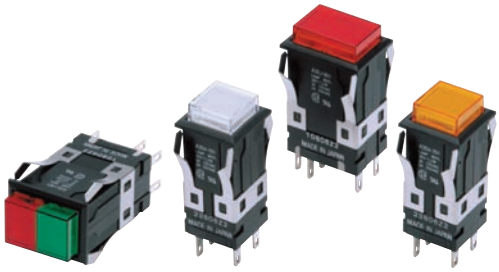
A3S

CSM_A3S_DS_E_8_5

Pushbutton Switch Series with Square 40-mm Body

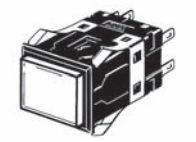
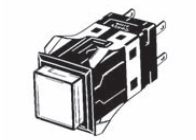
- Combines miniature design with distinct but soft sense of operation.
- Easy panel mounting from the front and simple lamp replacement without tools.



⚠ Refer to *Safety Precautions for All Pushbutton Switches/ Indicators* and *Safety Precautions* on page 17.

List of Models

Lighted Pushbutton Switches

Appearance		Model
Rectangular		**A3SJ**
Square		**A3SA**

■ Specifications: Refer to page 11.
■ Dimensions: Refer to page 13.
■ Accessories: Refer to pages 9 to 10.

Model Number Structure

Model Number Legend ..... The model numbers used to order sets are illustrated below. One set comprises the Operation Unit, Lamp, and Socket Unit. For more information, refer to Ordering Information (pages 3 to 4). 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.

1 - 24E R ..... Single screen

(1) (2) Left Right

A 3 S J - 9 0 A 3 - 24E RW ..... Vertical 2-split screen

Left	Right
R (Red)	W (White)

(1) Shape of Operation Unit

Sym-bol	Shape
J	Rectan-gular
A	Square

(2) Switch Specifications

Standard Load

Symbol	Operation	
A	Momentary	SPDT
B	Alternate	
C	Momentary	DPDT
D	Alternate	

Microload

Symbol	Operation	
E	Momentary	SPDT
F	Alternate	
G	Momentary	DPDT
H	Alternate	

- Standard Load
  250 VAC, 2 A
  125 VDC, 0.4 A
- Microload
  125 VAC, 0.1 A
  30 VDC, 0.1 A

Minimum applicable load
5 VDC, 1 mA

▶ Momentary operation
...Self-resetting

▶ Alternate operation
...Self-holding

(3) Screen Pattern

Illumination-only models

Symbol	Screen pattern
1	Single screen
3	Vertical 2-split screen (rectangular models only)

- Models with colored illumination can be ordered individually. Refer to page 5 for details.

▶ Colored Illumination

Unlit	Lit
White	Color

The built-in LED is colored.

Number of Built-in LEDs

Model	Screen pattern	LED
A3SJ	Single screen	2
	Vertical 2-split screen	2
A3SA	Single screen	1

(4) Lighting Method

LED-lighted Models

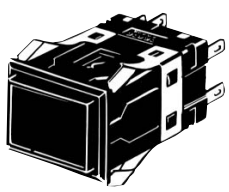
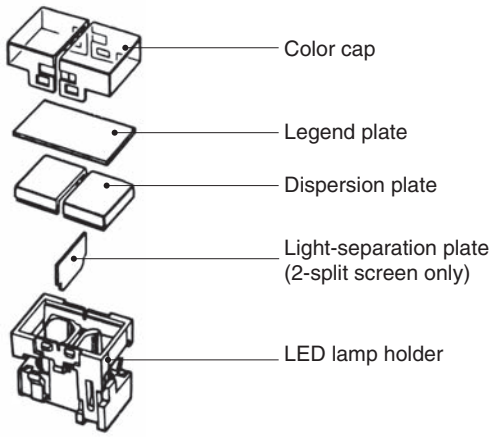
Symbol	Rated voltage
05E	5 VDC
12E	12 VDC
24E	24 VDC

(5) Operation Unit Color

For LED

Symbol	Color
R	Red
Y	Yellow
G	Green
W	White *

* The color cap is transparent.

Type	Structure of Split-screen Operation Unit
 Single screen (Rectangular models and square models) Vertical 2-split screen (Rectangular models only) A3SJ	

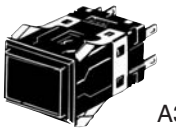
Ordering Information

Ordering as a Set

The model numbers used to order sets of Units are given in the following tables. One set comprises the Operation Unit, Lamp, and Socket Unit. Not all combinations are possible. Ask your OMRON representative for details.

Standard Loads

Rectangular Models



A3SJ

Single screen: 1

Vertical 2-split screen: 1 | 2

Single screen

Output	Lighting	Contact type / Operation	Standard load (250 VAC, 2 A; 125 VDC 0.4 A) Momentary operation (Self-resetting)	Standard load (250 VAC, 2 A; 125 VDC 0.4 A) Alternate operation (Self-holding)	Operation Unit color symbol
SPDT	LED	5 VDC	A3SJ-90A1-05E□	A3SJ-90B1-05E□	Enter the desired color symbol for the Pushbutton in □. R (Red) Y (Yellow) G (Green) W (White)
		12 VDC	A3SJ-90A1-12E□	A3SJ-90B1-12E□	
		24 VDC	A3SJ-90A1-24E□	A3SJ-90B1-24E□	
DPDT	LED	5 VDC	A3SJ-90C1-05E□	A3SJ-90D1-05E□	
		12 VDC	A3SJ-90C1-12E□	A3SJ-90D1-12E□	
		24 VDC	A3SJ-90C1-24E□	A3SJ-90D1-24E□	

Vertical 2-split screen

Output	Lighting	Contact type / Operation	Standard load (250 VAC, 2 A; 125 VDC 0.4 A) Momentary operation (Self-resetting)	Standard load (250 VAC, 2 A; 125 VDC 0.4 A) Alternate operation (Self-holding)	Operation Unit color symbol
SPDT	LED	24 VDC	A3SJ-90A3-24E□□	A3SJ-90B3-24E□□	Enter the desired color symbol for the Pushbutton in □□. R (Red) Y (Yellow) G (Green) W (White)
DPDT	LED	24 VDC	A3SJ-90C3-24E□□	A3SJ-90D3-24E□□	

