CSM\_A3P\_DS\_E\_8\_3

## **Large Square-bodied Lighted Pushbutton Switches**

- Excellent operating sensitivity.
- Excellent illumination with even surface brightness.
- Three-color models (green, orange, red; chameleon lighting) included in lineup.



Refer to Safety Precautions for All Pushbutton Switches/ Indicators and Safety Precautions on page 22.

## **List of Models**

Model	Appearance
A3PJ (Rectangular)	6.7 52 max 25 32 32
A3PA (Square)	6.7 52 max.
A3PT (Round)	6.4 52 max 52 max 52 dia.

Note: The A3PJ is shown in the figure above as an example.

- Specifications: Refer to page 12. Panel cutout: Refer to page 19. Dimensions: Refer to page 16.
- Accessories, replacements, and tools: Refer to pages 10 to 11. Precautions for correct use: Refer to page 22.

OMRON

## **Model Number Structure**

Model Number Legend ..... The model numbers used to order sets of Units are illustrated below. One set comprises the Pushbutton, Lamp, and Switch. For more information, refer to Ordering Information (pages 3 to 5). Some forms may not be available for order depending on the combination of functions and specifications described below. Contact your OMRON sales representative for more detailed information.

(6) Upper Lower A 3 P J - 90 B 1 1 -..... Single screen (1) Shape of (2) Switch (3) Screen Pattern (4) Case Color (5) Lighting

## **Pushbutton**

Symbol	Shape
J	Rectan-
	gular
Α	Square
Т	Round

Momentary operation: Self-resetting Alternate operation: Self-holding

## **Specifications** Standard Load

Symbol	Operation		
Α	Momentary	SPDT	
В	Alternate	SEDI	
С	Momentary	DPDT	
D	Alternate	וטיט	

#### Microload

Symbol	Operation		
E	Momentary	SPDT	
F	Alternate	SEDI	
G	Momentary	DPDT	
Н	Alternate	וטייט	

- Standard Load 250 VAC, 3 A 30 VDC, 3 A
- Microload 125 VAC, 0.1 A 30 VDC, 0.1 A

Minimum applicable load 5 VDC, 1 mA

• 3PDT models are also available. Select from among the individual products shown on page 9.

Illumination-only models Sym Color Symbol Screen pattern 1 Black Single screen Light 1 2 gray Note: A3PT Chameleon \*1 models are available in light gray G only. Note: 1. The chameleon screen pattern is not available with A3PT models.

2. The chameleon screen pattern is only available with 12 or 24-VDC

\*1. With chameleon models, the whole screen lights red, green, or orange. When not lit, the display is white

models.

Note: The available rectangular and square models are shown below. Select from among the individual products shown on page 8. (The square models are only available with horizontal 2-split

Screenin	ioueis)	
Horizontal 2-split screen models	Vertical 2-split screen models	4-split screen models
Horizontal 3-split screen models	Vertical 3-split screen models	

The above diagrams show the Switches with the " OMRON " mark facing down.

- Colored-illumination models up to the 4-split screen models are available as individual Units. Refer to page 6.
- "Colored-illumination" models operate in the way shown below:

Unlit White

Lit Color

The built-in LED is colored.

# **Number of LED Lamps**

Screen pattern	A3PJ	A3PA	A3PT
Single screen	Models with	Models with built-in LED	
Horizontal 2-split screen		2 *2	
Vertical 2-split screen			
Horizontal 3-split screen	4 *2		
Vertical 3-split screen			
4-split screen			

<sup>\*2.</sup> These split screen models are available only as individual Units. They cannot be ordered as sets.

## Method

## **LED-lighted Models** (A3PJ and A3PA Models Only)

Symbol	Rated voltage
05E	5 VDC
12E	12 VAC/VDC
24E	24 VAC/VDC

## **LED Lamp**lighted Models (A3PT Only)

Symbol	Rated voltage
05C	5 VDC
12C	12 VDC
24C	24 VDC

 A3PJ and A3PA can also be ordered separately. Refer to page 8 for details.

## (6) Color of Pushbutton

For LE	ט
Symbol	С

Symbol	Color	
R	Red	
0	orange	
G	green	
W	white	
K	Chameleon	

- The chameleon screen pattern is not available with A3PT models.
- The chameleon screen pattern is only available with 12 or 24-VDC models.

Ordering as a Set ...... The model numbers used to order sets of Units are given in the following tables. One set comprises the Pushbutton, Lamp, and Switch.

(Not all combinations are possible. Ask your OMRON representative for details.)

Rectangular Models

(Single Screen)



(Single Screen)

A3PJ

(1)

## Standard Loads

		Contact type					
		Operation	Momentary operation (Self-resetting)		Alternate operation (Self-holding)		Pushbutton color
Output	Lighting	Case color	Black	Light gray	Black	Light gray	symbol
		5 VDC	A3PJ-90A11-05E(1)	A3PJ-90A12-05E(1)	A3PJ-90B11-05E(1)	A3PJ-90B12-05E(1)	R
	LED	12 VAC/VDC	A3PJ-90A11-12E(1)	A3PJ-90A12-12E(1)	A3PJ-90B11-12E(1)	A3PJ-90B12-12E(1)	O G
SPDT		24 VAC/VDC	A3PJ-90A11-24E(1)	A3PJ-90A12-24E(1)	A3PJ-90B11-24E(1)	A3PJ-90B12-24E(1)	W
	Chameleon	12 VDC	A3PJ-90AG1-12EK		A3PJ-90BG1-12EK	A3PJ-90BG2-12EK	*
		24 VDC	A3PJ-90AG1-24EK	A3PJ-90AG2-24EK	A3PJ-90BG1-24EK	A3PJ-90BG2-24EK	
	LED	5 VDC	A3PJ-90C11-05E(1)	A3PJ-90C12-05E(1)	A3PJ-90D11-05E(1)	A3PJ-90D12-05E(1)	R
		12 VAC/VDC	A3PJ-90C11-12E(1)	A3PJ-90C12-12E(1)	A3PJ-90D11-12E(1)	A3PJ-90D12-12E(1)	O G
DPDT		24 VAC/VDC	A3PJ-90C11-24E(1)	A3PJ-90C12-24E(1)	A3PJ-90D11-24E(1)	A3PJ-90D12-24E(1)	W
	Chameleon	12 VDC	A3PJ-90CG1-12EK	A3PJ-90CG2-12EK	A3PJ-90DG1-12EK		*
		24 VDC	A3PJ-90CG1-24EK	A3PJ-90CG2-24EK	A3PJ-90DG1-24EK	A3PJ-90DG2-24EK	

Note: Enter the desired color symbol for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White.

