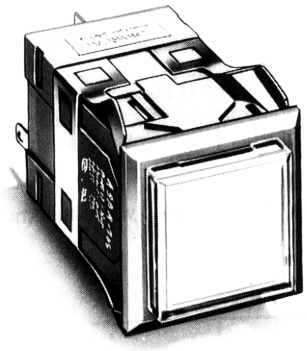
OMRON

Lighted Pushbutton Switch

A3PA

Compact Square Type with 19.1-mm Button

- Back-projected LED offers longer life, wider viewing, and greater viewing distance
- Replaceable LED T-1-3/4 standardized for ease of maintenance
- Two choices of contacts to match load requirements: silver and gold
- Snap-action offers high reliability
- Lamped type also available
- Button lockable
- LED protected by a current-limiting resistor

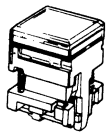


Ordering Information

Individually order indicators and switch units.

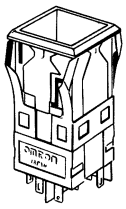
LED-lighted Type

Indicator *



Pushbutton switch
A3P□-5□□□-□□E
Indicator
M2P□-5□□□-□□E

Switch Unit**



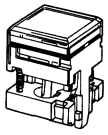
Pushbutton switch
A3P□-7□□□-□
Indicator
M2P□-7□□□-□

* The LED-lighted type has a built-in LED chip (which lights either in color or white).

**The switch unit can be used with both the LED and incandescent lamp.

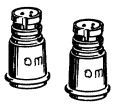
LED Ball-lighted Type

Indicator Unit



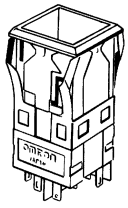
Pushbutton switch
A3PA-502□
Indicator

LED



DC-operated
SLL-□□E□
AC-/DC-operated
SLL-□□EAC□

Switch Unit*

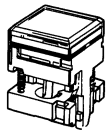


Pushbutton switch
A3PA-7□□□-□
Indicator
M2PA-7□□□-□

* The Switch unit can be used with either the LED-lighted type, LED ball-lighted type, or the incandescent lamp-lighted type.

Incandescent Lamp-lighted Type

Indicator Unit

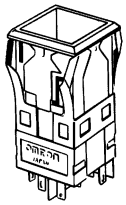


Pushbutton switch
A3PA-501□
Indicator
M2PA-501□

LED

Standard
SLL-□□
Power-saving
SLL-□□H

Switch Unit*



Pushbutton switch
A3PA-7□□□-□
Indicator
M2PA-7□□□-□

* The Switch unit can be used with either the LED-lighted type, LED ball-lighted type, or the incandescent lamp-lighted type.

LED Types

Switch Units

Function	Contact & output form		Momentary action	Alternate action
Switch indication unit (switching and indicating functions)	Silver alloy contact	SPDT	A3PA-7010-1	A3PA-7020-1
		DPDT	A3PA-7030-1	A3PA-7040-1
	Gold alloy contact	SPDT	A3PA-7050-1	A3PA-7060-1
		DPDT	A3PA-7070-1	A3PA-7080-1
Indicator unit (indicating function only)			M2PA-7010-1	

Note: The switch unit is supplied with a black flange and a spring mounting clip.

Screen pattern & color			For switch indicator unit	For indicator unit
Single screen type (solid color)		White	A3PA-5701-□□E	M2PA-5701-□□E
		Red	A3PA-5702-□□E	M2PA-5702-□□E
		Green	A3PA-5703-□□E	M2PA-5703-□□E
		Orange	A3PA-5706-□□E	M2PA-5706-□□E
2-split screen type (2 split colors)	White	White	A3PA-5711-□□E	M2PA-5711-□□E
		Red	A3PA-5712-□□E	M2PA-5712-□□E
		Green	A3PA-5713-□□E	M2PA-5713-□□E
		Orange	A3PA-5716-□□E	M2PA-5716-□□E
	Red	White	A3PA-5721-□□E	M2PA-5721-□□E
		Red	A3PA-5722-□□E	M2PA-5722-□□E
		Green	A3PA-5723-□□E	M2PA-5723-□□E
		Orange	A3PA-5726-□□E	M2PA-5726-□□E
	Green	White	A3PA-5731-□□E	M2PA-5731-□□E
		Red	A3PA-5732-□□E	M2PA-5732-□□E
		Green	A3PA-5733-□□E	M2PA-5733-□□E
		Orange	A3PA-5736-□□E	M2PA-5736-□□E

Note: When requiring a projected color type, refer to the LED ball type which is supplied with four color plates (white, red, green, and orange).

