

User manual for Digital controller

Version maintenance records		
Version	Date	Remark
V1.0.0	2019-08-01	New version
V1.0.1	2020-04-10	Modify trigger delay

April,2020 Revised

Safety instructions

- ✧ To avoid possible damage from electric shocks, remove the power cord from the power socket before moving the controller.
- ✧ When connecting other hardware devices to the controller, please cut off the input power supply of the controller. Please carefully check whether the input and output wires are connected correctly to ensure that the controller and peripheral devices are working reliably.
- ✧ Make sure that the voltage setting for the power supply has been adjusted to the voltage standard used in the country or region. If you are not sure about the supply voltage in your area, please consult the local power company nearby.
- ✧ To ensure safety and improve anti-interference, ensure that the ground wire of the input power supply is reliably grounded.
- ✧ To ensure that the trigger of the controller is stable and correct, ensure that the trigger input signal is electrically isolated from the device.

Operating safety instructions

- ✧ Please read the instructions carefully before using the product.
- ✧ Before using the product, please confirm the appearance and other quality of the product. If any major defects are found, please contact us as soon as possible.
- ✧ Please try to avoid using the controller in dust, high temperature and high humidity environment.
- ✧ Do not put the controller in a shaky place.
- ✧ Do not connect the controller with live wire.

1. Product introduction

1.1 Welcome to using our products

Thank you for purchasing our light source controller!

Our products have high quality, high characteristics, please rest assured to use!

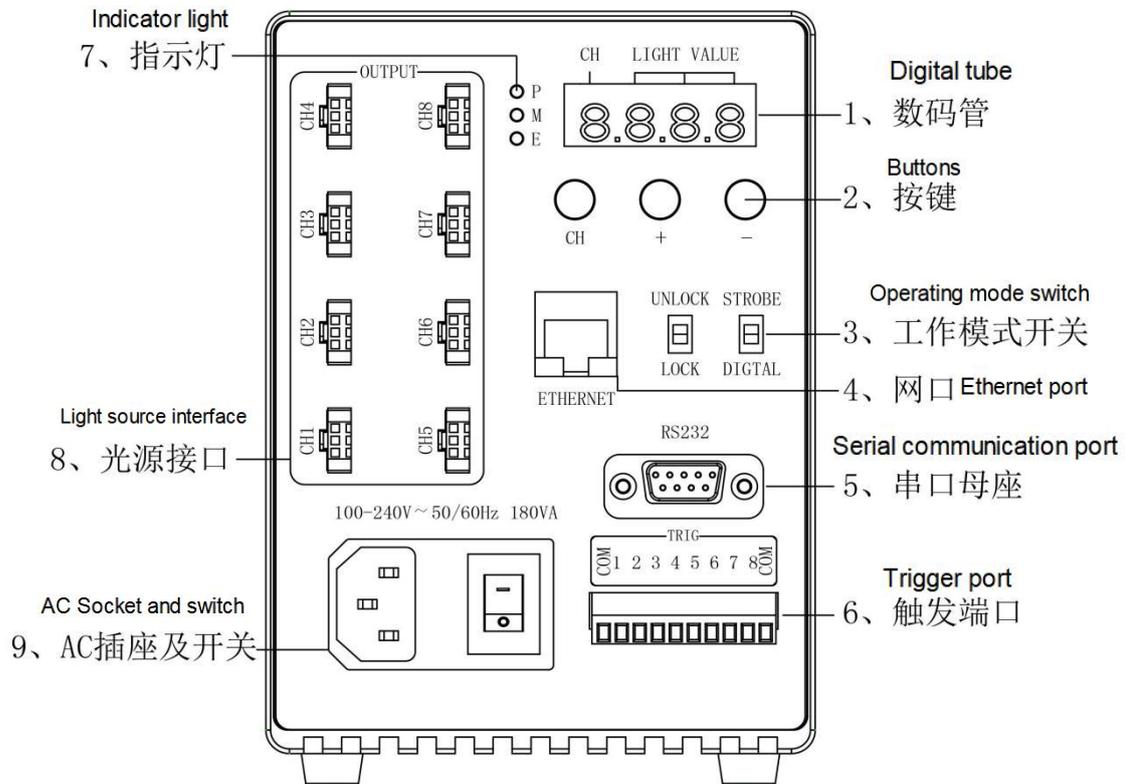
1.2 Product features

- 1、Set of negative trigger/positive trigger, ON/OFF light, strobe light in one.
- 2、Digital display, easy to confirm the setting value.
- 3、Communication mode: RS232 communication and Ethernet communication.
- 4、Installation method: Screw or DIN rail.
- 5、External trigger input adopts high speed optocoupler design, high speed and reliability.