Example: Red A3PJ-90A11-24ER

#### **Microloads**

Contact type			Microload (125 VAC,			
Operation			Momentary operat	Momentary operation (Self-resetting)		
Output	Lighting	Case color	Black	Light gray	color symbol	
		5 VDC	A3PJ-90E11-05E(1)	A3PJ-90E12-05E(1)	R	
	LED	12 VAC/VDC	A3PJ-90E11-12E(1)	A3PJ-90E12-12E(1)	O G	
SPDT		24 VAC/VDC	A3PJ-90E11-24E(1)	A3PJ-90E12-24E(1)	w	
	Chameleon	12 VDC	A3PJ-90EG1-12EK		*	
	Chameleon	24 VDC	A3PJ-90EG1-24EK	A3PJ-90EG2-24EK		
		5 VDC	A3PJ-90G11-05E(1)		R	
	LED Chameleon	12 VAC/VDC	A3PJ-90G11-12E(1)	A3PJ-90G12-12E(1)	O G	
DPDT		24 VAC/VDC	A3PJ-90G11-24E(1)	A3PJ-90G12-24E(1)	W	
		12 VDC	A3PJ-90GG1-12EK		*	
	Citatileteon	24 VDC	A3PJ-90GG1-24EK			

Note: Enter the desired color symbol for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White.

Example: Red A3PJ-90E11-24ER

Individual models: Refer to pages 7 to 11.

(The Pushbutton, Lamp, and Switch can be ordered separately.)

■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 16.

<sup>\*</sup> You can change the screen colors of chameleon models between red, green, and orange, by changing the terminal wiring. Refer to page 18 for details.

<sup>\*</sup> You can change the screen colors of chameleon models between red, green, and orange, by changing the terminal wiring. Refer to page 18 for details.

Ordering as a Set ...... The model numbers used to order sets of Units are given in the following tables. One set comprises the Pushbutton, Lamp, and Switch.

(Not all combinations are possible. Ask your OMRON representative for details.)

Square Models (Single Screen)



(Single Screen)

## Standard Loads

		Contact type		Standard load (250 VAC, 3 A; 30 VDC, 4 A)				
		Operation	Momentary operat	ion (Self-resetting)	Alternate operat	Pushbutton		
Output	Lighting	Case color	Black	Light gray	Black	Light gray	color symbol	
		5 VDC	A3PA-90A11-05E(1)	A3PA-90A12-05E(1)	A3PA-90B11-05E(1)	A3PA-90B12-05E(1)	R	
	LED	12 VAC/VDC	A3PA-90A11-12E(1)	A3PA-90A12-12E(1)	A3PA-90B11-12E(1)	A3PA-90B12-12E(1)	0 G	
SPDT		24 VAC/VDC	A3PA-90A11-24E(1)	A3PA-90A12-24E(1)	A3PA-90B11-24E(1)	A3PA-90B12-24E(1)	W	
	Chameleon	12 VDC	A3PA-90AG1-12EK	A3PA-90AG2-12EK	A3PA-90BG1-12EK	A3PA-90BG2-12EK	*	
		24 VDC	A3PA-90AG1-24EK	A3PA-90AG2-24EK	A3PA-90BG1-24EK	A3PA-90BG2-24EK		
		5 VDC	A3PA-90C11-05E(1)	A3PA-90C12-05E(1)	A3PA-90D11-05E(1)	A3PA-90D12-05E(1)	R	
	LED	12 VAC/VDC	A3PA-90C11-12E(1)	A3PA-90C12-12E(1)	A3PA-90D11-12E(1)	A3PA-90D12-12E(1)	0 G	
DPDT		24 VAC/VDC	A3PA-90C11-24E(1)	A3PA-90C12-24E(1)	A3PA-90D11-24E(1)	A3PA-90D12-24E(1)	W	
	Chamalaan	12 VDC	A3PA-90CG1-12EK	A3PA-90CG2-12EK	A3PA-90DG1-12EK	A3PA-90DG2-12EK	*	
	Chameleon	24 VDC	A3PA-90CG1-24EK	A3PA-90CG2-24EK	A3PA-90DG1-24EK	A3PA-90DG2-24EK		

Note: Enter the desired color symbol for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White.

Example: Red A3PA-90A11-24ER

#### **Microloads**

Contact type			Microload (125 VAC,				
Operation			Momentary operat	Momentary operation (Self-resetting)			
Output	Lighting	Case color	Black	Light gray	color symbol		
		5 VDC	A3PA-90E11-05E(1)	A3PA-90E12-05E(1)	R		
	LED	12 VAC/VDC	A3PA-90E11-12E(1)	A3PA-90E12-12E(1)	O		
SPDT		24 VAC/VDC	A3PA-90E11-24E(1)	A3PA-90E12-24E(1)	W		
	Chameleon	12 VDC	A3PA-90EG1-12EK		*		
	Chameleon	24 VDC	A3PA-90EG1-24EK	A3PA-90EG2-24EK			
		5 VDC			R		
	LED	12 VAC/VDC	A3PA-90G11-12E(1)	A3PA-90G12-12E(1)	O		
DPDT		24 VAC/VDC	A3PA-90G11-24E(1)	A3PA-90G12-24E(1)	W		
	Chameleon	12 VDC	A3PA-90GG1-12EK		*		
	Chameleon	24 VDC	A3PA-90GG1-24EK				

Note: Enter the desired color symbol for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White.

Example: Red A3PA-90E11-24ER

Individual models: Refer to pages 7 to 11.

(The Pushbutton, Lamp, and Switch can be ordered separately.)

■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 16.

<sup>\*</sup> You can change the screen colors of chameleon models between red, green, and orange, by changing the terminal wiring. Refer to page 18 for details.

<sup>\*</sup> You can change the screen colors of chameleon models between red, green, and orange, by changing the terminal wiring. Refer to page 18 for details.

Ordering as a Set ...... The model numbers used to order sets of Units are given in the following tables. One set comprises the Pushbutton, Lamp, and Switch.







#### **Standard Loads**

Contact type			Standard load (250 V		
	Operation		Momentary operation (Self-resetting)	Alternate operation (Self-holding)	Pushbutton color symbol
Output	Output Lighting Case color		Light gray	Light gray	Color Symbol
SPDT L	ED lamp	24 VDC	A3PT-90A12-24C(1)	A3PT-90B12-24C(1)	ROGW
DPDT L	ED lamp	24 VDC	A3PT-90C12-24C(1)	A3PT-90D12-24C(1)	ROGW

Note: Enter the desired color symbols for the Pushbutton in (1) and (2). (R) = Red, (O) = Orange, (G) = Green, (W) = White.

Example: (Red) A3PT-90A12-24CR





(Single Screen)



## **Microloads**

		Contact type	Microload (125 VAC, 0.1 A; 30 VDC, 0.1 A)	
Operation			Momentary operation	Pushbutton color symbol
Output	Lighting	Case color	Light gray	
SPDT	LED lamp	24 VDC	A3PT-90E12-24C(1)	ROGW
DPDT	LED lamp	24 VDC	A3PT-90G12-24C(1)	G W

Note: Enter the desired color symbols for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White.

Example: (Red) A3PT-90E12-24CR

Individual models: Refer to pages 7 to 11.

