# Digital Controller

## Model No

OPT - DPA 10 24 E - 4

- Channel
- Version
- Maximum output voltage: 24 V
- Maximum output current： 1 A
- Controller type: digital current controller
- OPT

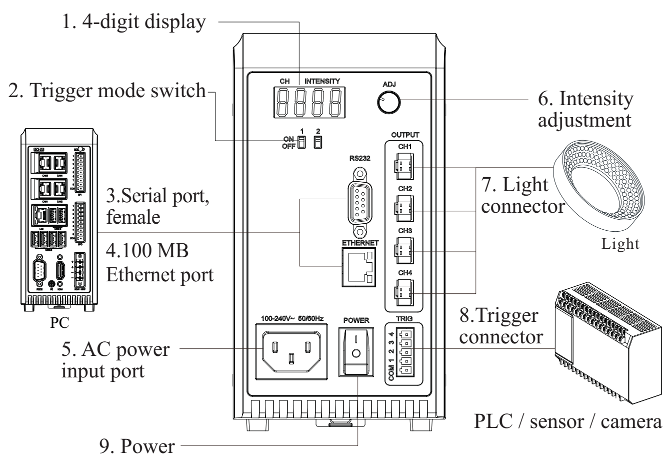
| Item | P/N | Channel | Light type |
|---|---|---|---|
| 1 | OPT-DPA1024E-4 | 4 | 10mA-1A 24V light |
| 2 | OPT-DPA1024E-8 | 8 | 10mA-1A 24V light |
| 3 | OPT-DPA1024E-16 | 16 | 10mA-1A 24V light |

## Products Features

1. 256 intensity level control.
2. Detects max. output current automatically.
3. Manual set up of max. output current.
4. Multiple channels can be controlled at the same time.
5. Trigger signal input: connect an external signal source (e.g. a camera trigger signal) for synchronized strobing of the illumination device.
6. Width of the trigger pulse can be defined
7. RS232 communication
8. 100 Mb Ethernet communication.
9. Easy to install: screw mount or DIN rail are available

## Device Overview

| No. | Item | Description |
|---|---|---|
| 1 | 4-digit display | The first number indicates the channel and the other 3 numbers show intensity level |
| 2 | Trigger mode switch | 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 | Intensity adjustment | Adjusts the intensity and width of the trigger pulse |
| 7 | Light connector | In total, four lights can be controlled individually |
| 8 | Trigger connector | For connection with an external trigger source such as a PLC, sensor or camera |
| 9 | Power | Turns the controller on/off |




### Connection Setup

Step 1: Refer to right drawing on how to connect the light with the controller.

Step 2: For external triggering, connect the external trigger source with the trigger port.

Step 3: Connect the controller with an 100 - 240 V AC power source and switch the controller on. The digital display is lit. If the intensity of the light shall be controlled via PC, you need to connect the PC with an RS232 cable or Ethernet cable before the controller is switched on. Use the provided software or your own application to communicate with the controller. You can adjust the settings via the PC or manually.

### Trigger mode set

| Mode | Ts1 | Ts2 |
|---|---|---|
| continuous mode | ON | ON |
| Auto current test | ON | OFF |
| Normal trigger mode | OFF | ON |
| High power trigger mode | OFF | OFF |