Lamp Type

Switch Units

Function	Construction Contact & output form		Momentary action	Alternate action
Switch indication unit (switching and indicating functions)	Silver alloy contact	SPDT	A3PA-7010-1	A3PA-7020-1
		DPDT	A3PA-7030-1	A3PA-7040-1
	Gold alloy contact	SPDT	A3PA-7050-1	A3PA-7060-1
		DPDT	A3PA-7070-1	A3PA-7080-1
Indicator unit (indicating function only)			M2PA-7010-1	

Note: The switch unit is supplied with a black flange and a spring mounting clip.

Display Screen Units

Screen pattern	For switch-indicator unit	For indicator unit
Single screen	A3PA-5011	M2PA-5011
2-split screen	A3PA-5012	M2PA-5012

Note: The display screen unit consists of a lens, a legend plate, a plunger, a lamp holder, 5 colored plates 8white, red, green, blue, and yellow) and light baffle (for other than the single screen type).

Lamps (Standard)

Operating voltage	Rated voltage	Rated current	Model
5 V	6 V	200 mA	SLL-06
12 V	14 V	80 mA	SLL-14
24 V	28 V	40 mA	SLL-28

Lamps (Microload)

Operating voltage	Rated voltage	Rated current	Model
5 V	6 V	100 mA	SLL-06H
12 V	14 V	40 mA	SLL-14H
24 V	28 V	25 mA	SLL-28H

Number of Necessary Incandescent Lamps

Model	Split	Lamp	No. of lamps
A3PA M2PA	Non-split	Standard	1
	2-split (long)		2

Note:
1. Commercially available 1 W lamps can also be used, provided the base socket conforms to T-13/4 sizing. For single screen and 2-split screen types, 2 lamps will be used.
2. Note that application of 80% of the rated voltage to the lamp is advantageous in terms of service life and heat generation.
3. When a dark current is to be conducted through the lamps to suppress inrush current, allow 20 to 30% of the rated current to flow.

LED-ball Type

Switch Units

Function	Construction Contact & output form		Momentary action	Alternate action
Switch indication unit (switching and indicating functions)	Silver alloy contact	SPDT	A3PA-7010-1	A3PA-7020-1
		DPDT	A3PA-7030-1	A3PA-7040-1
	Gold alloy contact	SPDT	A3PA-7050-1	A3PA-7060-1
		DPDT	A3PA-7070-1	A3PA-7080-1
Indicator unit (indicating function only)			M2PA-7010-1	

Note: The switch unit is supplied with a black flange and a spring mounting clip.

Display Screen Units (LED Ball is Not Built-in.)

Screen pattern	For switch-indicator unit	For indicator unit
Single screen	A3PA-5021	M2PA-5021
2-split screen	A3PA-5022	M2PA-5022

LED

Operating voltage	5 VDC			
Color	White	Red	Yellow	Green
Model	SLL-05EW	SLL-05ER	SLL-05EY	SLL-05EG
Applicable lens color	White	Red	Yellow	Green

LED (continued)

Operating voltage		12 VDC				24 VDC			
Color		White	Red	Yellow	Green	White	Red	Yellow	Green
Model	**DC only**	SLL-12EW	SLL-12ER	SLL-12EY	SLL-12EG	SLL-24EW	SLL-24ER	SLL-24EY	SLL-24EG
Applicable lens color		White	Red	Yellow	Green	White	Red	Yellow	Green

Note: The white LEDs are applicable to projected color.

LED Ball Ratings

Rated voltage	current (mA)	Operating voltage range
5 VDC	30 mA	5 VDC±5%
12 VDC	15 mA	12 VDC±5%
24 VDC	12.5 mA	24 VDC±5%

Number of Necessary LED Balls

Model	Split	Lamp	No. of lamps
A3PA M2PA	Non-split	LED ball	2
	2-split (long)		2

Specifications

Contact Ratings

Silver Alloy Contacts (for Power Loads)

Rated voltage (V)	Non-inductive load (A)				Inductive load (A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	5		0.7		3		1.3	
250 VAC	3		1.5		2		0.8	
8 VDC	5		2		4		3	
14 VDC	5		2		4		3	
30 VDC	4		2		3		3	
125 VDC	0.4		0.05		0.4		0.05	
250 VDC	0.2		0.03		0.2		0.03	

Note: 1. Inductive load: power factor φ = 0.4; time constant: 7 ms

2. Lamp load has an inrush current of 10 times the steady-state current.
Motor load has an inrush current of 6 times the steady-state current.