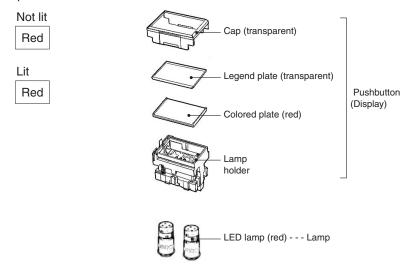
(The Pushbutton, Lamp, and Switch can be ordered separately.)

■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 16.

## Illumination-only and Colored-illumination LED Models

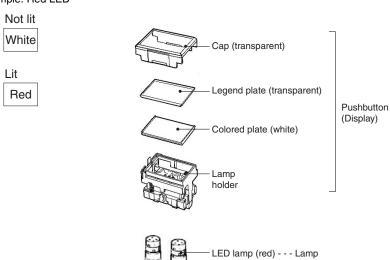
"Illumination only" describes LED models for which the screen color is the same whether the LED is lit or not. The screen simply becomes brighter when the LED lights.

Example: Red LED



"Colored illumination" describes LED models for which the screen color is white when the LED is not lit and changes to the color of the LED lamp when the LED is lit.

Example: Red LED



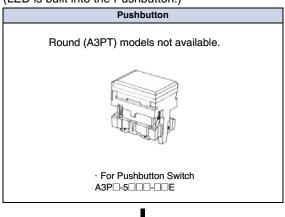
Ordering: With colored-illumination models, order the Pushbutton, Lamp, and Switch as shown in the following table.

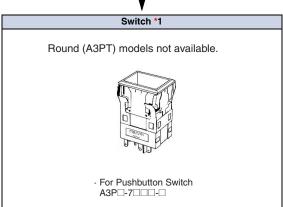
Pushbutton	Lamp	Switch
Select the LED lamp-lighted model required from the selection on page 8. Each assembly includes the number of white colored plates required to enable colored illumination for the corresponding screen-split configuration. For example, 4-split screen models include 4 white colored plates.	A3PJ (rectangular): 4 A3PA (square): 2	Select from the Switches on page 9.

Ordering Individually ...... Pushbuttons, Lamps, and Switches can be ordered separately. Combinations that are not available as sets can be created using individual Units. Also, store the parts as spares for maintenance and repairs.

## LED-lighted (Single screen models only)/ **Chameleon Models**

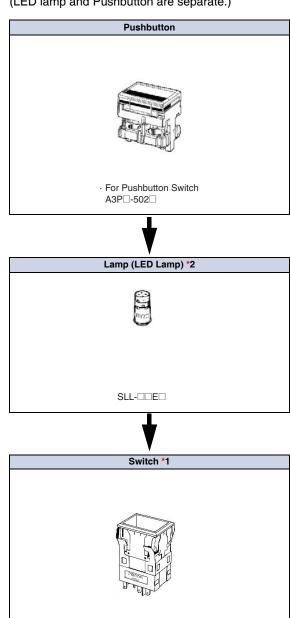
(LED is built into the Pushbutton.)





## **LED Lamp-lighted Models**

(LED lamp and Pushbutton are separate.)



- \*1. The Switch is compatible with LED-lighted models and LED lamp-lighted models.
- \*2. Number of necessary LED lamps.

Screen pattern	A3PJ	A3PA	A3PT
Single screen		2	2
Horizontal 2-split screen		2	
Vertical 2-split screen	4		
Vertical 3-split screen Horizontal 3-split screen			
4-split screen			

Ordering set combinations: Refer to page 3 to 5.

■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 16.

· For Pushbutton Switch

A3P□-7□□□-□

Ordering Individually	Pushbuttons, Lamps, and Switches can be ordered separately. Combinations that are not available as
	sets can be created using individual Units. Also, store the parts as spares for maintenance and repairs

Pushbutton

## LED-lighted Models (LED is built-in.)

Appearance	Split-screen color (color symbol)		White (W)	Red (R)	Green (G)	Orange (O)	Selection precautions
Rectangular models	Single screen		A3PJ-5701 -□□E	A3PJ-5702 -□□E	A3PJ-5703 -□□E	A3PJ-5706 -□□E	Enter the voltage to be used in the □□at the end of the model number.  Examples of voltages used: 5V=0 5 E
Square models	Single screen		A3PA-5701 -□□E	A3PA-5702 -□□E	A3PA-5703 -□□E	A3PA-5706 -□□E	12V=112 E 24V=2 ⊈ E • For the color of the shaded part, select the model ac- cording to the colors given at the top of the table.

Note: 1. A cap, legend plate (transparent), colored plate, white plunger case, and LED (with a current-limiting resistor) are built into the standard lighting unit.

## LED Lamp-lighted Models (LED is not built-in.)

	Rectangul	ar models	Square mo	odels	Round mo	dels	lels				
Appearance							Selection precautions				
Screen pattern	Screen	Model	Screen	Model	Screen	Model					
Single screen		A3PJ-5021		A3PA-5021	A3PT-5021		Parts included:     Colored plates (white, red, green, and orange), a legend plate (transparent), and a light baffle (split-screen models only) are in-				
Horizontal 2- split screen		A3PJ-5022		the LED coloring required.  The number of white colored p to enable colored illumination f			of white colored plates required			equired corre-	
Vertical 2-split screen		A3PJ-5023					ed. (For examplinclude 4 white)  The number of comodel are shown	colored olored p	plates) lates in	). cluded <sup>:</sup>	
Horizontal 3-split							Screen pattern	White	Red	Green	Orange
screen		A3PJ-5024					Single screen	1	1	1	1
Vertical 3-split screen		A3PJ-5025			_		Horizontal 2- split screens Vertical 2-split screens	2	1	1	1
4-split screen		A3PJ-5026					Horizontal 3- split screens Vertical 3-split screens *	3	2	2	2
							4-split screen	4	1	1	1

<sup>\*</sup> The following types of colored plates are included with Horizontal and Vertical 3-splitScreen Switches. White: One colored plate for a 2-split screen and two colored plates for a 4-split screen. Red, green, or orange: One colored plate for a 2-split screen and one colored plates for a 4-split screen.

Ordering set combinations: Refer to page 3 to 5.	
or asiming control management to be page of to ch	

Split-screen coloring configurations are given with the OMRON mark on the Switch facing down.
 The LED is built-in and cannot be replaced individually.

<sup>■</sup> Specifications: Refer to page 12. ■ Dimensions: Refer to page 16.

<sup>■</sup> Accessories: Refer to pages 10 to 11.

Pushbutton (For information on mounting of LED lamps, refer to page 23.)

## Chameleon Models (with Built-in LED)

Appearance	Rated voltage	Chameleon pushbutton switch
Rectangular	12 VDC	A3PJ-5800-12E
	24 VDC	A3PJ-5800-24E
Square	12 VDC	A3PA-5800-12E
	24 VDC	A3PA-5800-24E

Note: 1. With chameleon models the whole screen lights red, green, or orange (i.e., red and green simultaneously).