Microloads

Single screen

Output	Lighting	Contact type / Operation	Microload (125 VAC, 0.1 A; 30 VDC 0.1 A) Momentary operation (Self-resetting)	Operation Unit color symbol
SPDT	LED	12 VDC	A3SJ-90E1-12EY	Enter the desired color symbol for the Pushbutton in □. R (Red) Y (Yellow) G (Green) W (White)
		24 VDC	A3SJ-90E1-24E□	
DPDT	LED	5 VDC	A3SJ-90G1-05EW	
		24 VDC	A3SJ-90G1-24E□	

Vertical 2-split screen

Output	Lighting	Contact type / Operation	Microload (125 VAC, 0.1 A; 30 VDC 0.1 A) Momentary operation (Self-resetting)	Operation Unit color symbol
SPDT	LED	24 VDC	A3SJ-90E3-24E□□	Enter the desired color symbol for the Pushbutton in □□. R (Red) Y (Yellow) G (Green) W (White)
DPDT	LED	24 VDC	A3SJ-90G3-24E□□	

Individual models: Refer to pages 6 to 8.
(The Pushbutton, Lamp, and Switch can be ordered separately.)

■ Specifications: Refer to page 11. ■ Dimensions: Refer to page 13.
■ Accessories: Refer to pages 9 to 10.

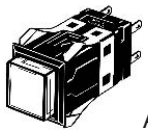
Ordering Information

Ordering as a Set

The model numbers used to order sets of Units are given in the following tables. One set comprises the Operation Unit, Lamp, and Socket Unit. Not all combinations are possible. Ask your OMRON representative for details.

Standard Loads

Square Models



A3SA

Single screen

Single screen

Output	Lighting	Contact type / Operation	Standard load (250 VAC, 2 A; 125 VDC 0.4 A) Momentary operation (Self-resetting)	Standard load (250 VAC, 2 A; 125 VDC 0.4 A) Alternate operation (Self-holding)	Operation Unit color symbol
SPDT	LED	5 VDC	A3SA-90A1-05E□	A3SA-90B1-05E□	Enter the desired color symbol for the Pushbutton in □. R (Red) Y (Yellow) G (Green) W (White)
		12 VDC	A3SA-90A1-12E□	A3SA-90B1-12E□	
		24 VDC	A3SA-90A1-24E□	A3SA-90B1-24E□	
DPDT	LED	5 VDC	A3SA-90C1-05E□	A3SA-90D1-05E□	
		12 VDC	A3SA-90C1-12E□	A3SA-90D1-12E□	
		24 VDC	A3SA-90C1-24E□	A3SA-90D1-24E□	

Microloads

Single screen

Output	Lighting	Contact type / Operation	Microload (125 VAC, 0.1 A; 30 VDC 0.1 A) Momentary operation (Self-resetting)	Operation Unit color symbol
SPDT	LED	5 VDC	A3SA-90E1-05E□	Enter the desired color symbol for the Pushbutton in □. R (Red) Y (Yellow) G (Green) W (White)
		24 VDC	A3SA-90E1-24E□	
DPDT	LED	5 VDC	A3SA-90G1-05EY	
		12 VDC	A3SA-90G1-12E□	
		24 VDC	A3SA-90G1-24E□	

Individual models: Refer to pages 6 to 8.
(The Pushbutton, Lamp, and Switch can be ordered separately.)

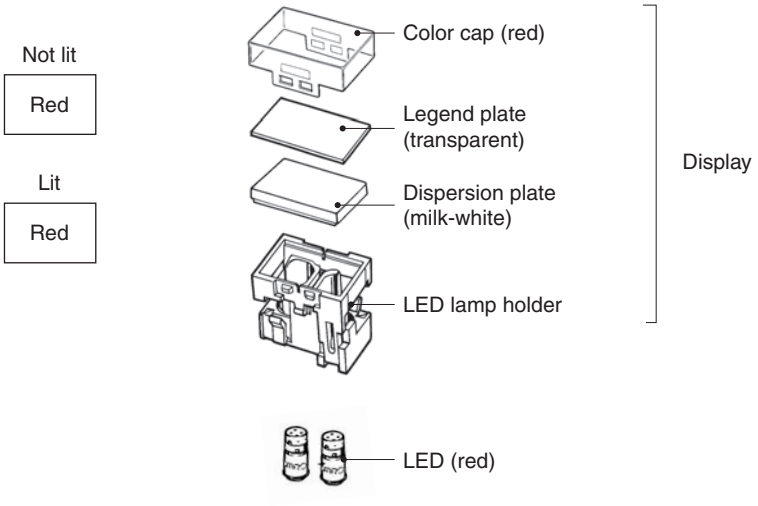
■ Specifications: Refer to page 11. ■ Dimensions: Refer to page 13.
■ Accessories: Refer to pages 9 to 10.

Ordering Information

Illumination-only and Colored-illumination LED Models

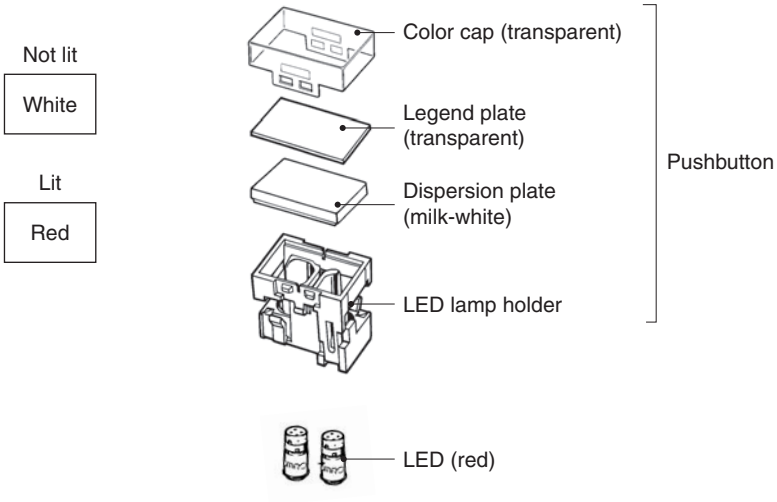
Illumination only describes LED models for which the screen color is the same whether the LED is lit or not. The screen simply becomes brighter when the LED lights.

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 Display (Operation Unit), Lamp, and Socket Unit as shown in the following table.

