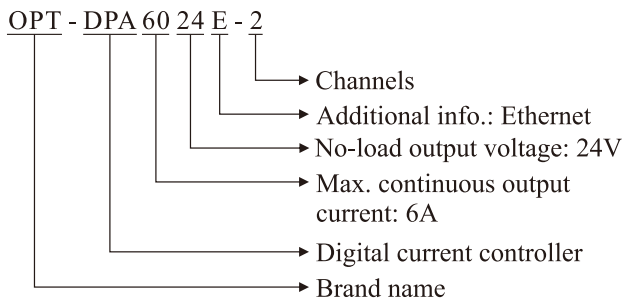


High Power Digital Current Controller **NEW**



Selection Guide



Product Features

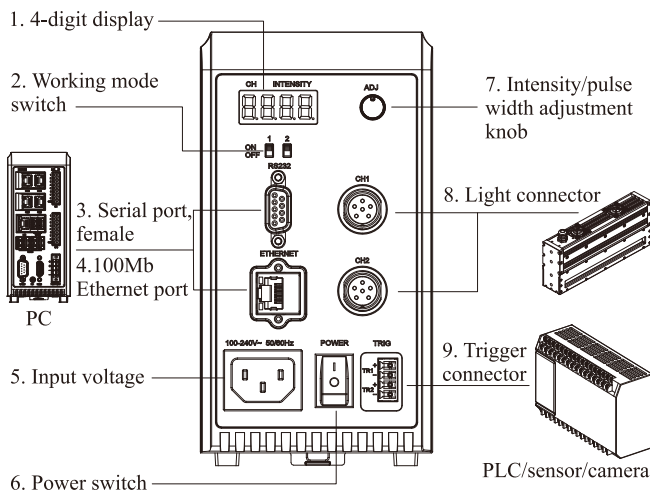
- Compact size
- Provide adaptive light source voltage function. Insert a light source with a rated voltage of 5-24V, the controller output voltage will automatically match with the light source voltage.
- Overdrive[®] technology. Brightness increment current can be set, maximum output up to 20A, and the brightness increment voltage controller can identify automatically.
- Autosense[™] technology
- Programmable trigger: Maximum of 64 programmable steps and intensity, pulse width and trigger source can be defined in each step.
- Provide trigger output duty cycle setting function. This function can effectively protect the light source during brightness increment and strobe.
- ≤ 10μs trigger response time
- Up to 40KHz trigger response frequency
- Trigger pulse width range: 1μs - 30s
- RS232 interface
- 100Mb Ethernet interface
- Provide software trigger function.
- Can cater for online device function upgrade.
- Temperature-controlled fan function
- Convenient mounting with screws or on DIN rails

Specifications

Item	Parameter		Description
	DPA6024E	DPA6024EB	
Input voltage	100~240V AC 50/60Hz		
Input current	4.2A/115VAC 2.1A/230VAC		
Lighting mode	Continuous/strobe		Set via the working mode switch or DEMO software
Auto sensing of light rated current	For 200mA-6A 5-24V LED light	For 200mA-6A 24V LED light	Set via DEMO software
Manual setting for max. output current	25mA~6A		Set via DEMO software
Intensity control	256 levels		Set via the adjustment key or DEMO software
Short-circuit protection	Yes		The related channel is shut down and "Er2" displays.
Overcurrent protection	Yes		Enabled when the output current is higher than 110% of the set value; the related channel is shut down and "Er1" displays.
Overload protection	Yes		Enabled when the Output power is higher than 160W of the value; the related channel is shut down and "Er6" displays.
Normal trigger	256 intensity levels settable		
Normal trigger time unit	1μs/10μs/1ms/100ms		Set via DEMO software
Normal trigger pulse width	1μs~30s		Set via the adjustment knob or DEMO software
High intensity trigger	Brightness increment current can be set, Max. output up to 20A	6A output per channel	6024E controller output voltage does not exceed 48V, 6024EB controller output voltage does not exceed 28V
High intensity trigger pulse width time unit	1μs/10μs/1ms		Set via DEMO software
High intensity trigger pulse width	1μs~999ms		Set via the adjustment knob or DEMO software

Item	Parameter		Description
	DPA6024E	DPA6024EB	
Programmable trigger	Support up to 64 processes		The intensity, pulse width, and trigger source of each step can be set.
Response time	$\leq 10\mu\text{s}$		See “Reference Table of Trigger Response Time” for details
Response frequency	$\leq 40\text{kHz}$		See “Reference Table of Trigger Response Time” for details
Output power	144W/CH		Total power less than 288W
Communication	RS232/Ethernet		
Standby power consumption	18.8W	13.3W	Tested at 220V AC
Hi-Pot test	1500VAC 1Min		Leakage current $< 10\text{mA}$
Insulation	500VDC		Insulation resistance $> 20\text{M}\Omega$
Operating temperature	$-5^{\circ}\text{C} - 50^{\circ}\text{C}$		
Dimensions (mm ³) (L × W × H)	91×132.5×170		Refer to the drawings for details
Weight (kg)	1.27	1.28	

Device Overview



No.	Item	Description
1	4-digit display	The first digit from the left indicates the operating channel, and the other 3 indicate the operating intensity or pulse width.
2	Working mode switch	Functional conversion; please refer to the working mode setting for details.
3	Serial port, female	Communicate with PC via RS232 interface
4	100Mb Ethernet port	Communicate with PC via Ethernet interface
5	Input voltage	100 - 240V AC, 50/60Hz
6	Power switch	Turns on and off the controller
7	Intensity/pulse width adjustment knob	Press the knob, the digit that flashes is chosen; press it again, the next digit is chosen; turn the knob in clockwise to increase the value and in anti-clockwise to reduce the value
8	Light connector	2 channels of light source output, and each channel can be controlled individually.
9	Trigger connector	Strobe mode can be also achieved by external trigger; trigger pulse width settable