Gold Alloy Contacts (for Very Small Loads)

Switching capacity	0.1 A, 30 VDC/125 VAC (resistive load)

LED Chip Ratings

Rated voltage	current (mA)		Operating voltage range
	Single screen type	2-split screen type	
5 VDC	80	40 × 2	5 V±5%
12 VDC	40	20 × 2	12 V±5%
24 VDC	20	13 × 2	24 V±5%

Characteristics

Operating frequency	Mechanical: 120 operations/minute max. Electrical: 30 operations/minute max.
Operating force	Momentary action: 600 g max. Alternate action: 700 g max.
Insulation resistance	100 MΩ min. (at 500 VDC)
Dielectric strength	1,000 VAC, 50/60 Hz for 1 minute between terminals of same polarity 2,000 VAC, 50/60 Hz for 1 minute between terminals of different polarity, between current-carrying metal part and ground, and between each terminal and non-current-carrying metal part
Vibration	Malfunction durability: 10 to 55 Hz, 1.5 mm double amplitude
Shock	Mechanical durability: 200 m/s^2 (20 G)
Ambient temperature	Operating: −10°C to 40°C
Humidity	35 to 85% RH max.
Life expectancy	Mechanical: Momentary-action type: 1,000,000 operations min. Alternate-action type: 100,000 operations min. (see note below.)
Weight	Approx. 20 to 24.5 g

Note: With the alternate action type, one operation cycle consists of set and reset actions.

Approved by Standard

UL (File No. E41515)
CSA (File No. LR45258)

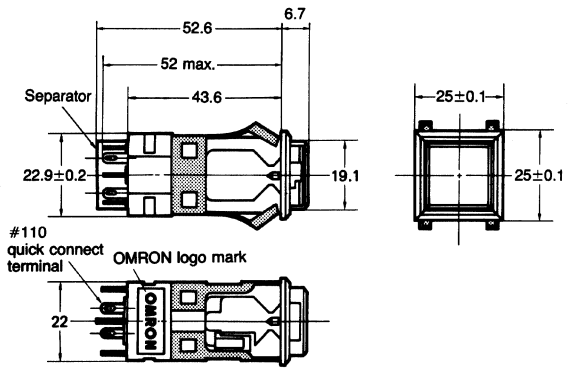
Silver contact type: 5 A, 125 VAC
3 A, 250 VAC

Gold alloy contact type: 0.1 A, 30 VDC
0.1 A, 125 VAC

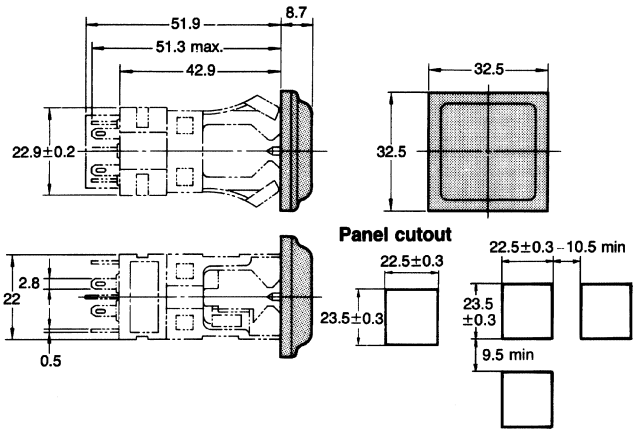
Dimensions

Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

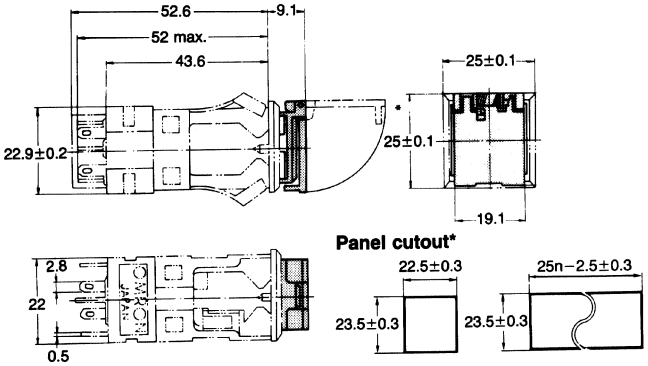
A3PA (M2PA)



A3PA (M2PA) with Seal Cover



A3PA with Switch Guard



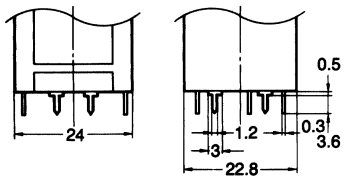
Note: When the seal cover is employed, neither barrier nor switch guard can be attached to the switch unit.