Display (Operation Unit)			LED	Socket Unit
Single screen	Rectangular models	**A3SJ-5801**	Select the LED lamps to suit your desired coloration from the selection on page 8.	Select from the Switches on page 8.
	Square models	**A3SA-5801**		
2-split screen	Rectangular models only	**A3SJ-5921**		

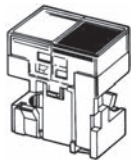
Ordering Information

Ordering Individually ..... Operation Units, Lamps, and Socket Units 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.

Ordering ..... Specify a model number from the following page.

LED-lighted Models

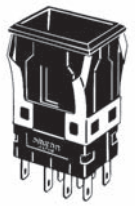
Operation Unit



Lamp (LED)

· DC-only
SLL-□□E□

Socket Unit



Ordering set combinations: Refer to pages 3 to 4.

■ Specifications: Refer to page 11. ■ Dimensions: Refer to page 13.
■ Accessories: Refer to pages 9 to 10.

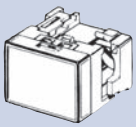
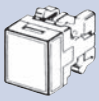
Ordering Information

Ordering Individually ..... Operation Units, Lamps, and Socket Units 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.

Operation Unit

LED-lighted Models

(LED is not built in.)

Screen pattern		Appearance	Display color	Rectangular Models (2 LEDs)  (transparent legend plate built in)	Square Models (1 LED)  (transparent legend plate built in)
Single screen			White	A3SJ-5801	A3SA-5801
			Red	A3SJ-5802	A3SA-5802
			Green	A3SJ-5803	A3SA-5803
			Yellow	A3SJ-5805	A3SA-5805
2-split screen *	Standard split screen		White/red	A3SJ-5901	–
			White/green	A3SJ-5902	
			White/yellow	A3SJ-5904	
			Red/green	A3SJ-5905	
			Red/yellow	A3SJ-5907	
			Green/yellow	A3SJ-5909	
	Reverse split screen		Red/white	A3SJ-5911	–
			Green/white	A3SJ-5912	
			Green/red	A3SJ-5915	
			Yellow/red	A3SJ-5917	
			Yellow/green	A3SJ-5919	
	One-color 2-split screen		White/white	A3SJ-5921	–
			Red/red	A3SJ-5922	
			Green/green	A3SJ-5923	
			Yellow/yellow	A3SJ-5925	

Note: The color cap is transparent when the display color is white.
* Two-split screen configurations are given with the OMRON surface of the case downward.

Ordering set combinations: Refer to pages 3 to 4.

■ Specifications: Refer to page 11. ■ Dimensions: Refer to page 13.
■ Accessories: Refer to pages 9 to 10.

Ordering Information

Ordering Individually ..... Operation Units, Lamps, and Socket Units 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.

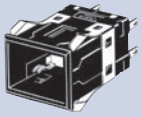
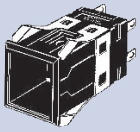
Lamp

LED Lamp

Operating voltage / Color	5 VDC	12 VDC	24 VDC
	Model (DC only)	Model (DC only)	Model (DC only)
Red	SLL-05ER	SLL-12ER	SLL-24ER
Yellow	SLL-05EY	SLL-12EY	SLL-24EY
Green	SLL-05EG	SLL-12EG	SLL-24EG
White	SLL-05EW	SLL-12EW	SLL-24EW

Note: The A3SJ (M2SJ) requires two LEDs for each Switch. The A3SA (M2SA) requires one LED.

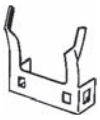
Switch (LED models)

Contact type		Number of outputs	Operation	Appearance: Rectangular models 	Appearance: Square models 	Selection precautions
Standard load	Silver contacts	1	Momentary operation	A3SJ-8010	A3SA-7010	• Use the Socket Unit in combination with the same shape Operation Unit (rectangular or square). Example: For the A3SJ-5801 Rectangular Operation Unit, select the A3SJ-8□□0 Socket Unit. • Momentary operation is self-resetting, and alternate operation is self-holding (i.e., push-on, push-off).
			Alternate operation	A3SJ-8020	A3SA-7020	
		2	Momentary operation	A3SJ-8030	A3SA-7030	
			Alternate operation	A3SJ-8040	A3SA-7040	
Micro-load	Gold alloy contacts	1	Momentary operation	A3SJ-8050	A3SA-7050	
			Alternate operation	---	A3SA-7060	
		2	Momentary operation	A3SJ-8070	A3SA-7070	
			Alternate operation	A3SJ-8080	A3SA-7080	

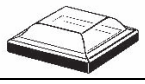
Ordering Information

Accessories, Replacements, and Tools

Accessories for Rectangular Models

Name	Appearance	Classification	Model	Application precautions
Barrier		Short edge Barriers (1 pair)	**A3SA-4001**	The purpose of a Barrier is to prevent malfunctioning and to improve design image of the mounting panel. There is one intermediate Barrier and one pair of edge Barriers (2 Barriers). Mount Short Barriers horizontally. Mount Long Barriers vertically.
		Short intermediate Barriers	**A3SA-4002**	
		Long edge Barriers (1 pair)	**A3SJ-4003**	
		Long intermediate Barriers	**A3SJ-4004**	
Switch Guard		–	**A3SJ-5050**	Cannot be used with Barrier or Seal Cover.
Seal Cover		–	**A3SJ-5060**	• Cannot be used with Barrier or Switch Guard. • Cap material: Vinyl chloride
Long Mounting Plate		1 pair	**A3SJ-3002**	Use when vertically mounting individual (with Barrier) or multiple Switches (in standard mounting style and with Barrier). A Short Mounting Plate is attached to the Switch; replace it with the long one.

Accessories for Square Models

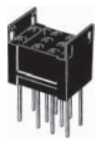
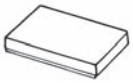
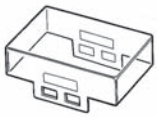
Name	Appearance	Classification	Model	Application precautions
Barrier		Short Edge Barriers (1 pair)	**A3SA-4001**	The purpose of the Barrier is to prevent malfunctioning and to improve design image of the mounting panel.
		Short Intermediate Barrier	**A3SA-4002**	
Switch Guard		–	**A3SA-5050**	Cannot be used with Barrier or Seal Cover.
Seal Cover		–	**A3SA-5060**	• Cannot be used with Barrier or Switch Guard. • Cap material: Vinyl chloride

■ Accessory mounting: Refer to page 18.

