Band-Pass Filters

Lens Filters
Diffusion Plates
Polarizing Plates

Light Control Films

Fixtures, etc.

Brackets SM/EL Cables

## **Control Units**

# Digital Control Units PD3 Series

CCS PD3 ▶ Se

For quick access





## Select Digital Control Units matching your network









Compliant

The supplied AC cord is for use with 100 to 120 VAC. If you want to use the Control Unit with 200 to 240 VAC, you must procure another appropriate AC power cord.

For information on change in model names, refer to P.329

## **Features**

- Each single unit is compatible with continuous, ON/OFF and strobe lighting. (Spot Light HLV series cannot emit strobe.)
- Digital display enables set values to be easily checked.

Spot Light HLV3 series Product Page ▶ P. 187 Spot Light HLV2 series Product Page ▶ P. 193

- 256 stage dimmer settings.
- Select from 3 types of external control.
- AC input types and DC input types available.
- DIN rail installation is standard.
- Select from 3 channel, 4 channel or 8 channel models.
- There are four types of capacity: 3 channel/28 W, 3 channel/48 W, 4 channel/46 W, and 8 channel/95 W.

  \*1: Can be connected only with 24 V Light.

  \*2: Lineup includes only DC-input Control Units.
  - \*3: Can be connected with both 24 V Light and Spot Light HLV series.

## A Wide Ranging Lineup is Available and Custom Orders are Accepted

- The parallel type has the fastest switching for settings. Perform high-speed control through batch transmission. (External trigger signal input is available as an NPN input model (standard) or PNP input model (custom order product: PD3-PNP)) See ▶ P.325 for details
- Ethernet types support standard TCP/IP and UDP/IP protocols.

  (Models with keep-alive functions (custom order: PD3-EIK) are available) See ▶ P.326 for details

  Keep-alive functions monitor the validity of the connection of the machine to the network, wherein to prevent the connection from dropping, a signal is periodically sent between machines.
- The EIA-485 type can individually manage units using multi-drop wiring. Can manage up to 4 units.
- PWM frequency is available in 125 kHz (standard) and 500 kHz (custom order: PD3-500). See ▶ P.326 for details













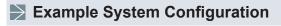
Light Control Films

SM/EL Cables

Fixtures, etc.

Brackets

PD2





External control device — External control cables — Control Unit — — Extension cables — LED Light

#### Parallel type

External control device

(Parallel communication) (Trigger signal)

EXCB2-M20-3 (Parallel communication) (Intensity control)

EXCB2-M10-3 (Trigger signal input) (ON/OFF control)



PD3-3024-3-PI (3 channel/28 W capacity) (Parallel communication)







(Red)

The Trigger Input Cable (EXCB2-M10-3) is needed for ON/OFF lighting and strobe lighting.

#### Ethernet type (TCP/IP UDP/IP)

External control device (Trigger signal)



(ON/OFF control)



(3 channel/28 W capacity)

(Ethernet communication)

Connected with LED Light

Commercially available LAN cable (Ethernet communication) PD3-3024-3-EI(A) (Intensity control)

External control device (Ethernet communication)





PD3-3024-3-EI(A) (3 channel/28 W capacity) (Ethernet communication)

Connected with LED Light

#### ● EIA-485 type

External control device (EIA-485 communication) (Trigger signal)











PD3-3024-3-SI(A) (3 channel/28 W capacity) (EIA-485 communication)

Connected with LED Light

## Fixture Connection Example



You can inquire using our website.

Light Unit

Free Product

Custom Orders

Product Details

Discontinued Products

Inquire on our website here https://www.ccs-grp.com/contact/

PSB3-30024 Band-Pass Filters Lens Filters Diffusion Plates

Fixtures, etc. Brackets SM/EL Cables

PD2 PSB

## PD3 Series



#### Refer to our website for product details.



For quick access.



You can also use your smartphone or cell phone.

