

Good Thinking, Good Future

**FASTUS**

LED Lighting Controller with Ethernet Connectivity

**OPPD-30E**

FASTUS is a product brand of Optex FA.



Taking lighting control  
to the next level

Easy Ethernet  
connectivity

Mitsubishi  
Electric  
iQSS support

**iQSS**

Automatic  
brightness  
management



**OPTEX FA CO., LTD.**



**OPPD-30E**  
 Size: W48 × H72 × D72 mm  
 Communication method: Ethernet  
 Capacity: 30 W  
 Illumination output: 2 ch

# Simplify lighting control with an Ethernet-connectable compact controller

The FASTUS OPPD-30E is an LED lighting controller with Ethernet connectivity that reduces the effort required for lighting control.

In addition to simple configuration of dimming and illumination lighting control from a PC or a PLC, the OPPD-30E is also compatible with Mitsubishi Electric's iQSS systems and can be used in a variety of engineering environments in the manufacturing field.

The OPPD-30E also makes it easy to catch decreases in lighting brightness, allowing for predictive lighting maintenance through IoT (Internet of Things) setups.

## Simple dimming and illumination control through Ethernet communication

Connecting is simple—just plug in a LAN cable!

With support for DHCP, the OPPD-30E automatically obtains IP addresses and other information necessary for connection. Manual configuration of network settings required with conventional models is unnecessary, and communication can be easily established simply by connecting a LAN cable within a DHCP server network environment.



## High-speed communication

With the OPPD-30E, dimming values can be rewritten for both channels in about 6 ms.

**OPPD-30E : Approx. 6 ms / 2 ch**

Conventional Optex FA models : Approx. 11 ms / 2 ch

Other manufacturer products or equivalent : Approx. 18 ms / 1 ch

## Simple PC software-based setup

\*LAN cable required separately.

Dedicated PC software is available for the OPPD-30E. This software can be used to configure dimming, illumination control and frequency, among other aspects. Access the Optex FA homepage to download the software for free.



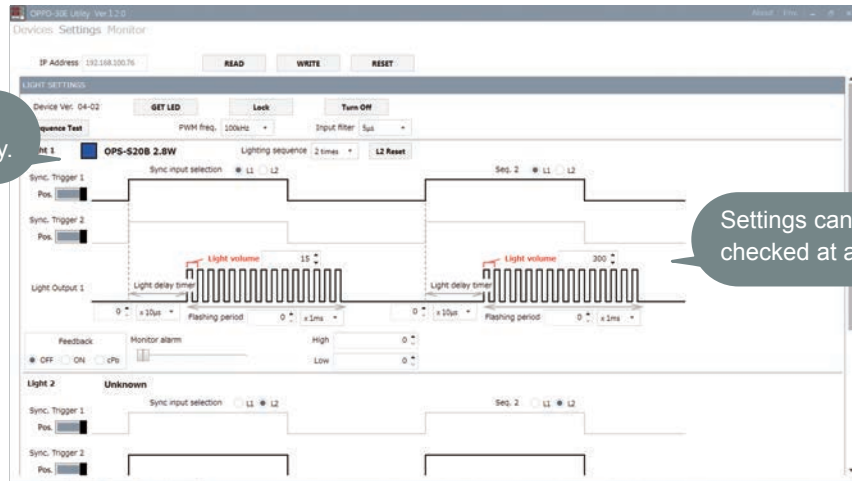
### ● Intuitively operable interface

The software interface has been developed so that dimming and illumination control can be seen at a glance. Settings can be easily configured through pull-down menus or through direct input.

Connected lighting is detected automatically.

### ● Configurable settings

- PWM frequency
- Illumination control input selection
- Dimming value/Light emission width
- Lighting delay time
- Feedback
- Monitor brightness alarm, etc.



Settings can be checked at a glance.