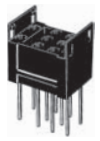
Ordering Information

Accessories, Replacements, and Tools

Replacements for Rectangular Models

Name	Appearance	Classification		Model	Application precautions
Socket		Wire-wrap terminals		**A3SJ-4104**	• Sockets cannot be used for multiple mounting.
		PCB terminals		**A3SJ-4105**	
		Solder terminals		**A3SJ-4106**	
Dispersion plate		Milk-white	Single screen	**A3SJ-5107**	–
Color cap		Transparent	Single screen	**A3SJ-5600**	• Contact your OMRON representative for color changes or inscribing. • If LEDs are to be used, use a color cap that matches the LED color.
		White		**A3SJ-5601**	
		Red		**A3SJ-5602**	
		Green		**A3SJ-5603**	
		Yellow		**A3SJ-5605**	
		Transparent	2-split screen	**A3SJ-5630**	
		Green		**A3SJ-5633**	
		Yellow		**A3SJ-5635**	
Legend plate		Transparent		**A3SJ-4204**	A transparent legend plate is mounted on the Operation Unit.
		Milk-white		**A3SJ-4203**	

Replacements for Square Models

Name	Appearance	Classification	Model	Application precautions
Socket		Wire-wrap terminals	**A3SA-4101**	• Sockets cannot be used for multiple mounting.
		PCB terminals	**A3SA-4102**	
		Solder terminals	**A3SA-4103**	
Dispersion plate		Milk-white	**A3SA-5107**	–
Color cap		Transparent	**A3SA-5600**	• Contact your OMRON representative for color changes or inscribing. • If LED colors are to be used, use a color cap that matches the LED color.
		White	**A3SA-5601**	
		Red	**A3SA-5602**	
		Green	**A3SA-5603**	
		Blue	**A3SA-5604**	
		Yellow	**A3SA-5605**	
Legend plate		Transparent	**A3SA-4204**	A transparent color cap is mounted to a standard Display.
		Milk-white	**A3SA-4203**	

Tools

Name	Appearance	Classification	Model	Application precautions
Extractor		–	**A3PJ-5080**	Convenient for extracting the Operation Unit.

■ Accessory mounting: Refer to page 18.

Specifications

Approved Standard Ratings

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

Standard Load: 3 A at 125 VAC
2 A at 250 VAC
Microload: 0.1 A at 125 VAC
0.1 A at 30 VDC

Note: Certification has been obtained for the Switch Unit.
For detailed information on individual products that have received certification, consult your supplier.

Ratings

For Standard Loads

Rated voltage	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	3		1	0.7	2		1.5	1
250 VAC	2		0.7	0.5	1.5		1	0.7
8 VDC	3		1		2		1.5	
14 VDC	3		1		1.5		1.5	
30 VDC	2		1		1.5		1	
125 VDC	0.4		0.05		0.4		0.05	
250 VDC	0.2		0.03		0.2		0.03	

Note: 1. The above values are for steady-state currents.
2. Inductive load: Power factor = 0.4; time constant = 7 ms.
3. The lamp load has an inrush current of 10 times the steady-state current.
4. The motor load has an inrush current of 6 times the steady-state current.

The rated values are for testing conducted under the following conditions.
(1) Ambient temperature: 20±2°C
(2) Ambient humidity: 65% ±5%RH
(3) Operating frequency: 20 times/min

For Microloads

Rating	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 Lamp

Type	Applied voltage	Rated voltage	Rated current	Built-in limiting resistance
DC only	5 VDC±5%	5 VDC	30 mA	39 Ω
	12 VDC±5%	12 VDC	15 mA	270 Ω
	24 VDC±5%	24 VDC	12.5 mA	1300 Ω

Characteristics

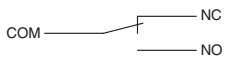
Operating frequency	Mechanical	Momentary operation models: 120 operations/min max. *1
	Electrical	20 operations/min max.
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance	Standard load	50 mΩ max. (initial value)
	Microload	50 mΩ max. (initial value)
Dielectric strength	Between terminals of same polarity	1,000 VAC, 50/60 Hz for 1 minute
	Between terminals of different polarity	2,000 VAC, 50/60 Hz for 1 minute
	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 *2
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude *3
Shock resistance	Destruction	500 m/s² max.
	Malfunction	200 m/s² max. *3
Life expectancy	Mechanical	Momentary operation models: 1,000,000 operations min. Alternate operation models: 100,000 operations min. (One operation consists of set and reset operations.)
	Electrical	100,000 operations min. (rated load)
Weight		Approx. 10 g
Inrush current	NC	Standard load: 10 A max.
	NO	Standard load: 10 A max.
Ambient operating temperature		–10 to 50°C (with no icing or condensation)
Ambient operating humidity		35% to 85% RH
Ambient storage temperature		–25 to 65°C (with no icing or condensation)
Degree of protection		IP00
Electric shock protection class		Class II
PTI (proof tracking index)		175
Pollution degree		3 (IEC 60947-5-1)

*1. With alternate operation models, 60 operations/min max. One operation cycle consists of set and reset operations.
*2. With no LED lamp mounted.
*3. Malfunction : 1 ms max.

Operating Characteristics

Operating characteristics	Operation	Momentary operation models	Alternate operation models
Operating force	OF max.	3.92 N	4.90 N
Releasing force	RF min.	0.49 N	0.294 N
Total travel	TT	Approx. 3 mm	Approx. 3 mm
Pretravel	PT max.	2.2 mm	2.2 mm
Lock travel alternate	LTA min.	–	0.5 mm