## Common Specifications: Parallel Types

#### External trigger signal input is also available as a PNP input (custom order).

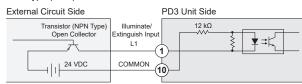
	1				I	
Model NPN Input Model	PD3-3024-3-PI	PD3-5024-4-PI(A)	PD3-10024-8-PI	PD3-3024-3-PT	PD3-5024-3-PT	PD3-5024-4-PT(A)
name PNP Input Model	PD3-3024-3-PI-PNP	PD3-5024-4-PI-PNP(A)	PD3-10024-8-PI-PNP	PD3-3024-3-PT-PNP	PD3-5024-3-PT-PNP	PD3-5024-4-PT-PNP(A)
Input voltage (rated)		100 to 240 VAC (+10% -15%)			24 VDC (21.6 to 26.4 V)	
Lighting method			Continuous / Strobe I	ighting (no overdrive)		
Drive method	Constant-voltage system		ant-voltage system ant-current system	Constant-vo	Itage system	24 V LIGHT: Constant-voltage system HLV LIGHT: Constant-current system
Intensity control method	PWM control and lighting time control	24 V LIGHT: PWM contro HLV LIGHT: Varia	ol and lighting time control ble-current control		control time control	24 V LIGHT: PWM control and lighting time control HLV LIGHT: Variable-current control
No. of channels	3 channels	4 channels	8 channels	3 cha	annels	4 channels
Applicable Light Unit (rated)	Light Units with 24 VDC input Total for 3 channels: 28 W	Light Units with 24 VDC input, HLV series (Spot Light) Total for 4 channels: 46 W	Light Units with 24 VDC input, HLV series (Spot Light) Total for 8 channels: 95 W (EL connector: one 95 W connector) *When using EL connector: L1 (CH1)	Light Units with 24 VDC input Total for 3 channels: 28 W	Light Units with 24 VDC input Total for 3 channels: 48 W	Light Units with 24 VDC input, HLV series (Spot Light) Total for 4 channels: 46 W
PWM frequency			125	kHz		
Error detection display	"OCP" displayed on front digital display. Overcurrent error "EFN" display. Fan stop error "EID" display: ID error (HLV series only)		"OCP" displayed on front digital display: Overcurrent error		"OCP" displayed on front digital display: Overcurrent error "EFN" display: Fan stop error "EID" display: ID error (HLV series only)	
Overcurrent protection	Operates at		Reset by pressing and holding create an intentional short circuit betw			en on again.
Power consumption (typ.)	78 VA	70 VA	130 VA	32 W	52	W
Frequency		50/60 Hz			_	
Output voltage (rated)			24 \	/DC	,	
Intensity setting			Manual: 256-step using	the front setting switch		
		External: 8-bit input	(B0 to B7), write pulse (BRTV	VR), and channel selection (C	:HSEL0 to CHSEL2)	
ON/OFF setting				igger input		
Lighting mode setting			Manual: 11-step using			
		· · · · · · · · · · · · · · · · · · ·	(M0 to M3), write pulse (TRG)	, , ,		
Error detection output		When no	ernal control connector 19(OC rmal: Non-conducting, With or	)-20(OE) pin with transistor of vercurrent output detected: C	utput onducting	
External control connector			Trigger input: MIL	connector, 10-pin		
External control connector			Intensity/Lighting mode set	tting: MIL connector, 20-pin		
Operating temperature and humidity		Tempe	erature: 0 to 40°C, Humidity: 2	0 to 85%RH (with no conden-	sation)	
Storage temperature and humidity		Tempe	rature: -20 to 60°C, Humidity:	20 to 85%RH (with no conder	nsation)	
Cooling method	Natural air cooling	Forced a	ir cooling	Natural air cooling Forced air cooling		
CE marking	Safety standard: Conforms to EN61010-1, EMC standard: Conforms to EN61326-1 Class A EMC standard: Conforms to EN61326-1 Class A				1 Class A	
Material/Surface processing		M	aterial: aluminum and resin, S	Surface processing: blue alum	ite	
Weight	600 g max.	600 g max. 1,200 g max. 1,500 g max.		400 g max.		850 g max.
Accessories		n ground terminal (2 m) x 1, lr D3-5024-4-PI(A)/-PI-PNP(A),		Instruction Guide x 1, B	ase Brackets x 1 set (PD3-50	24-4-PT(A)/-PT-PNP(A))

## Connection Example Refer to the instruction guide for more information.

#### External Trigger Signal Connection Example

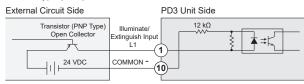
#### ■ NPN Input Model

Sink Type (NPN)