1.3 Product specification

Model	DLTC-24-8	DLTC-24-4
Drive mode	Constant Voltage	
Light control mode	0~255 level PWM control	
	Panel buttons/RS232/Ethernet	
Strobe pulse	0~999 ms (In this mode, the brightness of the light source is the max and cannot be changed)	
PWM frequency	250KHz	
Input Voltage	AC100-240V 50/60Hz	
Channel	8	4
Output voltage	DC 24V	
Max output voltage	5A(single channel max3A)	
Total power	120W	
Output port	SMP-03V-BC (1: output+ 2: NC 3: output-) (The first one from the left is pin1) 	
External trigger	DC5V~24V (current about5.6mA)	
Trigger delay	Strobe mode: <math><15\mu\text{s}</math> Digital mode: <math><19\mu\text{s}</math>	
Operating T&H	Temp: 0~40℃、Humidity: 20~85%RH (Non-condensation)	
Storage T&H	Temp: -20~60℃、Humidity: 20~85%RH (Non-condensation)	
Cooling method	Forced cooling	
Weight	720g or less	

2. Pannel instructions



Item	Interface	Instructions
1	Digital tube	The first digit from left is the channel of the current operation, and the last three digits are the corresponding values of the current operation.
2	Buttons	CH is the channel and function switch key, + increase the brightness, - reduce the brightness
3	Operating mode switch	LOCK: panel operating was locked, STROBE: Strobe mode, DIGTAL: Digital mode
4	Ethernet	Ethernet and PC device communication
5	Serial communication	RS232 and PC device communication
6	Trigger port	External input DC 5~24V trigger signal for synchronous output of light source
7	Indicator light	Normal mode: P light on, Strobe Mode: M light on, Controller abnormal: E light on
8	Light source interface	SMP-03V-BC interface, A total of 8 light source output, each can be independently controlled
9	AC socket and switch	Input AC100-240V50/60Hz