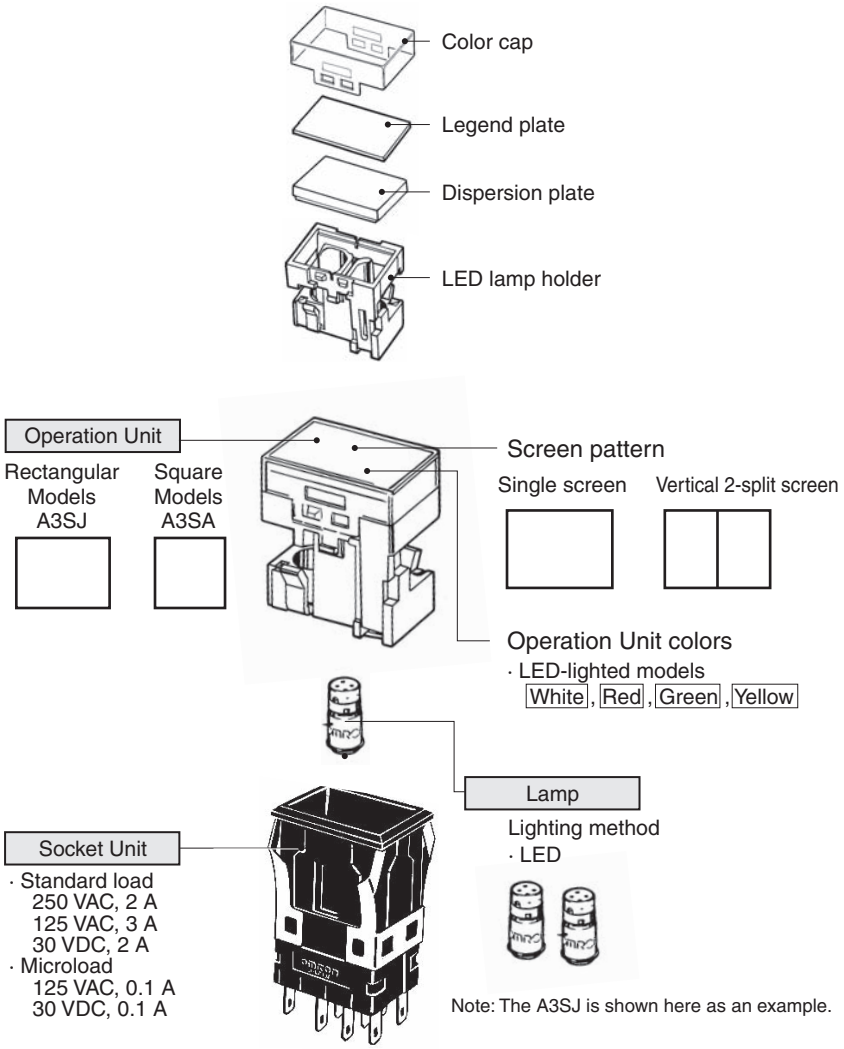
Contact Form

Name	Contact Form
Double-throw contacts	

Nomenclature

Model Structure

Operation Unit Structure



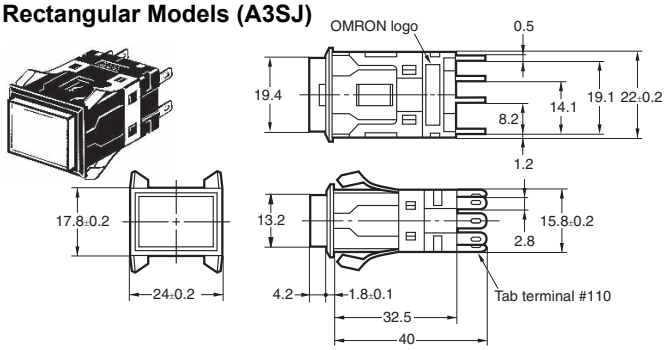
Note: The A3SJ is shown here as an example.

Dimensions

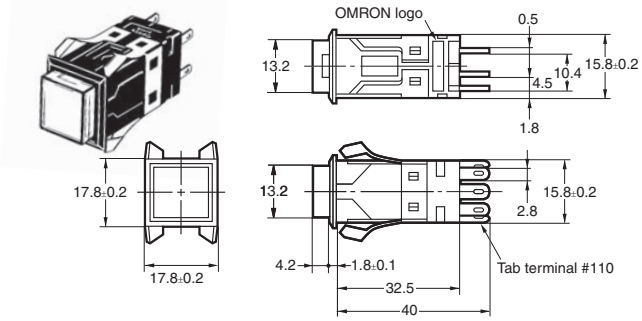
The Dimension shows 2-switch outputs.

(Unit: mm)

Rectangular Models (A3SJ)



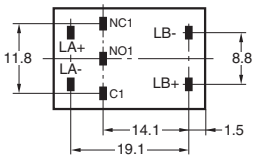
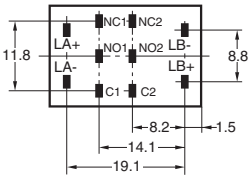
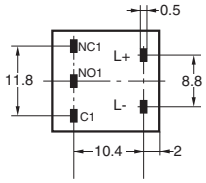
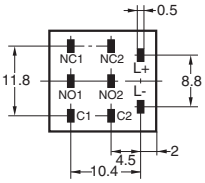
Square Models (A3SA)



Note: Unless specified, a tolerance of ±0.4 mm applies for all dimensions. Use a mounting panel thickness of 1 to 4 mm.

Terminal Arrangement

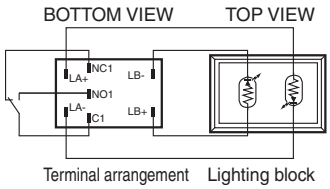
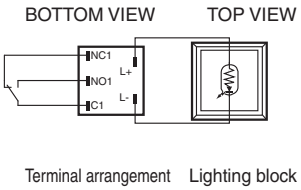
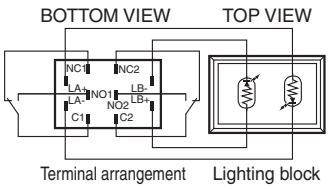
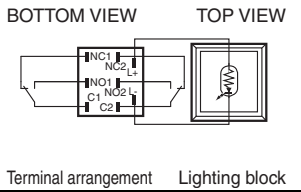
Bottom View (All are shown with the OMRON logo facing down.)

Rectangular Models (A3SJ)		Square Models (A3SA)	
SPDT	**DPDT**	**SPDT**	**DPDT**
			

Note: The arrangements given above are not indicated on the Socket Unit.