## **LED Lamp**

Voltage	5 VDC	12 VDC	24 VDC	Applicable cap (color)	Selection precautions
Color	Model (DC only)	Model (DC only)	Model (DC only)	(colored plate)	Selection precautions
Red	SLL-05ER	SLL-12ER	SLL-24ER	Red	
Yellow	SLL-05EY	SLL-12EY	SLL-24EY	Orange	In the standard setup, 4 LED lamps are used with A3PJ models and 2 LED lamps are
Green	SLL-05EG	SLL-12EG	SLL-24EG	Green	used with A3PA and A3PT models.
White	SLL-05EW	SLL-12EW	SLL-24EW	White	

Switch (LED models)

				Rectangular models	Square models	Round models	
Appearance						Selection precautions	
	0	Switch		NA1 - 1	NA1 - 1	841 - 1	
	Contact type	Number of outputs	Operation	Model	Model	Model	
		1c	Momentary operation	A3PJ-7010-1	A3PA-7010-1	A3PT-7010-2	
ad		10	Alternate operation	A3PJ-7020-1	A3PA-7020-1	A3PT-7020-2	The end digit denotes the color of the flange: -1
Standard load	Silver alloy contact	2c	Momentary operation	A3PJ-7030-1	A3PA-7030-1	A3PT-7030-2	denotes a black flange, and -2 denotes a light gray flange.
ndaı		3c	Alternate operation	A3PJ-7040-1	A3PA-7040-1	A3PT-7040-2	Round switches are available only in light gray, and not in
Sta			Momentary operation	A3PJ-7150-1			black. Use the Switch in combination
		30	Alternate operation	A3PJ-7160-1			with the same shape Lamp (rectangular, square or round).
		1c	Momentary operation	A3PJ-7050-1	A3PA-7050-1	A3PT-7050-2	Example: For rectangular Lamp A3PJ-5011, select
		10	Alternate operation	A3PJ-7060-1	A3PA-7060-1	A3PT-7060-2	Switch A3PJ-7 0-0. On the Switch itself, however, only 3
load	Gold alloy	2c	Momentary operation	A3PJ-7070-1	A3PA-7070-1	A3PT-7070-2	digits are shown, as follows: A3PJ-7□□.
Microload	contact		Alternate operation	A3PJ-7080-1	A3PA-7080-1	A3PT-7080-2	Momentary operation is self-re- setting, and alternate operation
2		3c	Momentary operation	A3PJ-7170-1			is self-holding (i.e., push-on, push-off).
		30	Alternate operation	A3PJ-7180-1			1 7.

Ordering set combinations: Refer to page 3 to 5.

■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 16.

A cap, legend plate (transparent), white colored plate, and LED (with a current-limiting resistor) are built into the Pushbutton.

# Accessories, Replacements, and Tools Accessories

Name	Appearance	Classifica	tion	Rectangular	Square	Application precautions	
		Wire-wrap terminal		A3PJ-4101	A3PA-4101	The Socket cannot be used with when mounting multiple Switch-	
Socket		PCB terminal	PCB terminal		A3PA-4102	es or with 3C models.  • You can use the same Sockets	
	Julian	Solder terminal		A3PJ-4103	A3PA-4103	for the A3P Ultra Bright Lighted Pushbutton Switches.	
		Short edge barrier (Horizontal mount-	Black	A3PJ-4001	A3PA-4001		
		ing) (1 pair)	Light gray	A3PJ-4002	A3PA-4002	• The purpose of the barrier is to	
		Long edge barrier	Black	A3PJ-4004		<ul> <li>prevent malfunctioning and to improve design image of the mounting panel.</li> </ul>	
Damian		(Vertical mounting) (1 pair)	Light gray	A3PJ-4005		<ul> <li>Intermediate barrier × 1.</li> <li>Edge barriers × 1 pair (2 Units).</li> </ul>	
Barrier		Short intermediate	Black	A3PJ-4007	A3PA-4007	<ul> <li>Mount short barriers horizontally.</li> <li>Mount long barriers vertically.</li> <li>For details on mounting, refer to</li> </ul>	
		barrier (Horizontal mounting)	Light gray	A3PJ-4008	A3PA-4008	page 23. • You can use the same Sockets for the A3P Ultra Bright Lighted	
		Long intermediate	Black	A3PJ-4010		Pushbutton Switches.	
		barrier (Vertical mounting)	Light gray	A3PJ-4011			
0 701	100000	For horizontal mounting (with OMRON logo facing down)		A3PJN-5050	A3PAN-5050	<ul> <li>Can be used by exchanging with the cap.</li> <li>Cannot be used with seal cover.</li> <li>Can be used with barrier.</li> <li>Use horizontal mounting guard for consecutive horizontal</li> </ul>	
Switch guard		For vertical mounting (with OM-RON logo facing to the right)		A3PJN-5055	A3PAN-5055	mounting, and use vertical mounting guard for consecutive vertical mounting.  • You can use the same Sockets for the A3P Ultra Bright Lighted Pushbutton Switches.	
Seal cover				A3PJ-5060	A3PA-5060	<ul> <li>Cannot be used with barrier and/or switch guard.</li> <li>For details on mounting, refer to page 23.</li> <li>Cap is manufactured from vinyl chloride.</li> <li>You can use the same Sockets for the A3P Ultra Bright Lighted Pushbutton Switches.</li> </ul>	
Long mounting plate				A3PJ-3002		Use when vertically mounting individual (with barrier) or multiple Switches (in standard mounting style and with barrier). Since a short mounting plate is attached to the Switch, replace it with the long one.      You can use the same Sockets for the A3P Ultra Bright Lighted Pushbutton Switches.	

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## **Accessories**

Name	Appearances	Classific	ation	A3PJ	A3PA	Application precautions	
			White	A3PJ-5301	A3PA-5301		
		Single screen	Red	A3PJ-5302	A3PA-5302		
			Green	A3PJ-5303	A3PA-5303		
			Yellow	A3PJ-5305	A3PA-5305		
			Orange	A3PJ-5306	A3PA-5306		
		lla dina antal O	White	A3PJ-5321	A3PA-5321	Keep mounted at all times.  If the colored plate is lost or dam-	
		Horizontal 2- split screen	Red	A3PJ-5322	A3PA-5322	aged, contact OMRON.	
			Green	A3PJ-5323	A3PA-5323	<ul> <li>Use in accordance with coloring of</li> </ul>	
Colored plate			Yellow	A3PJ-5325	A3PA-5325	the built-in LED. • For details on mounting, refer to	
for LED		1	Orange	A3PJ-5326	A3PA-5326	page 23.	
		Vertical 2-split	White	A3PJ-5331		You cannot use the same Colored	
		screen	Red	A3PJ-5332		Plates for Incandescent Lamps for the A3P Ultra Bright Lighted Push-	
			Yellow	A3PJ-5335		button Switches.	
			Orange	A3PJ-5336			
		4-split screen	White	A3PJ-5361			
			Red	A3PJ-5362			
			Green	A3PJ-5363			
		1	Orange	A3PJ-5366			
		Horizontal 2-split screen		A3PJ-4302	A3PA-4302	Keep mounted at all times.	
		Vertical 2-split so	creen	A3PJ-4303		If the light baffle is lost, contact OMRON.	
		Horizontal 3- split screen	Long axis	A3PJ-4304		<ul> <li>Used in LED lamp-lighted models.</li> <li>Cannot be used in LED-lighted</li> </ul>	
Light baffle			Short axis	A3PJ-4305		models.	
	V ~	Vertical 3-split screen	Long axis	A3PJ-4306		You cannot use the same Colored Plates for Incandescent Lamps for the A3P Ultra Bright Lighted Push-	
		4-split screen	Long axis	A3PJ-4304		button Switches.	
l amount plate	~	Transparent lege	end plate	A3PJ-5202	A3PA-5202	A transparent legend plate is mounted on the Pushbutton.     You cannot use the same Colored	
Legend plate		Milk-white legend plate		A3PJ-5201	A3PA-5201	Plates for Incandescent Lamps for the A3P Ultra Bright Lighted Push button Switches.	
		Transparent cap		A3PJ-5600	A3PA-5600	You can use the same Sockets for the A3P Ultra Bright Lighted Push- button Switches.	
Сар		Crimp-processed ent cap		A3PJ-5600-A	A3PA-5600-A	The surface is crimp-processed, so there is no reflection. You can use the same Sockets for the A3P Ultra Bright Lighted Pushbutton Switches.	

