Operation (On-Device)

Use the Menu, Enter, Up, and Down buttons to navigate the controller's built-in menu:

1. **Access Menu:** Press the **Menu** button to enter the main menu.
2. **Navigate Options:** Use the **Up** and **Down** buttons to scroll through menu items (e.g., Mode, Setup, Run).
3. **Select Option:** Press the **Enter** button to select a highlighted option.
4. **Adjust Values:** When a value is blinking, use **Up** and **Down** to change it. Press **Enter** to confirm and move to the

next digit/setting.

5. **Save and Exit:** After making changes, navigate to a "Save" or "Exit" option, or press **Menu** repeatedly to return to the main display, saving changes as prompted.

7.2. Advanced Programming (PC Software)

The PC software provides a graphical interface for creating complex lighting schedules.

1. **Connect Controller:** Ensure the TC420 is connected to your computer via USB and powered on.
2. **Launch Software:** Open the "Programmable LED Time Controller" application.
3. **Synchronize Clock:** Use the software's synchronous clock function to set the controller's internal clock accurately.
4. **Edit Schedule Mode:**
 - The software allows you to define specific times for each channel to turn on/off, adjust brightness levels, and create gradual fades.
 - You can customize schedules for each of the five channels independently or in groups.
 - Create different "modes" or programs for various scenarios (e.g., sunrise/sunset simulation for aquariums, holiday lighting).
5. **Download Program:** Once your schedule is created, use the software's "Download" or "Upload to Controller" function to transfer the program to the TC420 device.
6. **Verify Operation:** Disconnect the USB cable and observe the controller's behavior to ensure the program is running as expected.

The main menu display is as shown in figure 3:

					[M e n u]					
1 .	M o d e									

Figure 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:

[illegible]

Figure 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:

[illegible]

Figure 5

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", or 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:

				[	T	i	m	e	]				
				1	1	:	1	6	:	5	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:

					[D a t e]				
			1	3	- 0 1 - 0 1				

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:

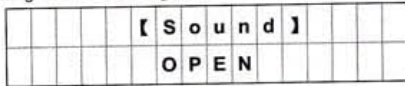


Figure 8

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:

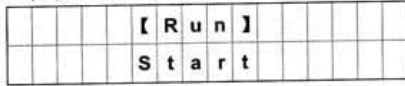


Figure 9

VII. Typical application

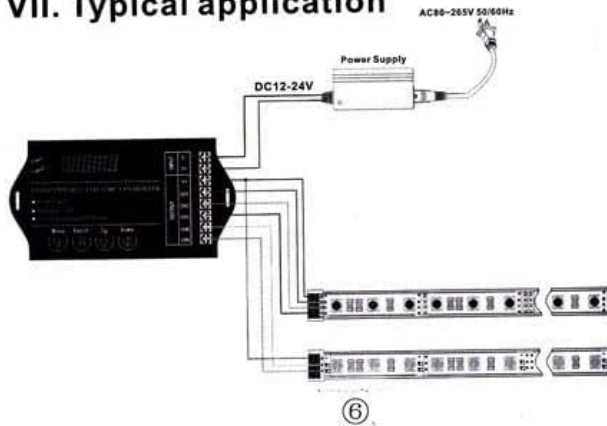


Image Description: A composite image showing various screens from the TC420's on-device menu, illustrating navigation through "Mode," "Setup," and "Time" settings, along with a partial view of the PC software interface for programming schedules.

8. MAINTENANCE

To ensure the longevity and proper functioning of your BSOD TC420 controller, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to wipe the exterior of the controller. Do not use liquid cleaners or abrasive materials, as they may damage the casing or internal components.
- **Environment:** Keep the controller in a dry, well-ventilated area, away from direct sunlight, high humidity, and extreme temperatures.
- **Connections:** Periodically check all wiring connections to ensure they remain secure. Loose connections can lead to intermittent operation or damage.
- **Software Updates:** Check the manufacturer's website periodically for any software updates that may improve performance or add new features.

9. TROUBLESHOOTING

If you encounter issues with your TC420 controller, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Controller does not power on.	No power supply, incorrect voltage, loose power connection.	Verify power supply is connected and providing DC 12-24V. Check power cable and connections.

LEDs do not light up.	Incorrect wiring, faulty LED, program error, channel disabled.	Check LED wiring (V+ and channel connections). Test LEDs with a direct power source. Review your programmed schedule to ensure channels are active.
Programmed schedule is not running.	Program not downloaded, incorrect time setting, "Run" mode not activated.	Ensure the program was successfully downloaded from the PC software. Verify the controller's internal clock is accurate. Check if the controller is set to "Run" mode via the on-device menu.
Controller disconnects from PC software.	Loose USB connection, driver issue, software conflict.	Ensure USB cable is securely connected. Try a different USB port or cable. Reinstall the software and drivers.
Inconsistent brightness or flickering.	Loose wiring, overloaded channel, power supply instability.	Check all wiring connections. Ensure total load does not exceed specifications. Test with a different power supply if possible.

If the problem persists after trying these solutions, please contact customer support.

10. WARRANTY INFORMATION

This product is covered by a standard manufacturer's warranty against defects in materials and workmanship. The warranty period typically begins from the date of purchase. Please retain your proof of purchase for warranty claims. The warranty does not cover damage caused by:

- Improper installation or wiring.
- Exceeding specified voltage or current limits.
- Unauthorized modifications or repairs.
- Accidental damage, misuse, or neglect.
- Exposure to unsuitable environmental conditions (e.g., water, extreme temperatures).

For specific warranty terms and conditions, refer to the documentation included with your purchase or contact BSOD customer support.

11. CUSTOMER SUPPORT

For technical assistance, troubleshooting, or warranty inquiries, please contact BSOD customer support through the following channels:

- **Online Support:** Visit the official BSOD store on Amazon: [BSOD Store](#)
- **Email:** Refer to the contact information provided on the product packaging or the BSOD store page.

When contacting support, please have your product model (TC420) and proof of purchase readily available.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question