#### ■ PNP Input Model

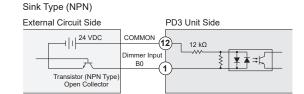
Source Type (PNP)

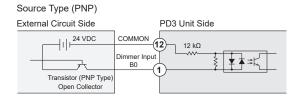


Connection Specifications (Per 1 Terminal)						
	Rated Input Voltage	Max. Input Voltage	Photocoupler ON Voltage/ON Current	Photocoupler OFF Voltage/OFF Current		
	24 VDC	26.4 VDC	14.4 VDC or more/1 mA or more	5 VDC or less/0.4 mA or less		

Trigger Principle Setting Switch	Input Signal	Photocoupler	ON/OFF Mode	Strobe Mode
HIGH	HIGH	OFF	LED ON	LED ON for Set Time
пібп	LOW	ON	LED OFF	No Change
LOW	HIGH	OFF	LED OFF	No Change
LOVV	LOW	ON	LED OFF	LED ON for Set Time

### External Signal Connection Example (Parallel Type)





Connection Specifications (Per 1 Terminal)						
Rated Input Voltage	Max. Input Voltage	Photocoupler ON Voltage/ON Current	Photocoupler OFF Voltage/OFF Current			
24 VDC 26.4 VDC		14.4 VDC or more/1 mA or more	5 VDC or less/0.4 mA or less			

	Input Signal	Photocoupler	Data
Cial Tona	HIGH	OFF	1
Sink Type	LOW	ON	0
Source Type	HIGH	ON	0
Source Type	LOW	OFF	1

Register to use them.

## Common Specifications: Ethernet Type

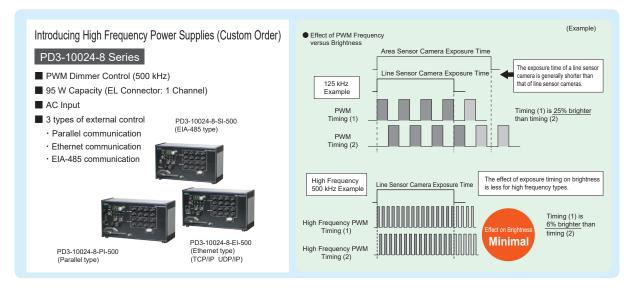
External trigger signal input PNP input model (custom order) and model with keep alive function (custom order) are also available.