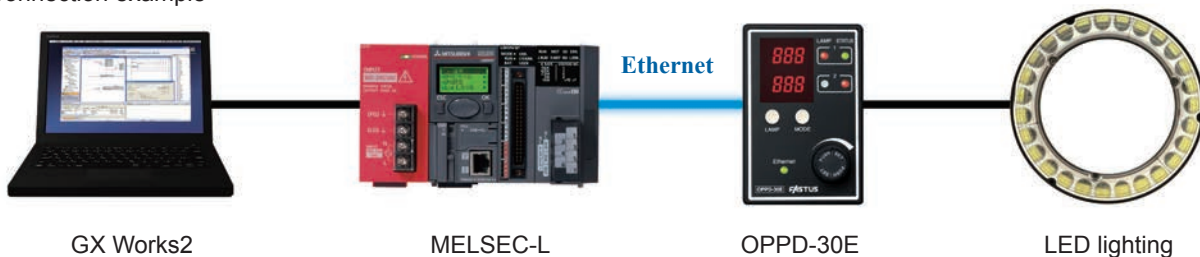
\*Screen content and layout subject to change.

## / Mitsubishi Electric iQSS support

iQSS: iQ Sensor Solution

The OPPD-30E can be operated over networks using Mitsubishi Electric's GX Works2. Through connection and cooperation among image-processing lighting, power supplies, PLCs, displays, and other control equipment, batch management is possible and workability can be increased.

Connection example



GX Works2

MELSEC-L

OPPD-30E

LED lighting



## Simplification through iQSS

- Automatic detection of connected devices
- Ethernet communication configuration
- Parameter reading/writing
- Backup/restoration of settings
- Monitoring of current values, statuses, and error details

# New lighting control features

## Illumination control input allocation function

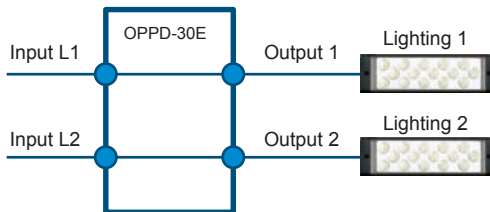
An industry first!

With conventional models, one lighting output is allocated per controller input.

With the OPPD-30E, users can switch between one or two lighting units for every input at the controller.

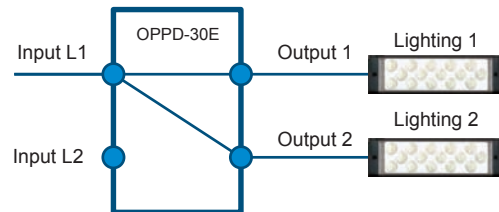
In addition to reducing the number of wiring, the OPPD-30E enables flexible input changes even after wiring has been completed.

### Conventional setup

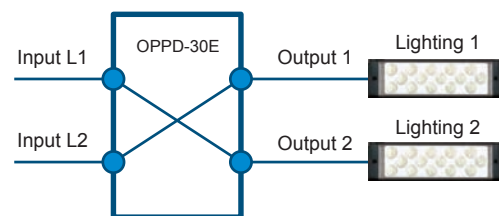


### Allocation examples

Ex. 1: Simultaneous output to 2 channels for 1 input



Ex. 2: Switchable output



## Lighting control sequence

An industry first!

With the OPPD-30E, up to four illumination setting patterns including dimming values can be configured.

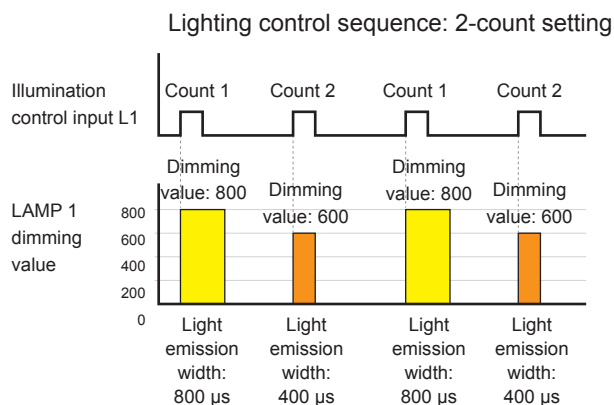
Each pattern can be configured in an illumination control sequence with ordered switching for each illumination control input. (Lighting delay time settings are shared.)

With dimming values and illumination widths set in advance, automatic switching is only performed for illumination control input, allowing the time required for changing settings to be kept to a minimum.