Light Connector

Pin	Pin Definition
1	Light+
2	Light-
3	Fan+
4	Fan-
5	Res
6	Res

Working Mode Setting

Mode	Working mode switch 1	Working mode switch 2
Continuous	ON	ON
Auto sensing of light rated current once	ON	OFF
Normal trigger	OFF	ON
High intensity trigger	OFF	OFF

Error Code Description

Code	Description	Display	Solution
Er0	No LED light connected	“Er0”	Connect an LED light
Er1	Overcurrent protection	“Er1”	Remove ERR and reboot
Er2	Short-circuit protection	“Er2”	Remove ERR and reboot
Er3	Overvoltage protection	“Er3”	Remove ERR and reboot
Er4	Driver hardware communication ERR	“Er4”	Return to OPT for repair
Er5	Display hardware communication ERR	“Er5”	Return to OPT for repair
Er6	Overload protection	“Er6”	Remove light and reboot

Remark: “----” displays when the controller is turned on, and the corresponding value displays later.

Trigger

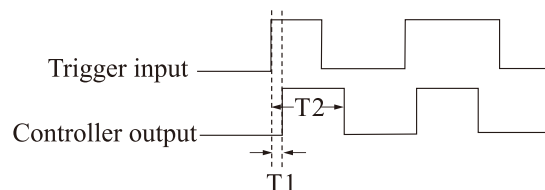
Trigger Mode	Trigger Polarity
Normal trigger	Rising edge trigger
	Falling edge trigger
	Positive follow trigger mode
	Negative follow trigger mode
High intensity trigger	Rising edge trigger
	Falling edge trigger
Programmable trigger	Rising edge trigger
	Falling edge trigger

Remark: Rising edge trigger is the default trigger polarity.

Trigger Sequence

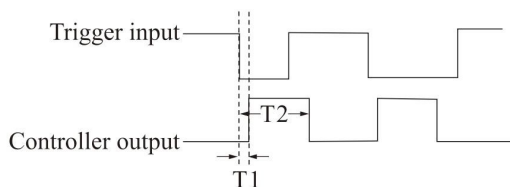
Rising edge trigger

The illumination time is equal to the trigger pulse width, which is set via DEMO software or the adjustment knob.



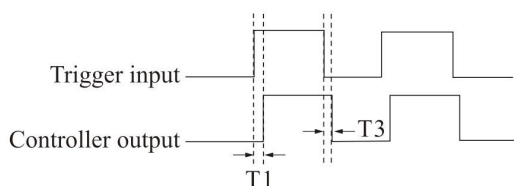
Falling edge trigger

The illumination time is equal to the trigger pulse width, which is set via DEMO software or the adjustment knob.



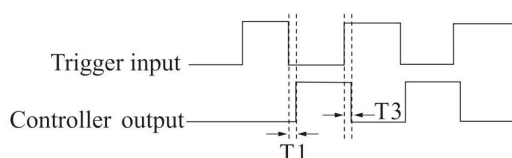
Positive follow trigger mode

When the trigger signal is at high level, the illumination time is same with the high-level pulse width.



Negative follow trigger mode

When the trigger signal is at low level, the illumination time is same with the low-level pulse width.



Remarks

1. T1: Enabling response time; T2: Trigger pulse width;
T3: Disabling response time
2. T2 setting range: 1μs - 30s;
Please refer to the table of trigger response time for T1 and T3

Reference Table of Trigger Response Time

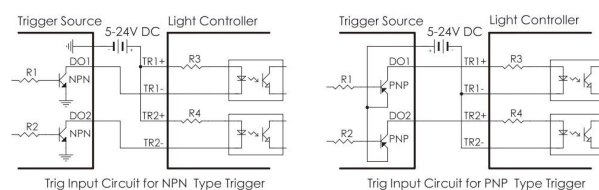
OPT-DPA6024E									
Trigger Voltage (V)	Output Current (A)	0.4		0.6		3		6	
		T1 (μs)	T3 (μs)	T1 (μs)	T3 (μs)	T1 (μs)	T3 (μs)	T1 (μs)	T3 (μs)
5		10	1.5	5.2	1.0	7.5	1.6	8.4	1.5
12		10	1.5	5.2	1.0	7.5	1.6	8.4	1.5
24		10	1.5	5.2	1.0	7.5	1.6	8.4	1.5

OPT-DPA6024EB

Trigger Voltage (V)	Output Current (A)	0.4		0.6		3		6	
		T1 (μs)	T3 (μs)	T1 (μs)	T3 (μs)	T1 (μs)	T3 (μs)	T1 (μs)	T3 (μs)
5		6.5	2	2.5	2	5.5	2	8	2
12		6.5	2	2.5	2	5.5	2	8	2
24		6.5	2	2.5	2	5.5	2	8	2

Level Trigger Wiring Diagrams

There are 2 trigger ports in this series of controllers (shown in the figure below), including unidirectional optocoupler isolation inside. It is low level when the input voltage is 0~2V, and high level when the input voltage is 5~24V. Two trigger wiring diagrams are given as below:



Dimensions (mm)