	-	PD3-3024-3-EI(A)	PD3-5024-4-EI(A)	PD3-10024-8-EI(A)	PD3-3024-3-ET(A)	PD3-5024-3-ET(A)	PD3-5024-4-ET(A)		
Model name	PNP Input Model	PD3-3024-3-EI-PNP(A)	PD3-5024-4-EI-PNP(A)	PD3-10024-8-EIPNP(A)	PD3-3024-3-ET-PNP(A)	PD3-5024-3-ET-PNP(A)	-		
	With Keep-Alive Function	PD3-3024-3-EIK	PD3-5024-4-EIK	PD3-10024-8-EIK	PD3-3024-3-ETK	PD3-5024-3-ETK	PD3-5024-4-ETK		
Input vo	oltage (rated)	100 to 240 VAC (+10% -15%)				24 VDC (21.6 to 26.4 V)			
Lighting	g method	hod Continuous / Strobe lighting (no overdrive)							
Drive m	nethod	Constant-voltage system	24 V LIGHT: Const HLV LIGHT: Const	ant-voltage system ant-current system	Constant-vo	Itage system	24 V LIGHT: Constant-voltage system HLV LIGHT: Constant-current system		
Intensit	y control method	PWM control and lighting time control	24 V LIGHT: PWM contro HLV LIGHT: Varia	ol and lighting time control ble-current control	PWM and lighting	control time control	24 V LIGHT: PWM control and lighting time control HLV LIGHT: Variable-current control		
No. of o	channels	3 channels	4 channels	8 channels	3 cha	nnels	4 channels		
Applicat	ole Light Unit (rated)	Light Units with 24 VDC input Total for 3 channels: 28 W	Light Units with 24 VDC input, HLV series (Spot Light) Total for 4 channels: 46 W	Light Units with 24 VDC input, HLV series (Spot Light) Total for 8 channels: 95 W (EL connector: one 95 W connector) *When using EL connector: L1 (CH1)	Light Units with 24 VDC input Total for 3 channels: 28 W Total for 3 channels: 48 W		Light Units with 24 VDC input, HLV series (Spot Light) Total for 4 channels: 46 W		
PWM fr	requency			125	kHz				
Error detection display		"OCP" displayed on front digital display: Overcurrent error	"EFN" display:	ital display: Overcurrent error Fan stop error or (HLV series only)	"OCP" displayed on front digital display: Overcurrent error		"OCP" displayed on front digital display: Overcurrent error "EFN" display: Fan stop error "EID" display: ID error (HLV series only)		
Overcu	rrent protection	Operates at	107% of the output current. F	Reset by pressing and holding create an intentional short circuit between	the setting switch for 1 sec., over the positive (+) and negative (-)	or turning the power off and thoutputs.	en on again.		
Power	consumption (typ.)	78 VA	70 VA	130 VA	32 W 52 W		W		
Freque	ncy		50/60 Hz			_			
Output	voltage (rated)			24 \	/DC				
Intensit	y setting			Manual: 256-step using	the front setting switch				
	,		E)	kternal: Command input via To	CP/IP or UDP/IP communication	on			
ON/OF	F setting		External	trigger input or command inpu	t via TCP/IP or UDP/IP comm	unication			
Lighting	g mode setting			Manual: 11-step using					
	-		Ex	kternal: Command input via To		on			
Error de	etection output			Command sent when over	· · · · · · · · · · · · · · · · · · ·				
Externa	al control connector	Trigger input: MIL connector, 10-pin							
Operating	temperature and			Intensity/Lighting mode					
humidity			Тетре	erature: 0 to 40°C, Humidity: 2	0 to 85% RH (with no conden	sation)			
Storage to humidity	emperature and	Temperature: -20 to 60°C, Humidity: 20 to 85% RH (with no condensation)							
Cooling	g method	Natural air cooling	Forced a	ir cooling	Natural air cooling Forced air cool		Forced air cooling		
CE mai	rking	Safety standard: Conforms to	EN61010-1, EMC standard: Cor	nforms to EN61326-1 Class A	EMC sta	ndard: Conforms to EN61326-	1 Class A		
	/Surface processing	Material: Aluminum and resin, Surface processing: Blue alumite			urface processing: Blue alum	ite			
Material	rounace processing						l .		
Material Weight		600 g max. 1,200 g max. 1,500 g max. 400 g max. 850 g max.  3-prong AC cord with ground terminal (2 m) x 1, Instruction Guide x 1, Base Brackets x 1 set (PD3-5024-4-ET(A)/-ET-PNP(A)/-ETK)							

Keep-alive functions monitor the validity of the connection of the machine to the network, wherein to prevent the connection from dropping, a signal is periodically sent between machines.

## Lineup of Models with 500 kHz PWM Frequency < Custom Order Products>

When selecting a digital power supply, consider using the higher frequency type. Power supplies with a PWM frequency of 500 kHz can be made to order. Contact our local sales office for details.



Band-Pass Filters Lens Filters

Fixtures, etc.