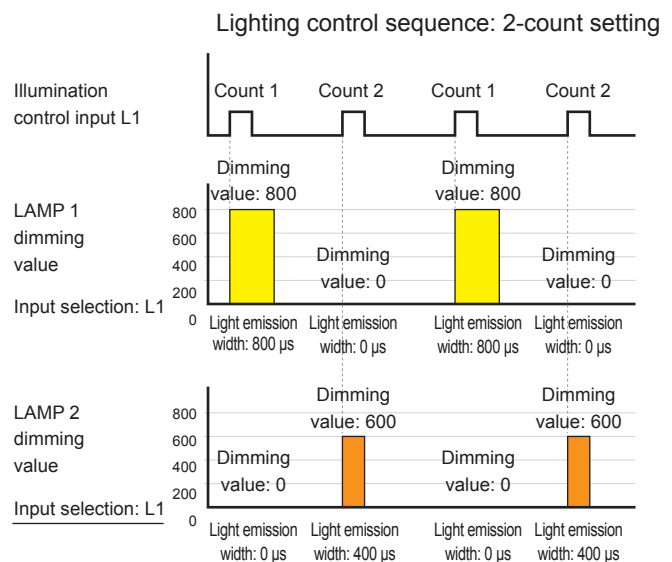
With conventional models, control is not possible without using a PLC and setting up complex ladders.

With the OPPD-30E, such control can be achieved with no other equipment required.

### Ex. 1: Dimming value/light emission width switching



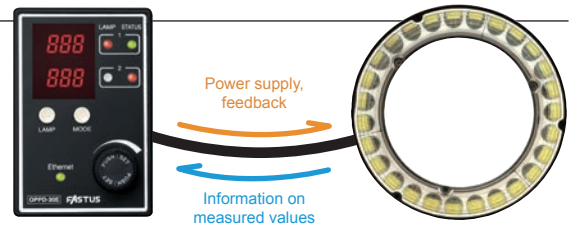
### Ex. 2: Lighting switching





## Brightness/temperature monitoring and feedback control

Connecting the OPPD-30E to lighting equipped with “FALUX sensing” enables monitoring of the lighting brightness and temperature. Based on these monitored values, dimming feedback control can be performed, allowing brightness to be kept constant.



### ● Monitoring function

The lighting’s built-in photodiodes are used to monitor the brightness of the lighting.

**Alarm output:** Setting a threshold in advance makes it possible to output an alarm when brightness decreases to a predetermined level.

**Instrumental error adjustment:** Absolute brightness monitoring makes it possible to adjust for lighting instrumental errors.

### ● Dimming feedback control

#### Automatic brightness management

With LED lighting, decreases in brightness can occur due to various factors including drops in voltage caused by extension cables and LED deterioration.

The factory default brightness is maintained through automatically corrected dimming values to prevent drops in brightness. Corrections can be verified as “Corrected dimming value.”

The feedback range is determined by the set dimming value and the maximum dimming value (999).

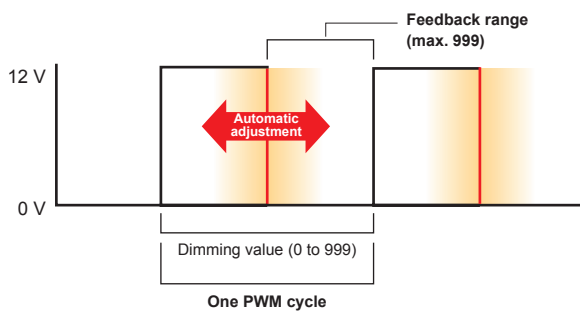
A signal is output as a feedback error when the maximum dimming value is reached.

#### [Feedback mechanism]



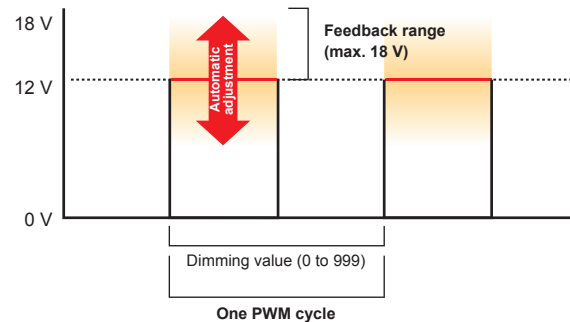
#### OPPD-30E

The PWM ON time is corrected according to changes in brightness, allowing brightness to be automatically adjusted.



