Digital Current Controller For Spot Light

Selection Guide

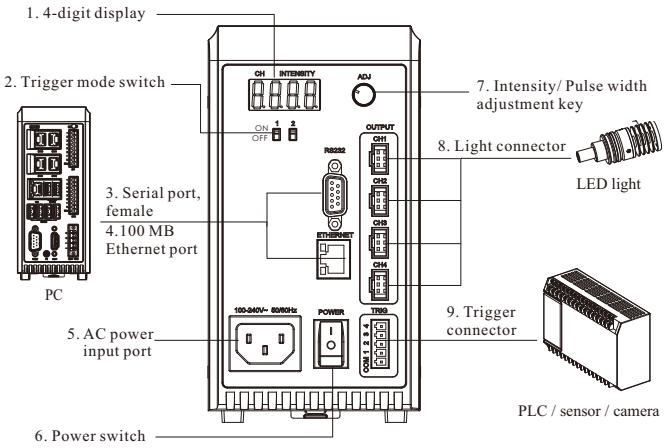
OPT - DPA 20 05 E - X

- X → Channels
- E → Communication interface: Ethernet
- 05 → Max output voltage: 5V
- 20 → Max output current: 2A
- DPA → Digital current controller
- OPT → Brand name

Product Features

1. Programmable trigger mode available, 32 steps at max; the trigger source, intensity and trigger pulse width of each step can be set
2. Autosense of rated current for LED light
3. Trigger response time ⩽ 20μs
4. Max trigger frequency upto 20KHz
5. Simultaneous communication of multiple channels available
6. Manual setting for max output current
7. 256 light intensity levels
8. Trigger signal input: connect an external signal source (e.g. a cameratrigger signal) to strobe the LED light, and extend life span of light
9. Support RS232 communication
10. Support 100M Ethernet communication
11. Temperature controlled fan, longer life span
12. Withstanding high voltage (AC1500V 1min, leak current<10mA)
13. High insulation resistance (DC500V >20MΩ)
14. Easy to install: screw and DIN rail mounting available.

Device Overview



No.	Item	Description
1	4-digit display	1st number indicates the channel, other 3 numbers show the value
2	Trigger mode switch	To change the trigger mode, refer to the manual for details
3	Serial port, female	RS232 communication interface with the PC
4	100 MB Ethernet port	Ethernet communication interface with the PC
5	AC power input	100 - 240 V AC, 50/60 Hz
6	Power switch	To turn the controller on/off
7	Intensity/ pulse width adjustment key	To adjust intensity or trigger pulse width. Press it, the chosen channel number twinkle on digit display; press it again will chose next channel. Rotate it in clockwise, the value increased; rotate it in anti-clockwise, the value decreased
8	Light connector	In total, four lights can be controlled individually
9	Trigger connector	For connection with an external trigger source

Trigger Mode Setting

Mode	Trigger mode switch 1	Trigger mode switch 2
Continuous on	ON	ON
Autosense for current once	ON	OFF
Normal trigger mode	OFF	ON
High power trigger mode	OFF	OFF

Parameters

Model	Parameters	Descriptions
Voltage input	AC100~240V	50/60Hz
Lighting mode	Continuous on / Strobe	Set via trigger mode switch or DEMO software
Autosense of rated current	For 10mA-2A 5V LED light	Autosense of rated current for LED light available via the DEMO software
Manual set for max outpu t current	10mA - 2A	Choose manual set via DEMO software
Intensity control	256 levels	Set via adjustment key or DEMO software
Short circuit protection	Yes	The related channel shuts down and “ER2” appears on the display
Over current protection	Yes	Once the current over 10% of set value the related channel shuts down and “ER1” appears on thedisplay

Model	Parameters	Descriptions
Normal trigger	256 intensitylevels	
High intensity trigger	2A output for single channel	
Unit of time	1μs/ 10μs/ 1ms/ 100ms	Set via DEMO software
Normal trigger pulse width	1μs~30s	Set via adjustment key or DEMO software
High intensity trigger pulse width	0.01~5.00ms	Set via adjustment key or DEMO software
Programmable trigger mode	Yes	Intensity, trigger pulse width, triggersource of each step can be set
Response time	≤20μs	
Trigger response frequency	20KHz	
Control of fan	Temperature	
Power output	10W/CH	4CH total output ≦ 30W; 8CH total output ≦ 50W
Communication	RS232 / Ethernet	
Standby power consumption	4CH: 8W	Input: 220V
	8CH: 9.2W	
Hi-Pot test	AC1500V 1Min	Leak current <10mA
Insulation resistance	DC500V	>20MΩ
Work temperature	-5℃~50℃	
Dimension (L×W×H)	4CH 91 x 132 x 171mm	Refer to drawing for details
	8CH 108 x 132.5 x 172.1mm	
Weight (kg)	4CH 1	
	8CH 1.3	