## Tools

Name	Appearance	Classification	Model	Application precautions
Extractor			A3PJ-5080	<ul> <li>Use to extract components when replacing the Pushbutton.</li> <li>You can use the same Sockets for the A3P Ultra Bright Lighted Pushbutton Switches.</li> </ul>

OMRON 1°

## **Specifications**

## **Approved Standard Ratings** UL (File No. E41515), CSA (File No. LR45258)

Standard Load: 5 A at 125 VAC

3 A at 250 VAC

0.1 A at 125 VAC Microload:

0.1 A at 30 VDC

Note: 1. Certification has been obtained for the Switch Unit.

For detailed information on individual products that have received

certification, consult your supplier.

2. Only Switch output 1c and 2c are certified.

#### CCC (GB/T14048.5)

Standard Load: 3 A at 250 VAC

4 A at 30 VDC

0.1 A at 125 VAC Microload:

0.1 A at 30 VDC

Note: Only Switch output 1c and 2c are certified.

## Ratings

## **Contact Ratings**

## Silver Alloy Contacts (for Standard Loads)

Rated	Non-inductive load (A)				Inductive load (A)			
voltage	Resistive load		Lamp load		Inductive load		Motor load	
(V)	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC 250 VAC	5 3		0.7 0.5		3 2		1.3 0.8	
8 VDC 14 VDC 30 VDC 125 VDC 250 VDC	5 5 4 0.4 0.2		2 2 2 0.05		4 4 3 0.4 0.2		3 3 0.09 0.09	

Note: 1. The above values are for steady-state currents.

- 2. Inductive load: Power factor = 0.4; time constant = 7 ms.
- The lamp load has an inrush current of 10 times the steady-state current.
   The motor load has an inrush current of 6 times the steady-state current. Standard testing condition
- (1) Ambient temperature:  $20 \pm 2^{\circ}C$
- (2) Ambient humidity:  $65 \pm 5\% RH$
- (3) Operating frequency: 20 times/min.

#### **Gold Alloy Contacts (for Microloads)**

Rated voltage (V)	0.1 A at 30 VDC (resistive load); 0.1 A at 125 VAC (resistive load)
Minimum applicable load	1 mA at 5 VDC

## **LED Ratings LED for LED-lighted Models** Single screen

	Model	Α	3PJ/M2F	PJ A3PA/M2PA			
		Current			Current		
Applied voltage	Rated voltage	Red, white	Orange	Green	Red, white	Orange	Green
5 VDC±5%	5 VDC	Approx. 40 mA	Approx. 20 mA	Approx. 18 mA	Approx. 20 mA	Approx. 10 mA	Approx. 9 mA
12 VAC/VDC ±5%	12 VAC/ VDC	Approx. 20 mA	Approx. 10 mA	Approx. 8 mA	Approx. 10 mA	Approx. 5 mA	Approx. 4 mA
24 VAC/VDC ±5%	24 VAC/ VDC	Approx. 10 mA	Approx. 5 mA	Approx. 4 mA	Approx. 10 mA	Approx. 5 mA	Approx. 4 mA

#### **LED for Chameleon Models**

Applied voltage	Rated voltage	Current		
Applied Voltage	Trateu voitage	Green	Red	
12 VDC±5%	12 VDC	Approx.26 mA	Approx.20 mA	
24 VDC±5%	24 VDC	Approx.13 mA	Approx.10 mA	

## **LED Lamp (for LED Lamp-lighted Models)**

Туре	Applied voltage	Rated voltage	Current	Model
	5 VDC±5%	5 VDC	Approx. 30 mA	SLL-05E□
DC only	12 VDC±5%	12 VDC	Approx. 15 mA	SLL-12E□
	24 VDC±5%	24 VDC	Approx. 12.5 mA	SLL-24E□

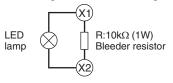
Mis-lighting of the LED

The LED lights with approx. 0.1 mA or less of micro-current. Take a countermeasure like adding a resistor to prevent mis-lighting in parallel to the LED.

The micro-current varies with the machine (leak current or stray capacity between cables, etc.). Select resistance value and allowable power consumption that meet the actual current.

#### (Circuit example)

In case of using 24 VAC/VDC, Direct lighting



## **Characteristics**

Operating frequency	Mechanical	120 operations/minute max. *1	
Operating frequency	Electrical	30 operations/minute max.	
Insulation resistance		100 MΩ min. (at 500 VDC)	
Contact resistance	Standard load	40 mΩ max. (initial value)	
Contact resistance	Microload	40 m $Ω$ max. (initial value)	
	Between terminals of same polarity	1,000 VAC, 50/60 Hz for 1 minute *2	
	Between terminals of different polarity	2,000 VAC, 50/60 Hz for 1 minute	
Dielectric strength	Between current-carrying metal part and ground	2,000 VAC, 50/60 Hz for 1 minute	
	Between each terminal and non-current-carrying metal part	2,000 VAC, 50/60 Hz for 1 minute	
	Between lamp terminals	1,000 VAC, 50/60 Hz for 1 minute *3	
Vibration resistance	Malfunction	10 to 55 Hz, 1.5 mm double amplitude (1 ms max.)	
Shock resistance	Destruction	500 m/s <sup>2</sup> max.	
Onock resistance	Malfunction	200 m/s <sup>2</sup> max. (1 ms max.)	
Life expectancy	Mechanical	Momentary operation models: 1,000,000 operations min. Alternate operation models: 200,000 operations min. (One operation consists of set and reset operations.)	
	Electrical	100,000 operations min.	
Weight		Approx. 30 g	
Inrush current	NC	Silver contact: 10 A max.	
iniusii current	NO	Silver contact: 10 A max.	
Ambient operating temperature		LED-lighted models: –10°C to 40°C (with no icing or condensation)	
Ambient operating humidity		35% to 85%RH	
Ambient storage temperature		-25°C to 65°C	
Degree of protection		IP40	
Electric shock protection class		Class II	
PTI (proof tracking index)		175	
Pollution degree		3 (IEC947-5-1)	