PD2 PSB POD

# PD3 Series



#### Refer to our website for product details.

CCS PD3

For quick access

▶ Search

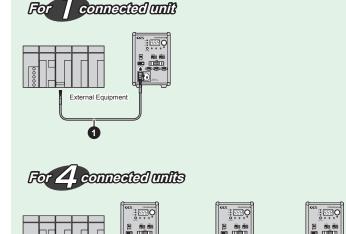
You can also use

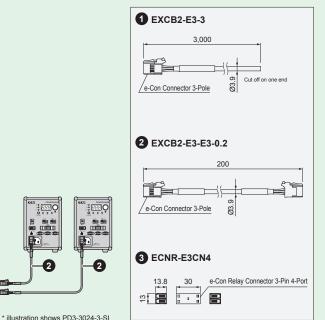
## Common Specifications: EIA-485 Type

Model name	PD3-3024-3-SI(A)	PD3-5024-4-SI(A)	PD3-10024-8-SI(A)			
Input voltage	100 to 240 VAC (+10% -15%)					
Lighting method		Regular Emission/Strobe Emission (Without Overdrive)				
Drive method	Constant-voltage system	24 V LIGHT: Constant-voltage system	HLV LIGHT: Constant-current system			
Intensity control method	PWM Control Or Light Emission Time Control	24 V LIGHT: PWM control or light emission time control HLV LIGHT: Variable-current control				
No. of channels	3 channels	4 channels	8 channels			
Applicable Light Units (rated)	24 VDC Input Lights, 3 Channel Total: 28 W	24 VDC Input Lights, HLV Series (Spot Lighting) 4 Channel Total: 46 W	24 VDC Input Lights, HLV Series (Spot Lighting) 8 Channel Total: 95 W (EL connector: 1 connector 95 W)			
PWM frequency		125 kHz				
Error detection display	Front Digital "OCP" Display: Overcurrent Error	Front Digital "OCP" Display: Overcurrent error "EFN" Display: Fan stop error "EID" Display: ID error	r (HLV series only)			
Overcurrent protection	Activated at output current of 107% min. and can be restored by holding the setting switch for 1 second, or by reinserting power assumes output +/- are not unintentionally short-circuited.					
Power consumption (typ.)	78 VA	78 VA 70 VA 130 VA				
Frequency		50/60 Hz				
Output voltage (rated)	24 VDC					
Dimmer setting	Manual: 256 stages via front setting switch					
Diffiller setting	External: Command input via EIA-485 communication					
ON/OFF setting	Exter	nal: Trigger input or command input via EIA-485 communic	cation			
Emission mode setting	Manual: 11 stages via front setting switch					
Emission mode setting	External: Command input via EIA-485 communication					
Error detection output		Command Sending for Overcurrent Detection				
External control connector	Trigger Input: MIL connector 10-pole					
External control confidence	Dimmer/Emission Mode Setting: e-Con Connector 3-Pole					
Operating environment	Temp	perature: 0 to 40°C, Humidity: 20 to 85% (with no condensations)	ation)			
Storage environment	Tempe	erature: -20 to 60°C, Humidity: 20 to 85% (with no condens	sation)			
Cooling method	Natural air-cooling	Forced	3			
CE marking	Safety standard	Conforms to EN61010-1 EMC standard: Conforms to EN	61326-1 Class A			
Electrical appliance and Material safety law	-	Specified electrical equipment (DC power supply) compliant with technical standards				
Material/Surface processing	M	Material: Aluminum, resin, Surface processing: Navy anodizing				
Weight	600 g max.	1,200 g max.	1,500 g max.			
Accessories		rong AC power cable with ground terminal, Instruction Mar m installation bracket x 1 set (PD3-5024-4-SI(A)/10024-8-				

#### **► EIA-485 Communication Cable Connection Method**

EIA-485 communication types identify based on ID switch settings, enables up to 4 units to be connected on one signal line. The options differ depending on the number of units to be connected. Refer to the following connection diagram.







External Equipmen

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**Options** 

Lens Filters

Diffusion Plates

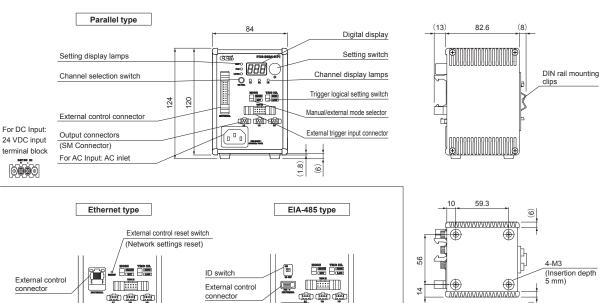
Polarizing Plates

Light Control Films

Fixtures, etc. Brackets SM/EL Cables

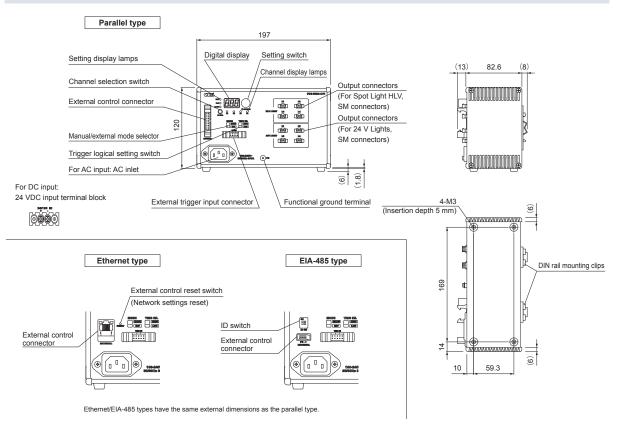
## Dimensions (mm)