Contact Type

LED Lamp-lighted Models

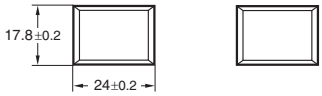
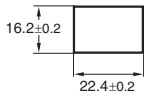
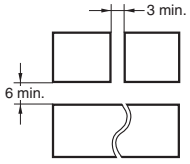
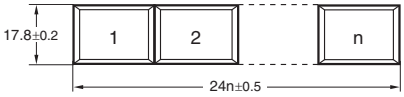
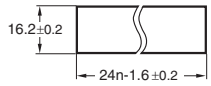
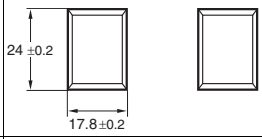
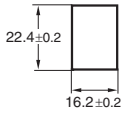
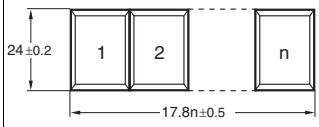
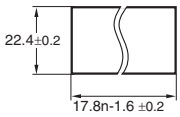
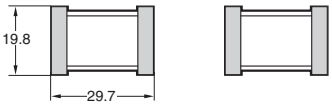
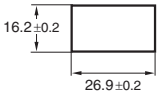
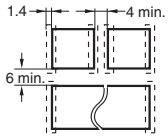
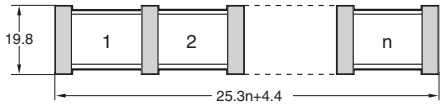
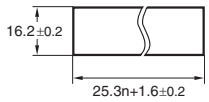
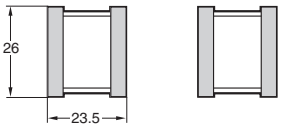
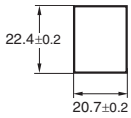
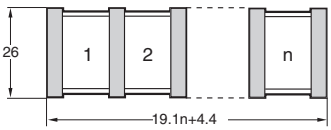
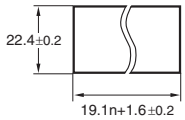
Type / Model	Rectangular Models (A3SJ)	Square Models (A3SA)
SPDT		
DPDT		

Dimensions

(Unit: mm)

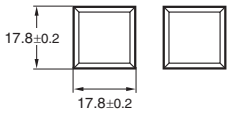
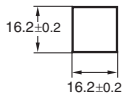
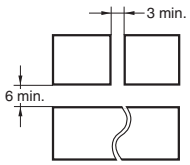
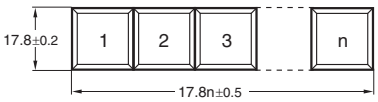
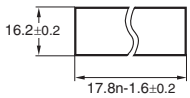
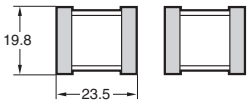
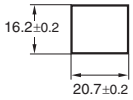
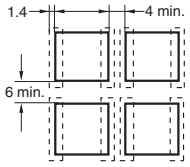
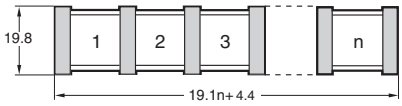
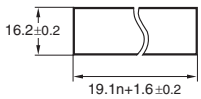
Panel Cutout (If using a Switch Guard or Seal Cover, refer to the panel cutout diagrams on page 16.)

Rectangular Models (A3SJ)

Classification		Mounting design	Panel cutout	Remarks
Flange mount models	Individual mounting, horizontal			Panel cutout spacing between rows of Units: 
	Multiple mounting, horizontal			
	Individual mounting, vertical	 Mount to Long Mounting Plate (A3SJ-3002) before use.		
	Multiple mounting, vertical	 Mount to Long Mounting Plate (A3SJ-3002) before use.		
Barrier mount models	Individual mounting, horizontal			Panel cutout spacing between rows of Units: 
	Multiple mounting, horizontal			
	Individual mounting, vertical	 Mount to Long Mounting Plate (A3SJ-3002) before use.		
	Multiple mounting, vertical	 Mount to Long Mounting Plate (A3SJ-3002) before use.		Dotted line indicates the position of each mounting Barrier.

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

Square Models (A3SA)

Classification		Mounting design	Panel cutout	Remarks
Flange mount models	Individual mounting			Panel cutout spacing between rows of Units: 
	Multiple mounting			
Barrier mount models	Individual mounting			Panel cutout spacing between rows of Units: 
	Multiple mounting			Dotted line indicates the position of each mounting Barrier.

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

Dimensions

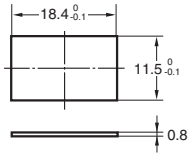
(Unit: mm)

Accessory Mounting Dimensions

Legend Plate

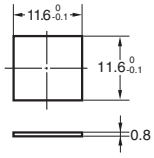
Rectangular Models

A3SJ-4203/-4204



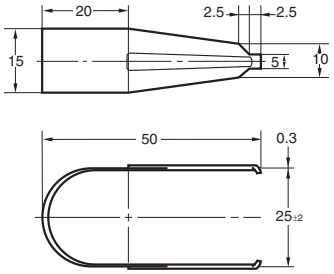
Square Models

A3SA-4203/-4204



Extractor

A3PJ-5080



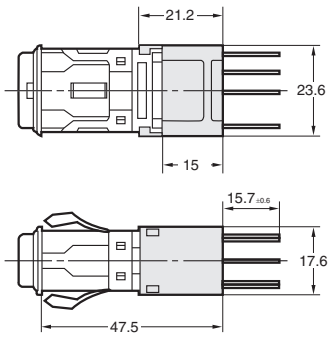
Note: Made from stainless steel.

Socket-mounting Dimensions

Rectangular Models

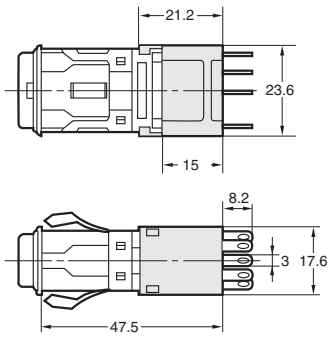
Wire-wrap Terminals

A3SJ-4104



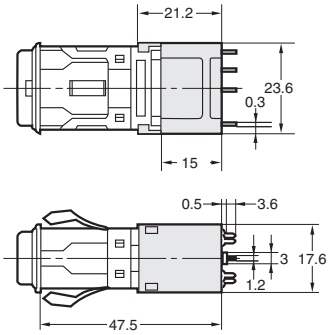
Solder Terminals

A3SJ-4106

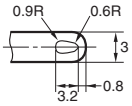


PCB Terminals

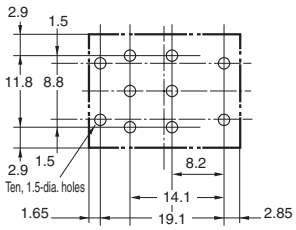
A3SJ-4105



Terminal Hole Dimensions



PCB Cutout (Bottom View)