#### <Reference> OPPF Series

Output voltage is corrected according to changes in brightness, allowing brightness to be automatically adjusted.



## Measured brightness/temperature logging function

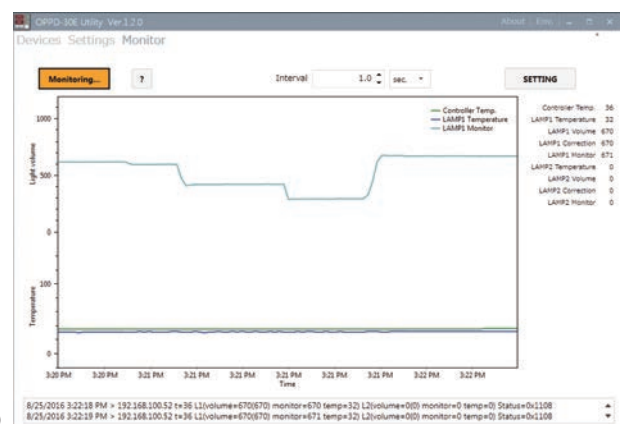
Measured values such as brightness and temperature can be collected and displayed in a graph using the dedicated software (PC).

Data can be output as a .csv file. Displaying monitored values allows users to recognize LED degradation, which is useful as a function for predictive lighting maintenance.

### ● Recordable items

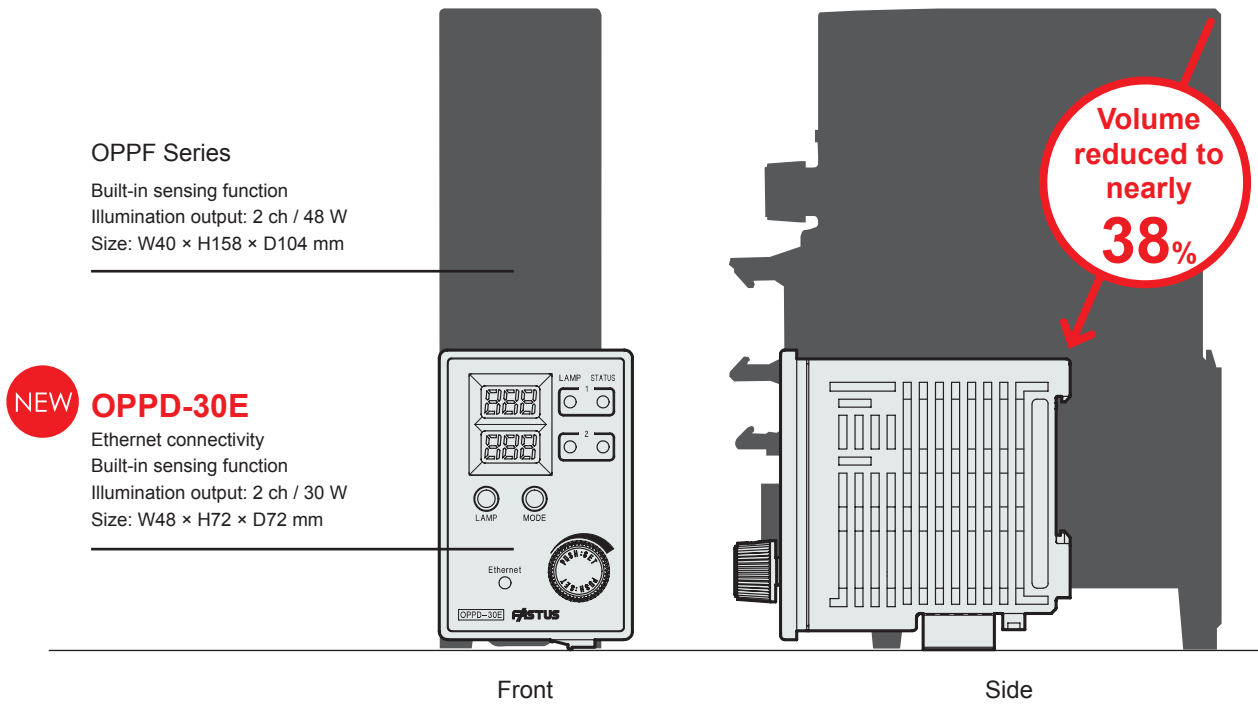
- Dimming value
- Monitored value
- Corrected dimming value
- Lighting temperature
- Power supply temperature