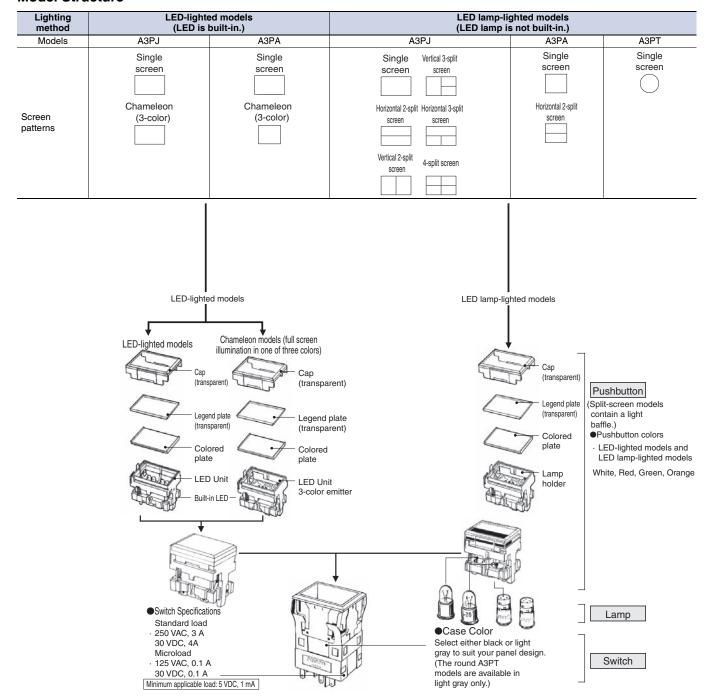
<sup>\*1.</sup> With alternate operation models, 60 operations/minute max. One operation cycle consists of set and reset operations. \*2. 600 VAC for microloads. \*3. With no LED lamp mounted.

## **Operating Characteristics**

	Model	A3PJ series		A3PA series		A3PT series	
Operating Characteristics		Momentary operation models	Alternate operation models	Momentary operation models	Alternate operation models	Momentary operation models	Alternate operation models
Operating force	OF max.	5.88 N	6.86 N	5.88 N	6.86 N	3.92 N	4.90 N
Releasing force	RF min.	0.39 N	0.29 N	0.39 N	0.29 N	0.39 N	0.29 N
Total travel	TT	Approx. 3.5 mm					
Pretravel	PT max.	3 mm					
Lock travel alternate	LTA min.		0.5 mm		0.5 mm		0.5 mm

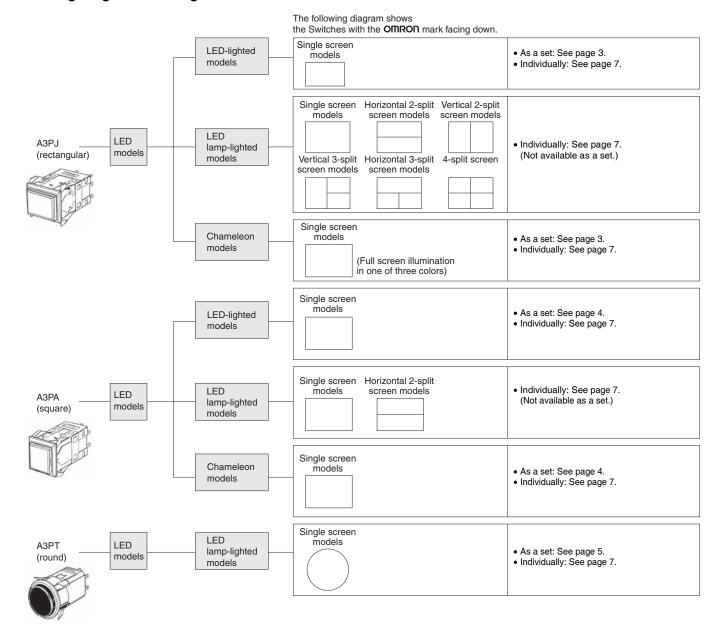
## **Nomenclature**

## **Model Structure**



## **Nomenclature**

## **A3P Lighting Method Diagram**



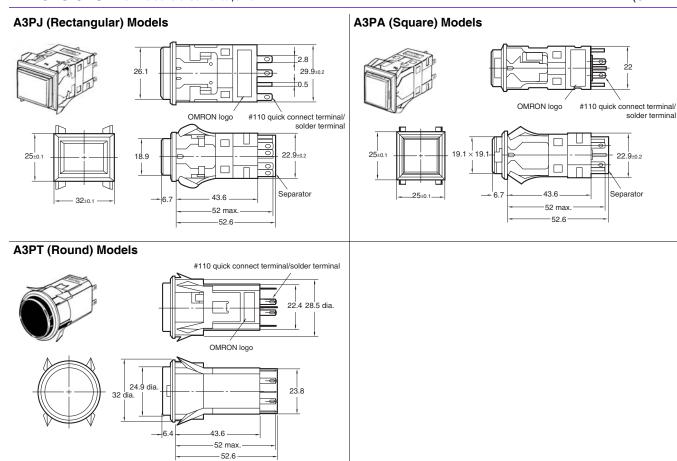
OMRON 1

**Dimensions** The Dimension shows switch output 2c.

(Unit: mm)

22.9±0.2

Separator



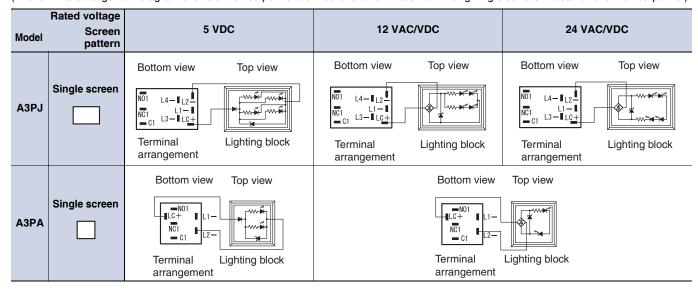
Note: The thickness of tab terminals #110 and solder terminals is 0.5 mm.

**Dimensions** (Unit: mm)

## **Terminal connections**

## **LED-lighted Models**

(The terminal arrangement diagram shows switch output 1c. Connections to terminals from the lighting block are the same for switch output 2c.)



**Dimensions** (Unit: mm)

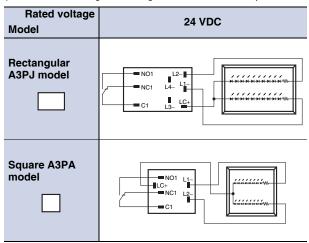
## **LED Lamp-lighted Models**

(All are shown with the OMRON logo facing down.)