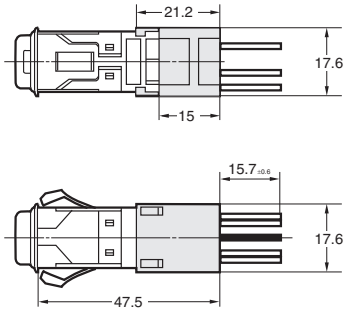


Dimensions

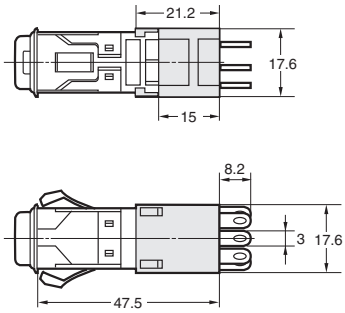
(Unit: mm)

Square Models

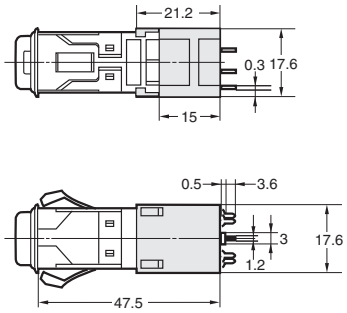
Wire-wrap Terminals
A3SA-4101



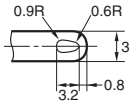
Solder Terminals
A3SA-4103



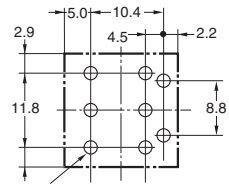
PCB Terminals
A3SA-4102



Terminal Hole Dimensions



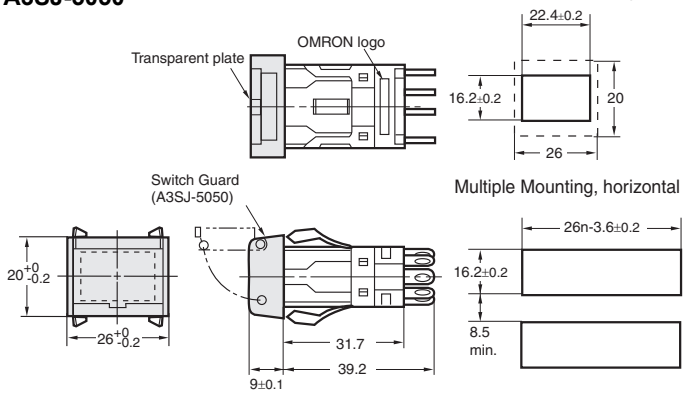
PCB Cutout (bottom view)



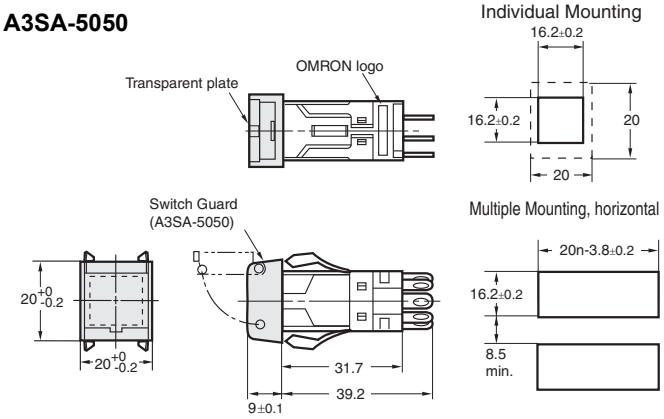
Eight, 1.5-dia. holes
The OMRON logo is downward on the Socket Unit.

Switch and Guard Mounting Dimensions

Rectangular Models
A3SJ-5050

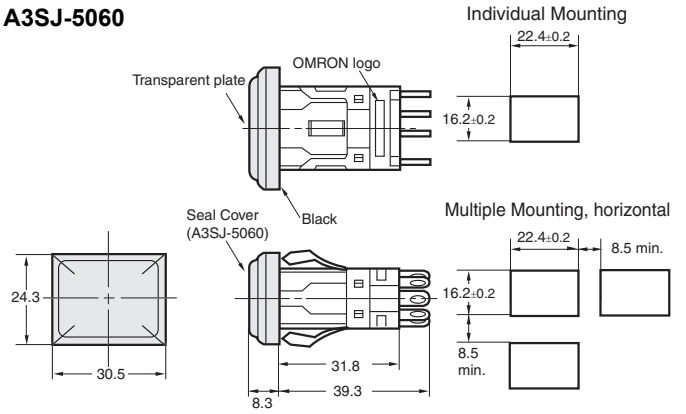


Square Models
A3SA-5050

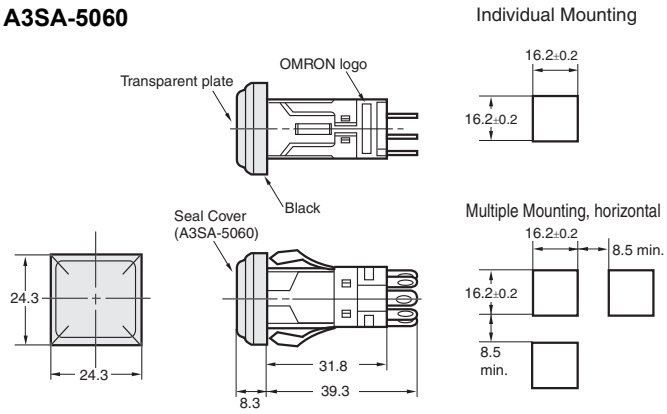


Seal Cover Mounting Dimensions

Rectangular Models
A3SJ-5060



Square Models
A3SA-5060



Note: 1. Recommended panel thickness: 1.0 to 3.3 mm
2. Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

Safety Precautions

Refer to *Safety Precautions for All Pushbutton Switches/Indicators*.

Precautions for Correct Use

Mounting

- 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.