PD3-3024-3-PI / PD3-3024-3-EI(A) / PD3-3024-3-SI(A) / PD3-3024-3-PT / PD3-3024-3-ET(A) / PD3-5024-3-PT / PD3-5024-3-ET(A)



## Dimensions (mm)

#### PD3-5024-4-PI(A) / PD3-5024-4-EI(A) / PD3-5024-4-SI(A) / PD3-5024-4-PT(A) / PD3-5024-4-ET(A)



Ethernet/EIA-485 types have the same external dimensions as the parallel type.

PD2

Brackets

SM/EL Cables

PSB4 PSB3-30024 Band-Pass Filters

## PD3 Series



#### Refer to our website for product details.



For quick access

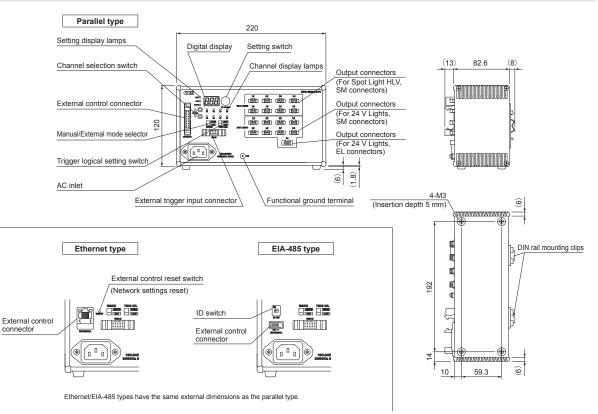




You can also use your smartphone or cell phone.

## Dimensions (mm)

PD3-10024-8-PI / PD3-10024-8-EI(A) / PD3-10024-8-SI(A)



#### Differences Between Specifications and Models [(A) attached to end of model number] Ex.: PD3-3024-3-EI → PD3-3024-3-EI(A)

	Contents Changed	Applicable Models	
Software Change	Command specifications for changing the setting values for dimmer control commands (F commands) as a batch have been added. Command specifications for changing the status of each channel for ON/OFF commands (L commands) as a batch have been added.	PD3-3024-3-EI(A) / PD3-3024-3-SI(A) / PD3-3024-3-ET(A) / PD3-5024-4-EI(A) / PD3-5024-4-SI(A) / PD3-5024-4-ET(A) / PD3-5024-3-ET(A) / PD3-10024-8-EI(A) / PD3-10024-8-SI(A)	
DIN Rail Mount Added	The number of DIN rail mounts for 50 W power supplies has increased from 1 to 2.	PD3-5024-4-PI(A) / PD3-5024-4-EI(A) / PD3-5024-4-SI(A) / PD3-5024-4-PT(A) / PD3-5024-4-ET(A)	

## Options

## Trigger Voltage Level Conversion Unit

- · Can be used when performing trigger input from a device with 3.3 V, 5 V or 12 V output (PCB, etc.).
- · It can also be used when performing trigger input using a contact signal such as a relay.

Be sure to prepare an AC adapter with 24 V output separately as a control unit source

#### Connection Example

When driving with non-voltage contact

One of 2 to Product side Trigger signal input side 5 pins Contact signal 6 pins

\* Elements used: Photocoupler, open collector or driver IC

tocoupler inside the rol unit for LED lights

When driving with high voltage signal One of 2 to Product side Trigger signal input side 5 pins Voltage signal → 6 pins

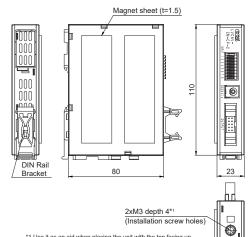
Elements used: Buffer, HS-CMOS or driver IC tocoupler inside the rol unit for LED lights

	Trigger signal output	Trigger signal input	Description
	ON	High	Input voltage range: +3 to 13.2 VDC, input current: Approximately 8 mA (at 12 VDC input, per terminal)
	ON	Open	Terminal voltage: Approx. 2.9 V
ı	OEE	Low/Short	Input voltage range: 0.0 to ±0.5 VDC input current: Approximately -3 mA (at 0.VDC input, per terminal)

High

When the trigger signal to this product is set to High or Open (non-conducting), the trigger signal output from this product turns ON. When it is set to Low or Short (conducting), the trigger signal output is turned OFF

#### Model Name: LVCNV-CM-CP-2-MG-WOC



\*1 Use it as an aid when placing the unit with the top facing up and fixing the unit to the wall surface or L-shaped bracket. Note that fixing with only the provided screw holes may cause the product to fall.