Monitor screen (dedicated software)



## Compact size

Thanks to high-density mounting technology and an optimal heat dissipation design, the OPPD-30E boasts a size just 38% that of OPPF Series products.

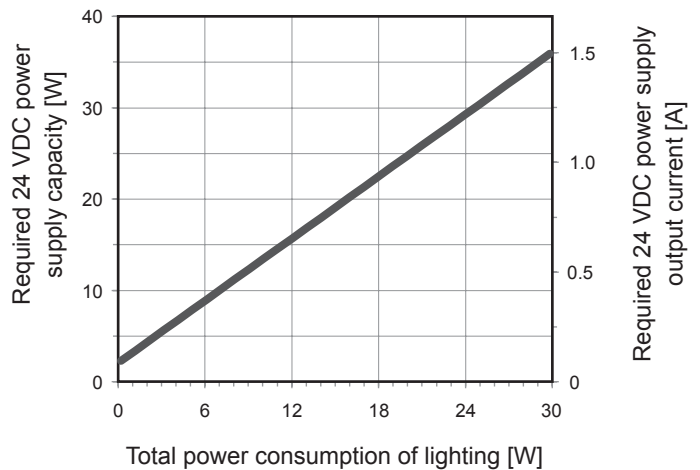


### Required 24 VDC power supply capacity to handle power consumption of lighting

Based on the total power consumption of the LED lighting to be connected, select a 24 VDC power source that offers more than the required capacity.

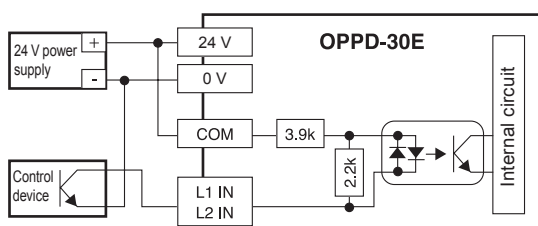
Note:

When using in conjunction with other equipment, the characteristics of the other equipment will affect the power supply, so be sure to choose a power supply that has a sufficient margin (about twice as much) as that shown in the table.