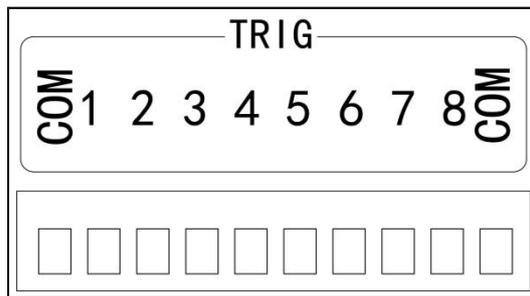
3. Trigger port specification

3.1 Trigger port definition

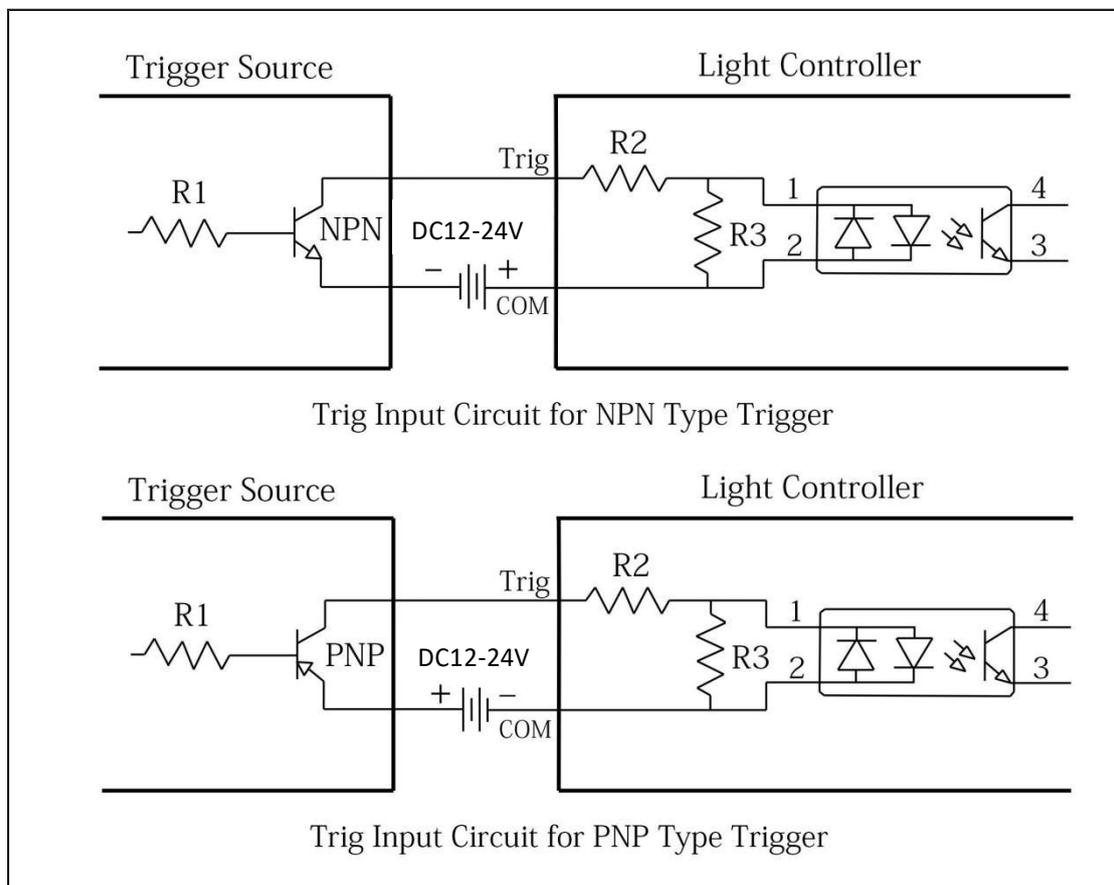
When the controller works in digital PWM mode, the trigger mode is level trigger, and there are two ways of following positive trigger and following negative trigger respectively;

When the controller works in strobe mode, the triggering mode is edge trigger, which has two ways: rising edge trigger and falling edge trigger respectively