* The transparent cover of the switch guard will open180°

**When the flange mount type switches are arranged in the vertical mounting style, no switch guard can be used.
When a switch guard is used, neither barrier nor seal cover can be attached to the switch unit.

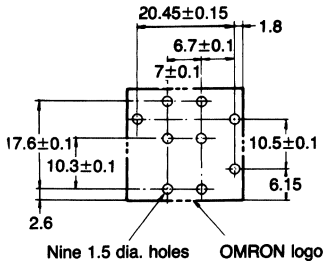
Socket (See Accessories.)

PCB Terminal Dimensions

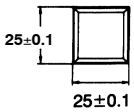
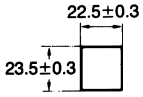
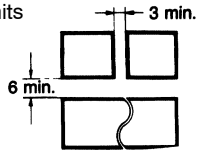
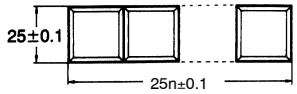
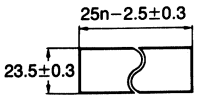
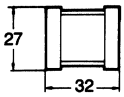
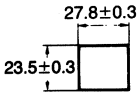
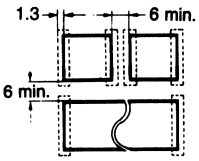
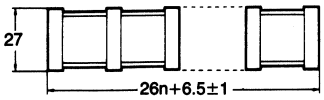
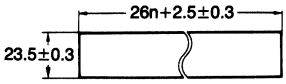


Mounting Holes

(Bottom View)



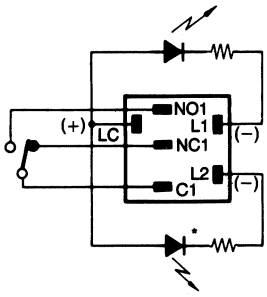
Panel Cutout

Classification		Mounting design	Panel cutout	Remarks
Flange mount type	Individual mounting			Panel cutout spacing between rows of units 
	Multiple mounting			
Barrier mount type	Horizontal, Individual mounting			Panel cutout spacing between rows of units 
	Horizontal, Multiple mounting			Dotted line indicates the position of each mounting barrier.

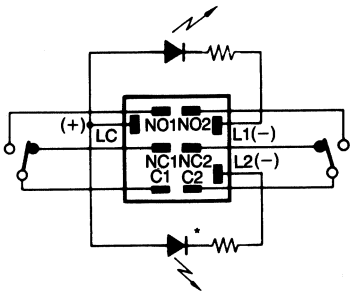
Note: 1. n: Number of units.
2. Recommended panel thickness: 1 to 5 mm

Terminals/Connections

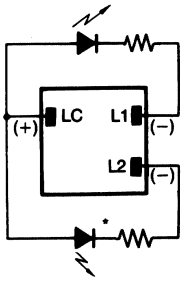
A3PA-7010-1, A3PA-7020-1, A3PA-7050-1, A3PA-7060-1



A3PA-7030-1, A3PA-7040-1, A3PA-7070-1, A3PA-7080-1



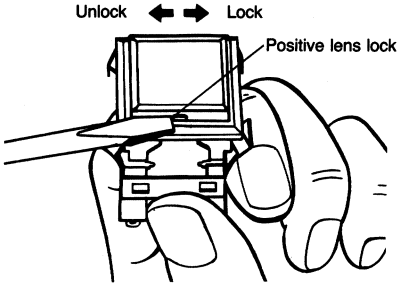
M2PA-7010-1



∗ With the single screen type, connect an LED across terminals LC and L2.