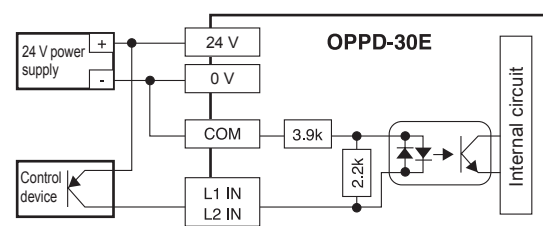


### Connection to external device

With NPN open collector output device



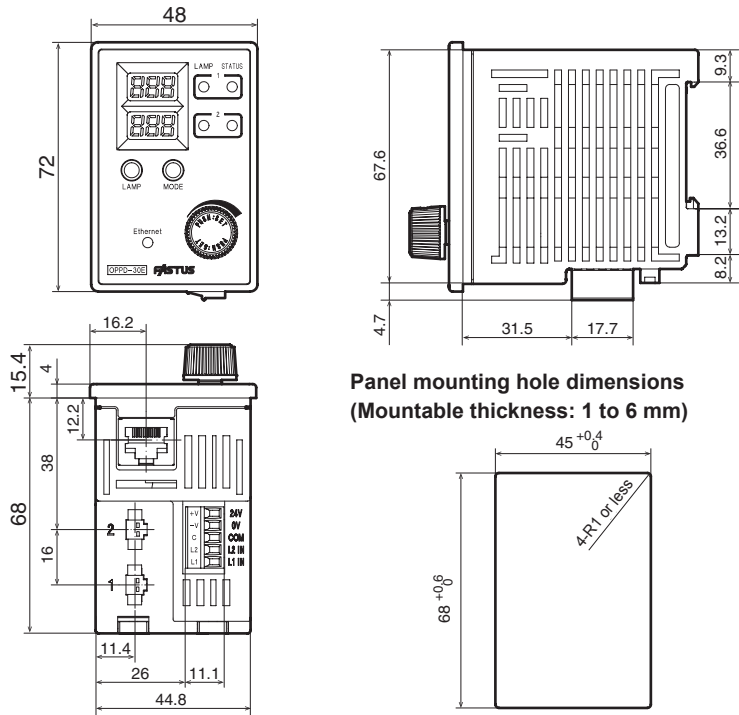
With PNP open collector output device



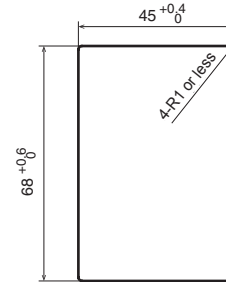
\*When connecting voltage output control equipment, input 12 to 30 VDC between IN and COM. The photocoupler input is bipolar.

# Dimensions (mm)

## ■ Main unit

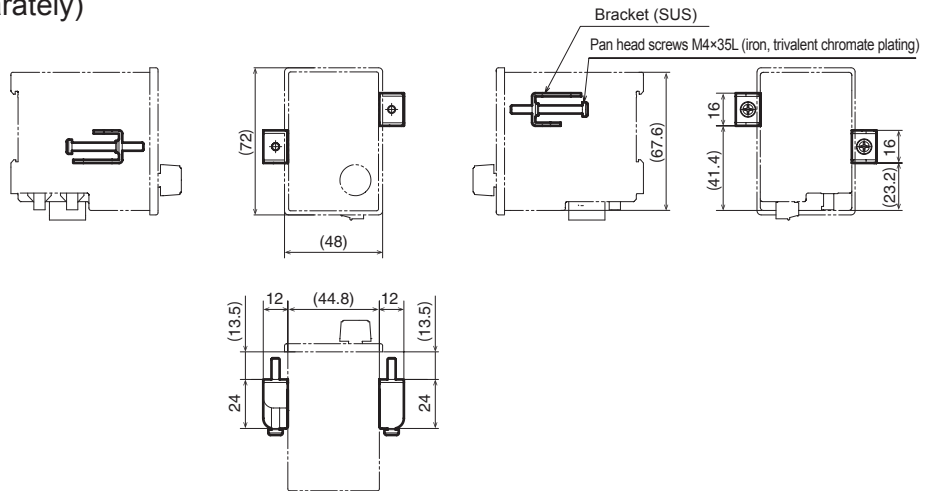


Panel mounting hole dimensions  
(Mountable thickness: 1 to 6 mm)