Model Output	Rectangular A3PJ models	Square A3PA models	Round A3PT models
SPDT	Bottom view Top view  Terminal Lighting block arrangement	Bottom view Top view  Terminal Lighting block arrangement	Bottom view Top view  Terminal Lighting block arrangement
PPDT	Bottom view Top view  Terminal Lighting block arrangement	Bottom view Top view  Terminal Lighting block arrangement	Bottom view Top view  Terminal Lighting block arrangement
3PDT	Bottom view Top view  Terminal Lighting block arrangement		

#### **LED Chameleon Models**

(The terminal arrangement diagram shows switch output 1c. Connections to terminals from the lighting block are the same for switch output 2c.)



## **Terminal Arrangement and Coloring**

## **Chameleon Models**

	LC+	LC+	LC+
Wiring	L1-	L2-	L1– and L2– shorted
Coloring	Green	Red	Orange

**Dimensions** (Unit: mm)

## Panel Cutout (If using a Switch Guard or Seal Cover, refer to the panel cutout diagrams on page 21.) A3PJ (Rectangular) Models

Classification		Mounting design	Panel cutout	Remarks	
Flange mount models	Individual mounting (Horizontal)	25±0.1	30.5±0.3	Panel cutout spacing between rows of Units:	
	Multiple mounting (Horizontal)	25±0.1 1 2 n	32n-1.5±0.3 23.5±0.3		
	Individual mounting (Vertical)	Mount to long mounting plate (A3PJ-3002) before use.	23.5±0.3 30.5±0.3 1		
	Multiple mounting (Vertical)	Mount to long mounting plate (A3PJ-3002) before use.	25n-1.5±0.3 30.5±0.3		
Barrier mount models	Individual mounting (Horizontal)	27	36.4±0.3 23.5±0.3		
	Multiple mounting (Horizontal)	27 1 2 n	32.9n+3.5±0.3 23.5±0.3	For barrier mount models, refer to Accessories on page 10.  Panel cutout spacing between rows of Units: (Dotted line indicates the position of each mounting	
	Individual mounting (Horizontal)	Mount to long mounting plate (A3PJ-3002) before use.	30.5503	barrier.)  1.3 6 min.	
	Multiple mounting (Vertical)	Mount to long mounting plate (A3PJ-3002) before use.	25.9n+3.5±0.3 30.5±0.3		

Note: 1. n: Number of Units

- Recommended panel thickness: 1 to 5 mm
   Mount the panel before mounting the Switch Guard.
   If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

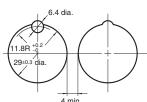
## A3PA (Square) Models

Clas	ssification	Mounting design	Panel cutout	Remarks
Flange mount models	Individual mounting	25±0.1	23.5±0.3	Panel cutout spacing between rows of Units:
	Multiple mounting	25±0.1 1 2 n	23.5±0.3 25n-2.5±0.3	
Barrier mount models	Individual mounting	2732	23.5±0.3	Panel cutout spacing between rows of Units: (Dotted line indicates the position of each mounting barrier.)  1.3 — — — 6 min.
	Multiple mounting	27 1 2 n	23.5±0.3 ——26n+2.5±0.3 ——	6 min.

Note: 1. n: Number of Units

- 2. Recommended panel thickness: 1 to 5 mm  $\,$
- Mount the panel before mounting the Switch Guard.
   If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

## A3PT (Round) Models

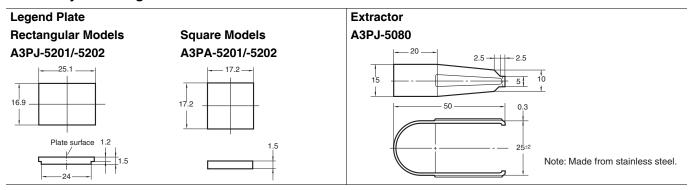


Note: 1. Recommended panel thickness: 1 to 5 mm

If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

**Dimensions** (Unit: mm)

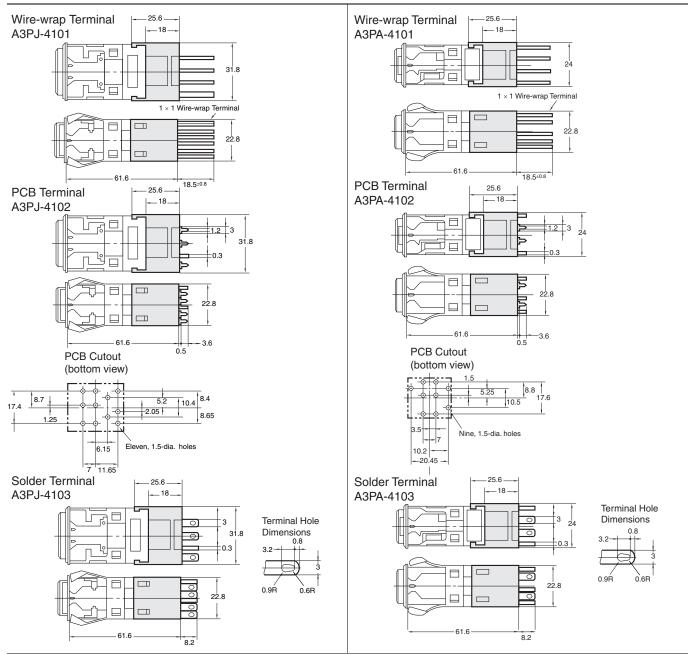
## **Accessory Mounting Dimensions**



#### **Socket-mounting Dimensions**

## Rectangular Models A3PJ (M2PJ)

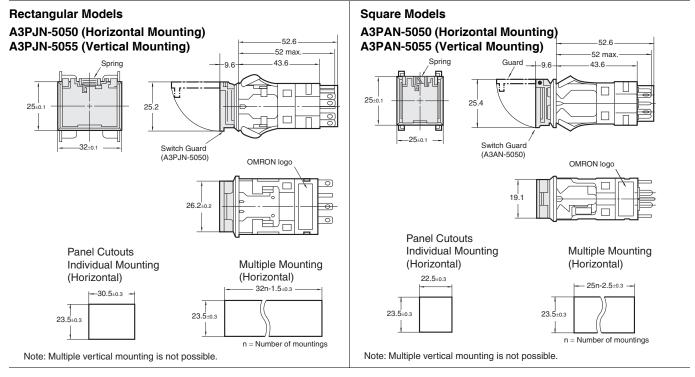
## Square Models A3PA (M2PA)



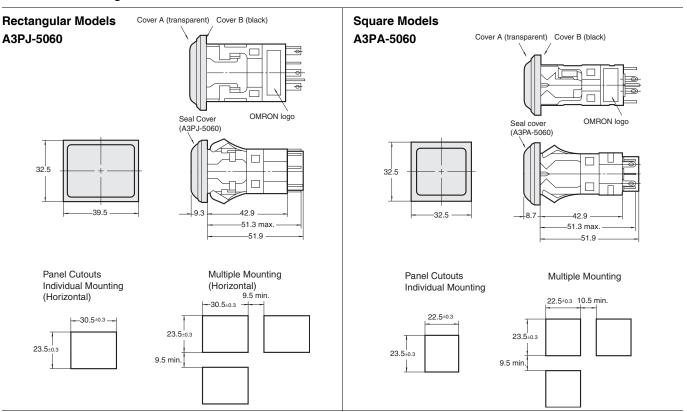
 ${\bf Note:\ PCB\ cutout\ dimensions\ show\ the\ switch\ mounted\ to\ the\ socket\ with\ the\ OMRON\ logo\ facing\ down.}$ 

**Dimensions** (Unit: mm)

## **Switch and Guard Mounting Dimensions**



#### **Seal Cover Mounting Dimensions**



Note: 1. Recommended panel thickness: 1 to 5 mm

2. Unless otherwise specified, a tolerance of  $\pm$  0.4 mm applies to all dimensions.

## **Safety Precautions**

## Refer to Safety Precautions for all Pushbutton Switches/Indicators.

## 

Do not apply a voltage higher than the maximum rated operating voltage between the lamp terminals, as there is a risk that LED will be damaged, and the Pushbutton will be ejected.