\* This product is custom-made. Contact our local sales office for details.

• innn

Brackets

SM/EL Cables

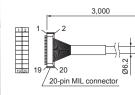
## **Options**

#### External control cables

#### Parallel communication cable

Used for performing external control via parallel communication. You can select the channel, intensity setting and lighting mode (continuous, ON/ OFF and strobe modes). The Trigger Input Cable shown (EXCB2-M10-3) below is needed for





Model name: EXCB2-M20-3

	PIN No.	Line color	Marking	PIN No.	Line color	Marking
	1	Orange	Black1	11	Orange	Black2
	2	Orange	Red1	12	Orange	Red2
	3	Gray	Black1	13	Gray	Black2
	4	Gray	Red1	14	Gray	Red2
	5	White	Black1	15	White	Black2
ıd	6	White	Red1	16	White	Red2
ıu	7	Yellow	Black1	17	Yellow	Black2
	8	Yellow	Red1	18	Yellow	Red2
	9	Pink	Black1	19	Pink	Black2
	10	Pink	Red1	20	Pink	Red2

Dimensions (mm)

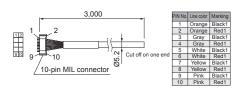
#### Trigger input cable

ON/OFF lighting and strobe lighting.

Cable through which external trigger signals are input by parallel bit method. Used when performing ON/OFF or strobe lighting using an external trigger signal.

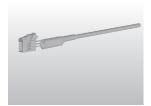


#### Model name: EXCB2-M10-3

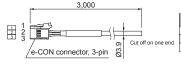


#### EIA-485 communication cable

Used for performing external control via EIA-485 communication. You can select the channel, intensity setting, ON/OFF setting and lighting mode (continuous, ON/OFF and strobe modes).



#### Model name: EXCB2-E3-3

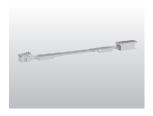


Line color	Embedded line color
Black	None
Black	White
Drain wire	None
	Black Black

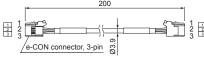
#### EIA-485 communication relay cable

Relay cable necessary if using with two or more PD3 series units connected for EIA-485 communication.

EIA-485 communication relay connector



#### Model name: EXCB2-E3-E3-0.2



485 Communications Cables" on the CCS website for information on multi-drop wiring connections. the product website page

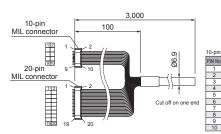


#### Parallel communication/Trigger input branch cable

Branch cable that combines parallel communication and trigger input cables into a single cable.



#### Model name: EXCB2-M10M20-3



				2	Orange	Red2
				3	Gray	Black2
				4	Gray	Red2
				5	White	Black2
				6	White	Red2
				7	Yellow	Black2
	MIL conn	ector		8	Yellow	Red2
-			.	9	Pink	Black2
٥.	Line color	Marking		10	Pink	Red2
	Orange	Black1		11	Orange	Black3
	Orange	Red1		12	Orange	Red3
	Gray	Black1		13	Gray	Black3
	Gray	Red1		14	Gray	Red3
Ī	White	Black1		15	White	Black3
	White	Red1		16	White	Red3
	Yellow	Black1		17	Yellow	Black3
1	Yellow	Red1		18	Yellow	Red3
	Pink	Black1		19	Pink	Black3
	Dink	Dod1		20	Dink	Dod2

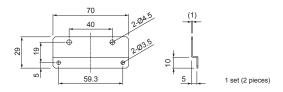
#### Base brackets

Bracket for securing PD3 series units to the floor, shelving and similar locations.

Base Brackets are included with PD3-5024-4 and PD3-10024-8 models



#### Model name: BK-PD3



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