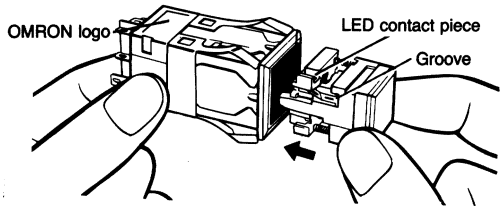
Assembly/Disassembly

1. Locking/Unlocking Positive Lens Lock Mechanism



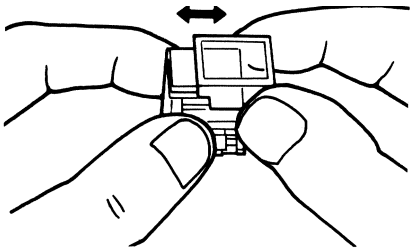
2. Mounting Display Screen Unit

With the OMRON logo on the switch unit faced upward, and the LED contact piece of the display screen unit positioned upward, align the split on each side of the display screen unit with the projections inside the switch unit, and push the display screen unit into the switch unit. A puller is available for easing removal.



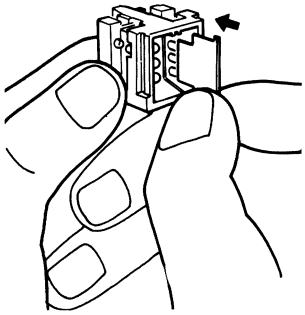
3. Removing/Mounting Lens

Slide the lens along the slide tracks of plunger case with its open side facing the positive lens lock.



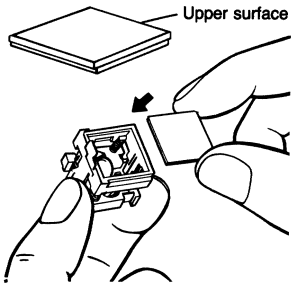
4. Mounting Light Baffle (2-split Screen Type Only)

While holding the plunger case of the display screen unit, insert the light baffle into the interior groove of the plunger case.



5. Mounting Colored Plate

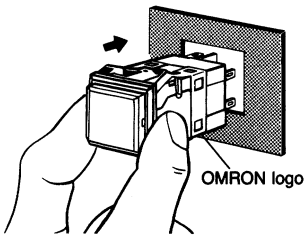
After mounting the light baffle, place the colored plate on the plunger case with the dull side of the colored plate facing downward. Be sure that the projection on the upper surface of the colored plate faces outward.



6. Mounting Switch Onto Panel

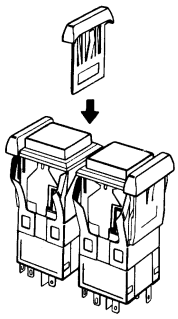
- Individual Mounting

When the mounting switch unit, push the switch unit into the panel cutout from front of the mounting panel by holding the switch unit with the logo mark "OMRON" facing downward. The switch unit will snap into place.



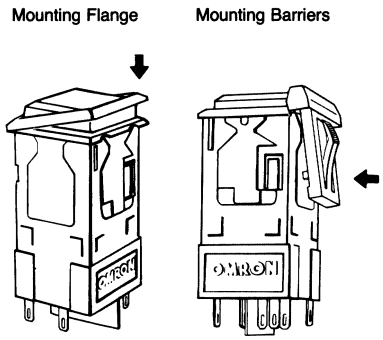
- Multiple Mounting

After inserting each switch unit into the plate cutout, insert the spacing barrier in between the two switch units.

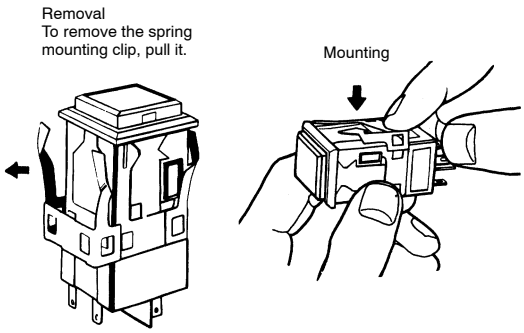


7. Mounting Flange, Barriers and Replacement of the Spring Mounting Clip

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

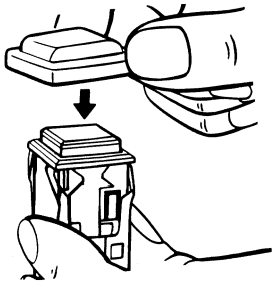


- Replacing Spring Mounting Clip



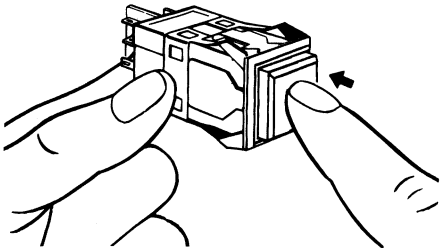
8. Mounting Seal Cover

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

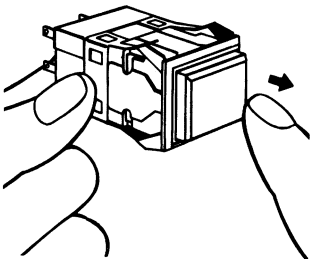


9. Fail-safe Relamping Function

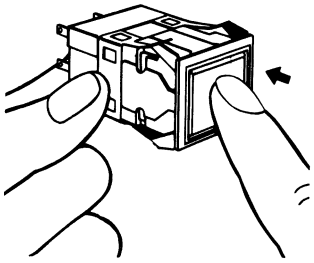
- Insert the assembles display screen unit into the switch unit while pushing the center of the lens.