#### **Precautions for Correct Use**

- Always make sure that the power is turned OFF before mounting, removing, or wiring the Switch, or performing maintenance.
   Electric shock or fire may occur.
- 2. After wiring the Switch, make sure that there is a suitable isolation distance.

#### Wiring

Solder quickly and correctly at 350°C max and for 3 s or less.
 Wait for one minute after soldering before exerting any external force on the solder.

#### **Operating Environment**

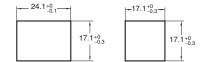
 Do not use in locations that are subject to dust, oil, or metal filings as these may penetrate the interior of the Switch and cause malfunction.

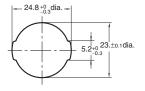
#### LED (for VDC)

- Check the terminal polarity when wiring.
- The rated voltage is shown on the plate on the back of the lighting unit, so be sure to use within the voltage shown.
- An LED current-limiting resistor is built in, so there is no need to mount an external resistor.

## Character Plate (Character Film)

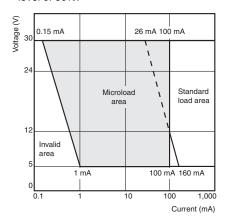
• If preparing the character plate separately, use a heat-resistant film with a thickness of 0.1 to 0.3 mm.





#### **Using Microloads**

• Using a standard load switch when a microload circuit is opened or closed may cause contact failure on the contacts. Use the switch within the operating range. (Refer to the diagram below.) Even when using microload models within the operating range shown below, if inrush current occurs when the contact is opened or closed, it may cause the contact surface to become rough, and so decrease life expectancy. Therefore, insert a contact protection circuit where necessary. The minimum applicable load is the N-level reference value. This value indicates the malfunction reference level for the reliability level of 60% ( $\lambda$  60) (conforming to JIS C5003). The equation,  $\lambda$  60 = 0.5 x 10<sup>-6</sup>/time indicates that the estimated malfunction rate is less than 1/2,000,000 with a reliability level of 60%.



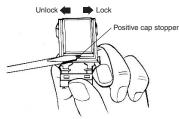
#### Others

 If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

## Assembly/Disassembly

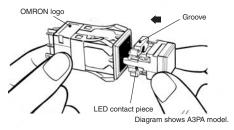
## A3PJ/M2PJ (Rectangular Models), A3PA/M2PA (Square Models)

Locking/Unlocking Positive Cap Lock Mechanism



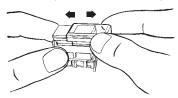
#### **Mounting Pushbutton**

- Be sure to mount the Pushbutton with the correct orientation. Align the groove on the Pushbutton, the projections in the Switch, and the LED contact piece before pushing the Pushbutton into the Switch.
- When dismounting the Pushbutton, use the Extractor (A3PJ-5080) for easy dismounting.



## Removing/Mounting Cap

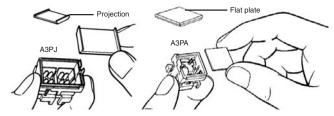
Insert the A3PA from the open side into the theft-prevention stopper.



## **Mounting Colored Plate**

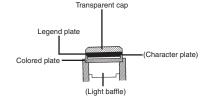
Place the colored plate on the plunger case with the dull side of the colored plate facing downward.

With A3PJ split-screen models, be sure that the projections on the upper surface of the colored plate face outward. For the A3PA, make sure that the flat plate is facing upwards.



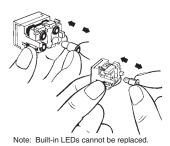
## Mounting Character Plate (Character Frame) and Legend Plate

Mount the legend plate for the A3PJ under the layered surfaces and mount the cap, as shown below.



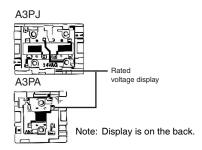
#### Mounting and Replacing LED Lamps

If using a square model with one LED lamp, insert the lamp in the center hole.



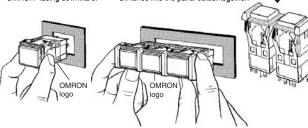
#### LED Rated Voltage Display (LED Models Only)

The LED rated voltage is shown between the built-in resistors on the back of the lighting unit. Use within a range of  $\pm$  5%.



## **Mounting Switch onto Panel**

 Individual Mounting and Barrier Mounting When mounting the Switch, push it into the panel cutout from the front of the mounting panel by holding it with the logo mark "OMRON" facing downward. Multiple Barrier Mounting (A3PJ)
When mounting a number of Switches in
line on the panel, link the Switches with
spacing barriers in between, attach
mounting barriers at both sides of this block of
Switches and, pushing in on the
mounting barriers at the side, insert the
Switches into the panel cutout together.



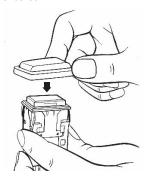
#### **Mounting Barriers**

Mount each part by pushing it in the direction of the arrow shown in the corresponding illustration below.



## **Mounting Seal Cover**

After mounting the seal cover onto the flange of the Switch, push the Switch into the panel cutout.

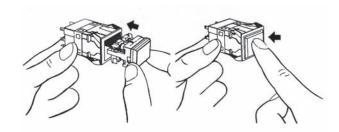


## Inscribing the Legend Plate

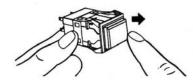
- Inscribe the legend plate to a depth of 0.5 mm max.
- The legend plate is made from polycarbonate resin. To coat the legend plate, use an alcohol-based coating such as melamine, phthalic acid, or acrylic.

#### **Maintenance Lock**

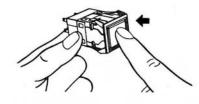
 First, when you insert the transparent lens while pressing the center, the maintenance lock mechanism will be activated, and the Switch will not operate. Lamp replacement and other maintenance can be performed without turning OFF the power supply to devices and equipment. Use an insertion force of 4 kg.



2. Next, when you remove your finger from the Switch, the lock will be released.



3. The Switch will start to operate when the lighting unit is pressed the second time.



## Terms and Conditions Agreement

#### Read and understand this catalog.

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NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

#### Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

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