Wiring

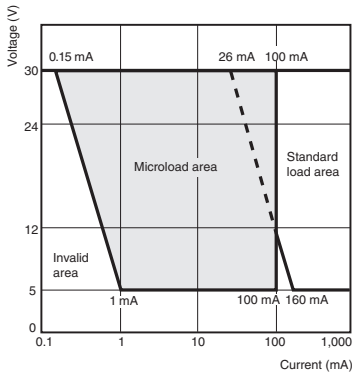
- For wiring, use a wire size that is appropriate for the applied voltage and the supplied current. Be sure to perform soldering according to the following conditions. Using the Switch with incomplete soldering may result in errors and heat, which may cause fire.
  (1) Manual soldering: Use a soldering iron with a tip temperature of 350°C maximum and complete soldering within 3 seconds.
  (2) Dip soldering: Solder at 350°C for 3 s or less.
  Wait for one minute after soldering before exerting any external force on the solder.
- Use non-corrosive liquid rosin as the flux.
- If screw-tightened terminals are used, hold the Socket Unit Set or Socket Unit and install the lead wiring applying a torque of less than 0.98 N·m to the Socket Unit. Applying a torque of more than 0.98 N·m may result in damage. The tightening torque is 0.59 to 0.78 N·m.
- Make sure that the insulating sheath of the wires does not come in contact with the Unit. If wiring is performed with the insulating sheath of the wires coming in contact with the Unit, use wire with a minimum heat resistance of 100°C.
- After wiring the Switch, make sure that there is a suitable isolation distance.

Operating Environment

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

Using Microloads

- Using a standard load switch when a microload circuit is opened or closed may cause wear 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 contacts are 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% (λ 60) (conforming to JIS C5003).
  The equation λ 60 = 0.5 x 10^{-6}/time indicates that the estimated malfunction rate is less than 1/2,000,000 with a reliability level of 60%.



LED Lamp

- A current-limiting resistor for the LED lamp is built in, so no external resistor is required.

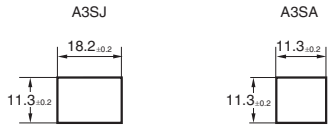
Rated voltage	Built-in limiting resistance
5 VDC	39 Ω
12 VDC	270 Ω
24 VDC	1300 Ω

Operation

- Always mount the Operation Unit before operating the Switch. (Using your fingers or tweezers to operate moving parts of the Switch may deform internal parts and cause malfunctions.)

Character Film

- If the character film is to be specially prepared, use heat-resistant film with a maximum thickness of 0.2 mm.



Others

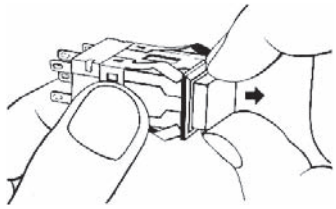
- If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

Application

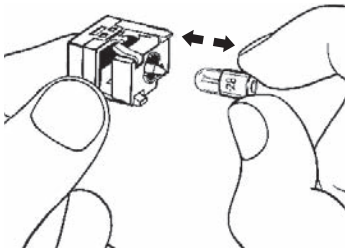
Replacing LED Lamps and Panel Mounting

Removing the Display

- Grasp the groove on the color cap surface, and pull it firmly toward you to remove the Display.
- An Extractor (A3PJ-5080) is available to conveniently remove the Display.

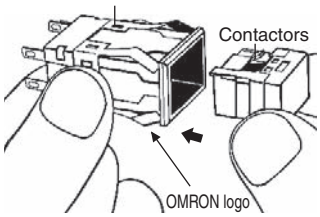


Mounting and Replacing LED Lamps



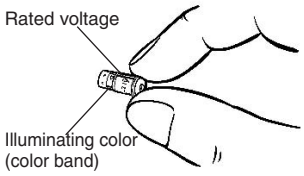
Inserting the Display into the Socket Unit

Insert the Operation Unit in the proper direction. With the OMRON logo downward, insert the Operation Unit so that the lamp/LED terminals on the inside surface of the Unit case and the contactors of the Display.



Rated Voltage and Color of LED

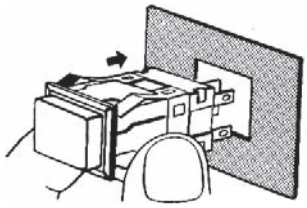
The LED voltage rating is indicated on the base. Use the LED within ±5% of voltage range.



Mounting to the Switch Panel

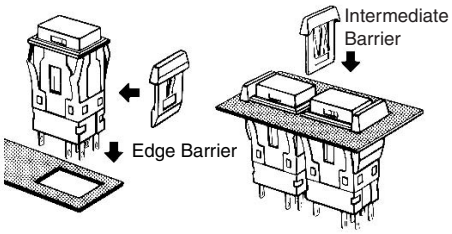
Mount the Socket Unit to the panel by inserting it from the front of the panel.

Mount the Socket Unit so that the OMRON logo is downward.



Barrier Mounting

- Place the Edge Barrier on the side of the Socket Unit, and then insert it into the panel.
- Insert the Intermediate Barrier between the Switches after inserting the Socket Units into the panel.



Inscribing Legend Plate Characters

Inscribing

A3SJ (M2SJ)

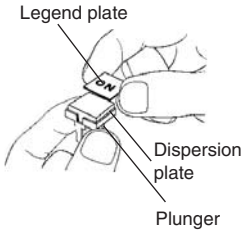
- Inscription depth: 0.5 mm max.
- The legend plate is made of polycarbonate, so apply an alcohol-based paint coating, such as melamine, phthalate, or acrylic resin paint when marking the legend.

- When replacing the legend plate, be careful that the coil spring in the Display does not become removed.

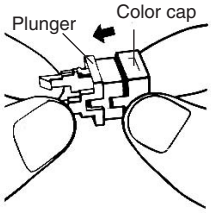
Assembling the Legend Plate (Plunger)
A3SA (M2SA)

(LED Lamp)

(1) Assemble the color plate to the plunger, and then assemble the legend plate on top.



(2) Assemble the color cap to the inscribed plunger.

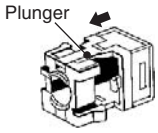


(3) Push in the color in the direction of the arrow to assemble the plunger and the lamp holder.

Lighted Square Pushbutton Switches

A3SA

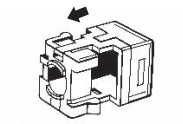
Perform the assembly so that the wide groove and the hook on the plunger are in the same direction.



Indicator

M2SA

Perform the assembly so that the wide groove and the hook on the plunger are in the same direction.



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