ERR Code Description

Code	ERR Reason	Display	Solution
Er0	no LED light connected	“Er0" on digit display	Connect LED light
Er1	over current protection	“Er1" on digit display	Remove ERR and reboot
Er2	short circuit protection	“Er2" on digit display	Remove ERR and reboot
Er3	over voltage protection	“Er3" on digit display	Remove ERR and reboot
Er4	hardware communication ERR	“Er4" on digit display	Return to OPT for repair
Er5	hardware communication ERR	“Er5" on digit display	Return to OPT for repair

Remark: “ ----”appears on the digit display during controller startup. And value will appear after startup finished

Trigger

DPA2005E has three kind trigger modes: normal trigger, high intensitytrigger, programmable trigger;
Four kind trigger polarities: rising edge trigger, falling edge trigger, real time positive trigger, real time negative trigger.
Default set is rising edge trigger

Trigger Mode	Trigger Polarity
Normal trigger	Rising edge trigger
	Falling edge trigger
	Real time positive trigger
	Real time negative trigger
High intensity trigger	Rising edge trigger
	Falling edge trigger
	Real time positive trigger
	Real time negative trigger
Programmable trigger	Rising edge trigger
	Falling edge trigger

Trigger Sequence Chart

Rising edge trigger
Illuminating time is equal to the set trigger pulse width.
Trigger pulse width set via DEMO or adjustment key.
Refer to Chart 1.1

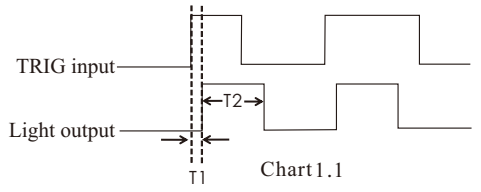


Chart 1.1

Falling edge trigger
Illuminating time is equal to the set trigger pulse width.
Trigger pulse width set via DEMO or adjustment key.
Refer to Chart 1.2

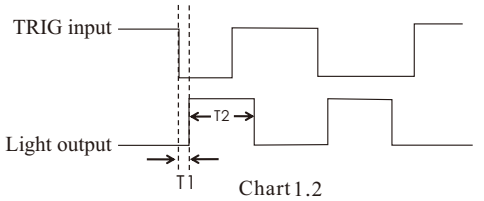


Chart 1.2

Real time positive trigger
When the trigger signal is high level, illuminating time is equal to pulse width of high level. Refer to Chart 1.3

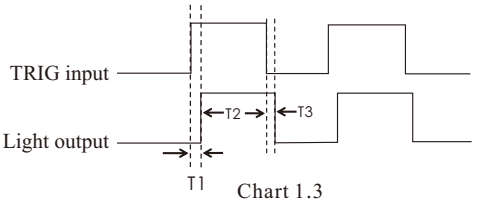


Chart 1.3

Real time negative trigger
When trigger signal is low level voltage, illuminating time is equal to low level pulse width. Refer to Chart 1.4

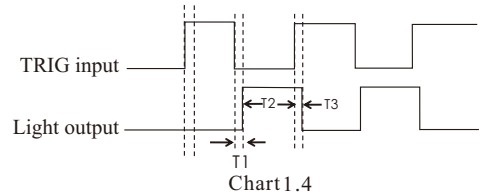


Chart 1.4

Remarks:
(1) T1: OFF to ON time; T2: Trigger pulse width; T3: ON to OFF time

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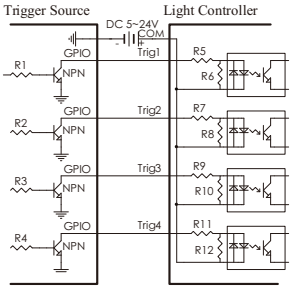
(2) Normal trigger: T1≤20μs, T3≤10μs, T2 can set 1μs ~30s.

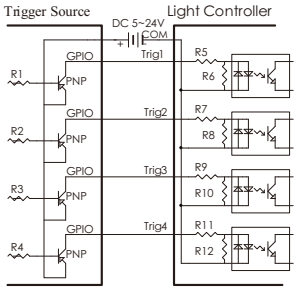
(3)High intensity trigger: T1≤20μs, T3≤10μs, T2 can \ set 0.01-5.00ms.

Trigger Wiring Diagram

4 trigger channels. "COM" is the common interface.Two -way optocoupler is inside. Input 0-2V is low level.
Input 5-24V is high level.
Default set is rising edge trigger. Wiring diagram as below



Trig Input Circuit for NPN Type Trigger



Trig Input Circuit for PNP Type Trigger

Dimensional Drawing [mm]