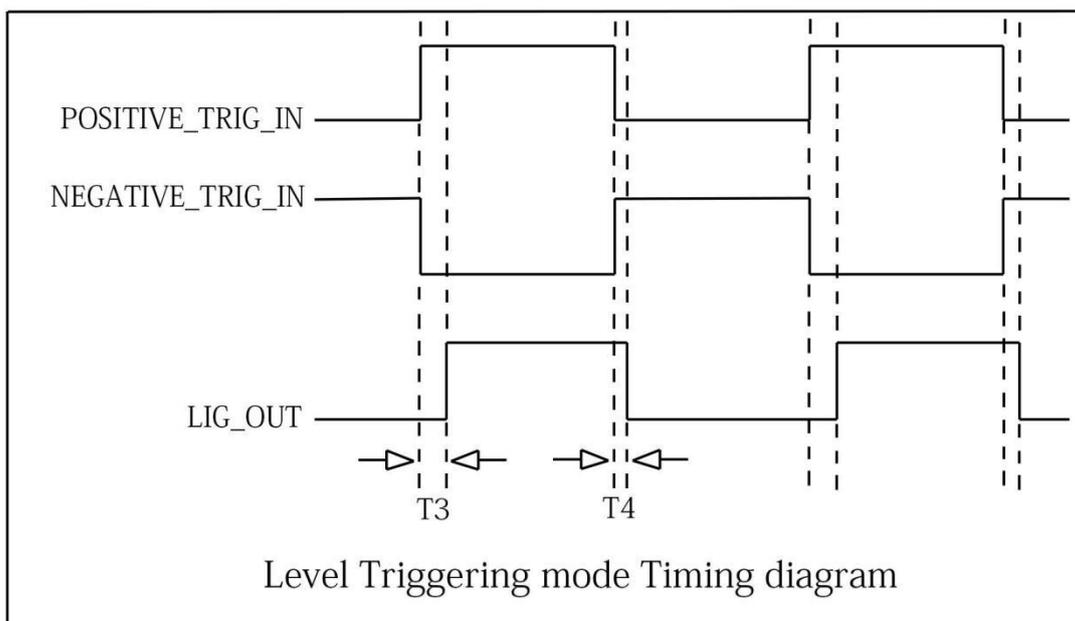
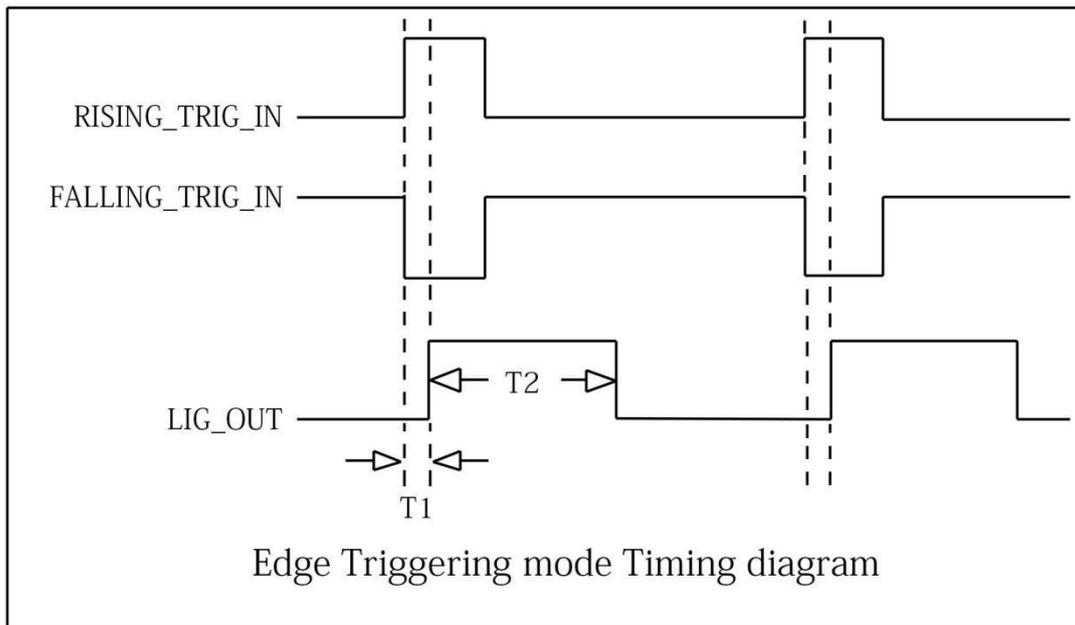
The trigger port has a total of 8 channels, COM is the common port, and contains bidirectional optocoupler isolation inside. The low level is when the INPUT DC is 0 ~ 2V, and the high level is when the input DC is 5 ~ 24V.



3.2 Trigger wiring diagram



3.3 Trigger sequence diagram



No.	Item	Description
1	T1	T1 is the trigger delay when in strobo mode, <math><15\mu\text{s}</math>
2	T2	T2 is the light source stroboscopic pulse width in stroboscopic mode
3	T3	T3 is the trigger delay when in digital mode, <math><19\mu\text{s}</math>
4	T4	T4 is the light source shutdown delay, depending on the load, generally is <math><10\mu\text{s}</math>

4. Communication protocol specification

configure:

Baud rate: 19200 bps

Data bits: 8 bit

Stop bit: 1 bit

Check bit: N/A

Static IP address:

192.168.1.208

Communication instruction list:

Function	Start character	Channel character	Data character	Ending character	Return Value	Instruction
Set the brightness of digital mode	S	A~H	0000~0255	#	a~h	Range: 0~255 degree
To gain the brightness of digital mode	S	A~H		#	a0000~a0255 h0000~h0255	For example: b0255 means the brightness for the second channel is 255 degree
Setting pulse width of strobe mode	SP	A~H	0000~0999	#	pa~ph	Range: 0~999ms (1ms Setpping)
Reading the pulse width strobe mode	SP	A~H		#	pa0000~pa0999 ph0000~ph0999	For example : pb0255 means the pulse width for the second channel is 999ms
Setting negative trigger/positive trigger mode	T		H/L	#	h / l	h negative trigger l positive trigger
Reading negative trigger/positive trigger mode	T			#	H / L	H negative trigger L positive trigger

For example: sending SA0255# to the controller, return a, means the successful setting the brightness of the first channel to 255 degree. Remark: 1、 All communication instructions are in character format.

- 2、 ss When the external trigger signal, light source ON; When there is an external trigger signal, light source OFF. Positive trigger : When there is no external trigger signal, light source OFF; When there is an external trigger signal, light source ON。

5. Installation dimension drawing