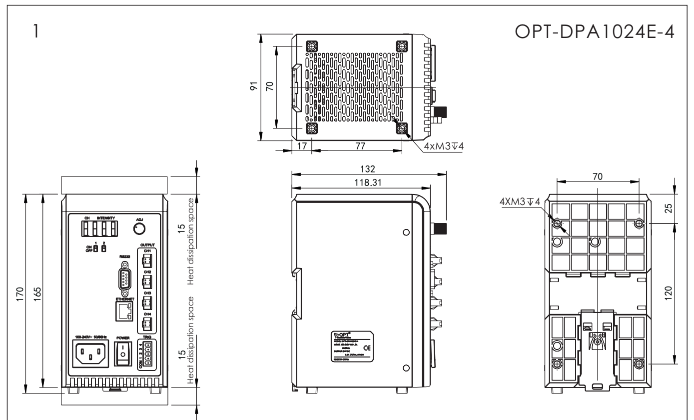


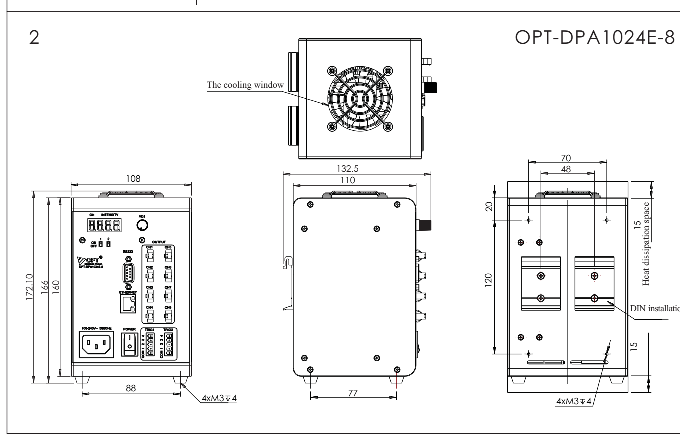


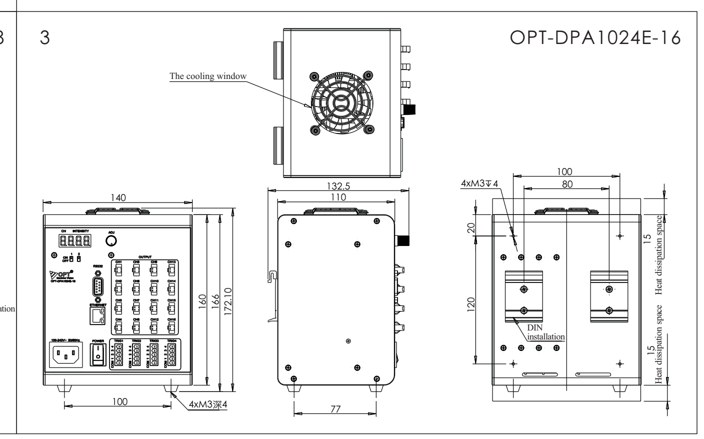
## Parameter Description

| Item | Parameter | | Details |
|---|---|---|---|
| Input voltage | 100-240 V AC | | 50/60Hz |
| Automatic detection of the max. output current | For 24V lights | | Automatic detection available via the provided software |
| Max. output current | 10 mA to 1A | | Set the max. output current by hand via DEMO software |
| Light intensity | 256 intensity levels | | Adjust by intensity adjust key or DEMO software |
| Short circuit protection | Yes | | Protection shuts down the related channel and “ER2” appears on the display |
| Over current protection | Yes | | When the current is over 10% of set value the related channel is shut down and “ER1” appears on the display |
| Normal triggering | 256 levels | | |
| High-intensity triggering | 1 A per channel | | |
| Width of normal trigger pulse | 0.1 ms - 999 ms | | Can be adjusted by the intensity adjustment key or via software |
| Width of high-Intensity trigger pulse | 0.01 ms - 5.00 ms | | Can be adjusted by the intensity adjustment key or via software |
| Trigger way | level trigger | | |
| Output power | 20 W per channel | | Max. total output power of DPA1024E-4/8: 48 W<br>Max. total output power of DPA1024E-16: 180 W |
| Communication | RS232 or Ethernet | | |
| Standby power consumption | DPA1024E-4 | 8 W | Input 220 V |
| | DPA1024E-8 | 9.2 W | |
| | DPA1024E-16 | 13.7 W | |
| Overvoltage resistance | 1500 V AC for 1 min | | Leak current < 10 mA |
| Insulation resistance | 500 V DC | | Insulation resistance > 20 MΩ |
| Operating temperature | -5°C - 50°C | | |
| Size [mm] | DPA1024E-4 | 91 x 134.41 x 17 | |
| | DPA1024E-8 | 108 x 132.5 x 166 | |
| | DPA1024E-16 | 140 x 132.5 x 160 | |
| Weight [kg] | DPA1024E-4 | 1 | |
| | DPA1024E-8 | 1.3 | |
| | DPA1024E-16 | 1.72 | |

## Dimensions [mm]

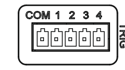



### Trigger Port and Setup

The trigger mode of this type controller is level trigger, so the trigger mode can be achieved by high voltage trigger, low voltage trigger, rising edge trigger and falling edge trigger, and the connection COM port is the same in the controller. The high power trigger (input voltage range is 5V to 24V) and low power trigger (input voltage range is 0V-2V) is separated by the dual opto-couple inside. For the rising edge trigger and falling edge trigger, normally the delivered item is rising edge trigger, but it can be adjusted to falling edge trigger by the trigger switch key on the panel.



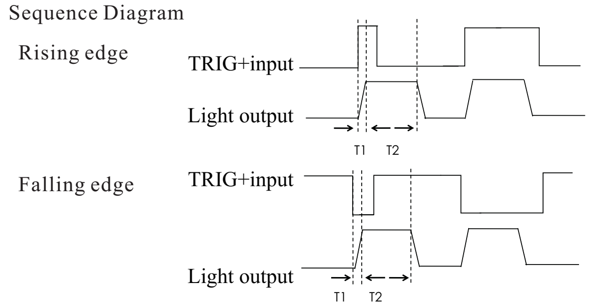

### Normal trigger mode

To input parameter 1 in DEMO software or turn connector 1 into OFF and turn connector 2 into ON, the controller turns to normal trigger mode and intensity can be adjusted from 0 to 255 level, the wide of trigger pulse can be adjusted from 1 to 999ms and it can be set through DEMO software or intensity switch key.

### High intensity trigger mode

To input parameter 2 in DEMO software or turn connector 1 and 2 into OFF at the same time, the controller turns to high intensity trigger mode and one channel outputs 1A. Trigger delay time can be adjusted from 0.01 to 5.00ms and it can be set through DEMO software or intensity switch key.

Sequence Diagram




Description
T1 is the trigger delay time while T2 is the width of the trigger pulse. Normal trigger mode: T1 80 µs; T2 can be set from 1 to 999 ms. High intensity trigger mode: T1 80 µs; T2 can be set from 0.01 to 5.00 ms.

Wiring Scheme of Two Use Cases