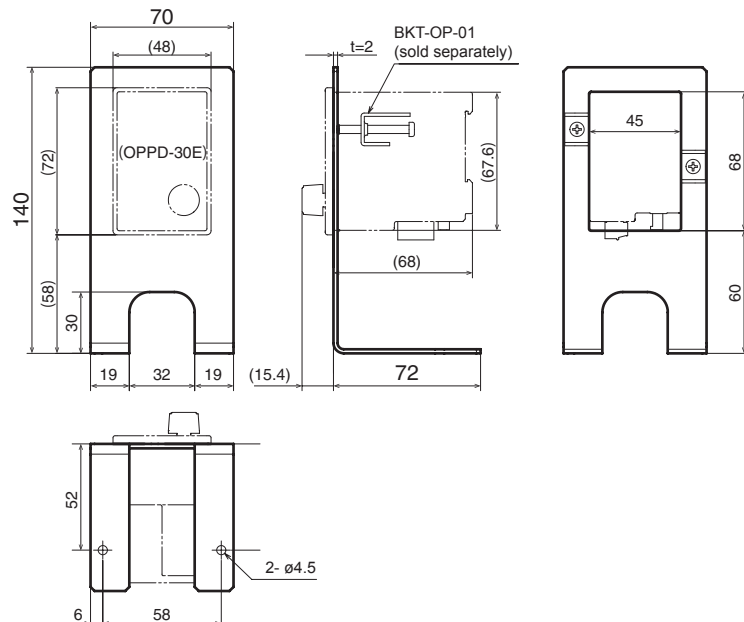


## ■ Options (sold separately)

Panel mounting bracket  
BKT-OP-01

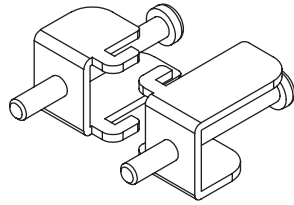


Panel stand  
PNL-OPPD

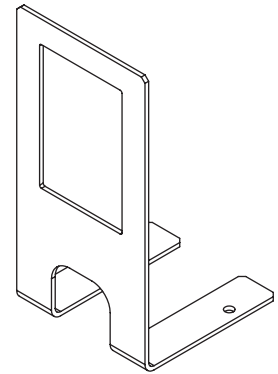


## ■ Options (sold separately)

Panel mounting bracket  
BKT-OP-01



Panel stand  
PNL-OPPD



## ■ Specifications

| Model                        | OPPD-30E  |
|------------------------------|---|
| Power supply voltage         | 24 VDC $\pm$ 10%  |
| Current consumption          | Max. 1.3 A  |
| Illumination output          | 2 ch  |
| Connectable lighting         | Max. 30 W (total for 2 channels)  |
| Illumination output voltage  | PWM mode: 12 VDC  |
| Illumination output current  | Max. 2.5 A (total for 2 channels)   |
| Dimming method               | PWM dimming, Frequency: 50/100/99/98/97 kHz   |
| Monitoring                   | Lighting brightness monitor / Lighting internal temperature monitor, Monitor brightness alarm upper/lower limit value setting   |
| Feedback                     | PWM correction method   |
| Input                        | External illumination control $\times$ 2<br>ON voltage: 12 V or more, OFF voltage: 2 V or less, Max. input voltage: 30 V<br>Input response time (actual value) With 24 V input (OFF $\rightarrow$ ON: 5 $\mu$ s), (ON $\rightarrow$ OFF: 50 $\mu$ s)<br>With 12 V input (OFF $\rightarrow$ ON: 8 $\mu$ s), (ON $\rightarrow$ OFF: 45 $\mu$ s)<br>Input resistance: 3.9 k $\Omega$ , insulated |
| Communication interface      | Ethernet 10BASE-T/100BASE-TX, AutoMDI-X   |
| Communication protocol       | UDP/IP, DHCP, iQSS  |
| Communication response speed | From command reception to response completion: 6 ms (typ.)  |
| Protective functions         | Overcurrent, power supply internal temperature monitoring (PWM output cut to 1/4 at 105°C)  |
| Applicable regulations       | EMC (2014/30/EU) / RoHS (2011/65/EU, directive 32)  |
| Applicable standards         | EN 61326-1: 2013, EN 55011: 2009 / A1: 2010 Group 1, Class A  |
| Protection rating            | IP30 (IEC 60529: 1989 / A1: 1999 + A2: 2013)  |
| Ambient temperature/humidity | 0 to 40°C / 35 to 85% RH (no condensation)  |
| Storage temperature/humidity | -20 to 70°C / 35 to 95% RH (no condensation)  |
| Vibration resistance         | 10 to 55 Hz; amplitude: 1.5 mm; 2 hours in each of the X, Y, and Z directions   |
| Shock resistance             | Approximately 10 G, 3 times in each of the X, Y, and Z directions   |
| Insulation resistance        | 500 VDC, 10 M $\Omega$ or more  |
| Material                     | Housing: Polycarbonate and aluminum   |
| Weight                       | 150 g   |
| Accessories                  | Instruction manual, Terminal block $\times$ 1   |
| Options                      | Panel mounting bracket, Panel stand   |

### Attention: Not to be Used for Personnel Protection.

Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death. These sensors do not include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition. Please consult our distributors about safety products which meet OSHA, ANSI and IEC standards for personnel protection.

- Specifications are subject to change without prior notice.
- Specifications and technical information not mentioned here are written in Instruction Manual. Or visit our website for details.
- All the warnings and cautions to know prior to use are given in Instruction Manual.



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