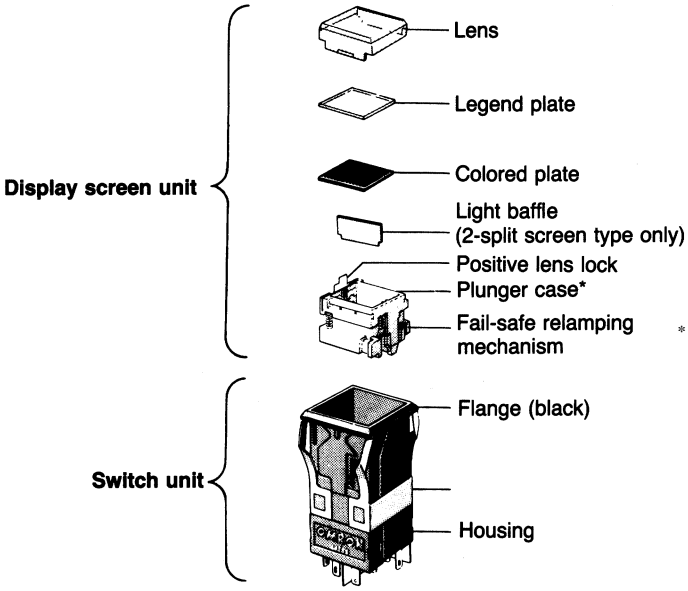
- After the display screen unit is released, the fail-safe relamping mechanism is unlocked.



- The switch will operate normally.

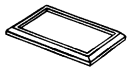
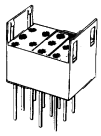
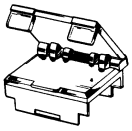
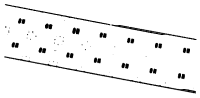


Construction



* With the LED type, an LED is incorporated in the plunger case. With the lamp type, the lamp holder and plunger case are independent units. Insert a T-single screen type, connect an LED across terminals LC and L2.-3/4 lamp in this holder.

Accessories (Order Separately)

Name	Appearance	Classification		For A3PA	Remarks
Flange		Flange color	Black	A3PA-2001	A black flange is provided to the switch unit having the suffix "-1" in its model number. To the switch unit having the suffix "-2", a light gray flange is provided.
			Light gray	A3PA-2002	
			White	A3PA-2003	
Socket		Wire-wrap terminal		A3PA-4101	Cannot be used with the solid-state output type. Cannot be used with 3-pole type.
		PCB terminal		A3PA-4102	
		Solder terminal		A3PA-4103	
Barrier		Short-edge barrier	Black	A3PA-4001	To prevent malfunctioning and to improve design image of the mounting panel.
			Light gray	A3PA-4002	
			White	A3PA-4003	
		Intermediate short barrier	Black	A3PA-4007	
			Light gray	A3PA-4008	
			White	A3PA-4009	
Switch Guard		For horizontal mounting (with OMRON logo facing down)		A3PA-5050	Can be used by exchanging with the lens. Cannot be used with seal cover.
		For vertical mounting (with OMRON logo facing to the right)		A3PA-5055	
Seal Cover		---		A3PA-5060	Cannot be used with barrier and/or switch guard.
Legend Plate		Transparent legend plate		A3PA-5202	Transparent legend plate is supplied with standard LED indicator unit.
		Mild-white legend plate		A3PA-5201	
Character Plate (Character Film)		1 sheet (for 20 switch units)	Character printed	A3PA-5205	Words printed are "ON" "OFF", "START", "STOP", "RESET", "COOL", and "MOTOR". Other characters can be printed by request.
			Non-printed (transparent film)	A3PA-5207	
		1 sheet (for 1 switch unit)	Character printed	A3PA-5206	
			Non-printed	A3PA-5208	

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Cat. No. A30-E1-3