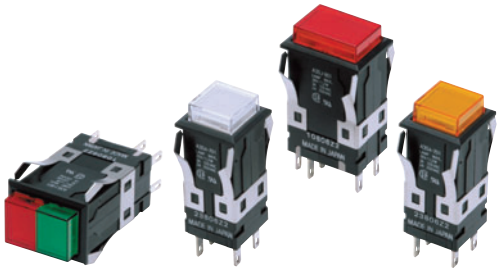
# A3S

CSM_A3S_DS_E_6_1

## Pushbutton Switch Series with Square 40-mm Body

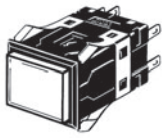
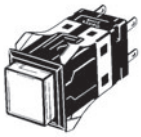
- Combines miniature design with distinct but soft sense of operation.
- Easy panel mounting from the front and simple lamp replacement without tools.



⚠ Refer to *Safety Precautions for All Pushbutton Switches* and *Safety Precautions* on page 18.

## List of Models

### Lighted Pushbutton Switches

| Appearance | Model |
|---|---|
| Rectangular  | **A3SJ** |
| Square  | **A3SA** |

■ Specifications: Refer to page 12.
■ Dimensions: Refer to page 14.
■ Accessories: Refer to pages 10 to 11.

## 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 information on combinations, refer to Ordering Information on pages 3 to 4.

**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

| Symbol | Shape |
|---|---|
| J | Rectangular |
| 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.

### (4) Lighting Method

**LED-lighted Models**

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

**Incandescent Lamp-lighted Models**

| Symbol | Rated voltage |
|---|---|
| 06 | 6 VAC/VDC |
| 14 | 14 VAC/VDC |
| 28 | 28 VAC/VDC |

### (5) Operation Unit Color For LED

| Symbol | Color |
|---|---|
| R | Red |
| Y | Yellow |
| G | Green |
| W | White * |

**Incandescent Lamp-lighted Models**

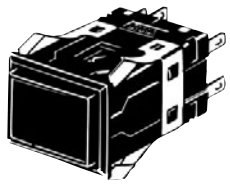
| Symbol | Color |
|---|---|
| R | Red |
| Y | Yellow |
| G | Green |
| A | Blue |
| W | White * |

* The color cap is transparent.

### Number of Built-in LEDs and Incandescent Lamps

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

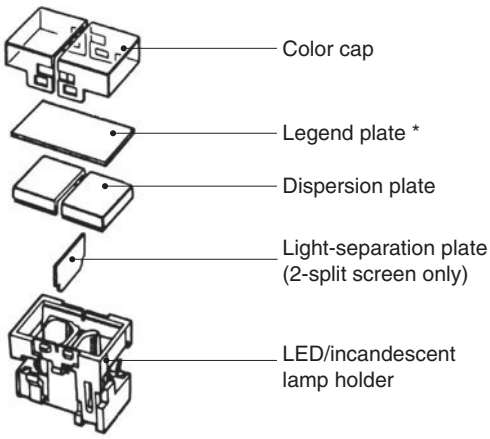
| Type | Structure of Split-screen Operation Unit |
|---|---|



Single screen
(Rectangular models and square models)

Vertical 2-split screen
(Rectangular models only)

A3SJ



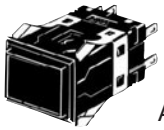

* Not included for the Square Models (A3SA) with incandescent lamp.

## 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.

### 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 □.<br>R (Red)<br>Y (Yellow)<br>G (Green)<br>A (Blue) *<br>W (White) |
| | | 12 VDC | A3SJ-90A1-12E□ | A3SJ-90B1-12E□ | |
| | | 24 VDC | A3SJ-90A1-24E□ | A3SJ-90B1-24E□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SJ-90A1-06□ | A3SJ-90B1-06□ | |
| | | 14 VAC/VDC | A3SJ-90A1-14□ | A3SJ-90B1-14□ | |
| | | 28 VAC/VDC | A3SJ-90A1-28□ | A3SJ-90B1-28□ | |
| 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□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SJ-90C1-06□ | A3SJ-90D1-06□ | |
| | | 14 VAC/VDC | A3SJ-90C1-14□ | A3SJ-90D1-14□ | |
| | | 28 VAC/VDC | A3SJ-90C1-28□ | A3SJ-90D1-28□ | |

* Incandescent lamp only.

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 □□.<br>R (Red)<br>Y (Yellow)<br>G (Green)<br>W (White)<br>A (Blue) * |
| | Incandescent lamp | 28 VDC | A3SJ-90A3-28□□ | A3SJ-90B3-28□□ | |
| DPDT | LED | 24 VDC | A3SJ-90C3-24E□□ | A3SJ-90D3-24E□□ | |
| | Incandescent lamp | 28 VDC | A3SJ-90C3-28□□ | A3SJ-90D3-28□□ | |

* Incandescent lamp only.

### 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 | A3SJ-90E1-05E□ | Enter the desired color symbol for the Pushbutton in □.<br>R (Red)<br>Y (Yellow)<br>G (Green)<br>A (Blue) *<br>W (White) |
| | | 12 VDC | A3SJ-90E1-12E□ | |
| | | 24 VDC | A3SJ-90E1-24E□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SJ-90E1-06□ | |
| | | 14 VAC/VDC | A3SJ-90E1-14□ | |
| | | 28 VAC/VDC | A3SJ-90E1-28□ | |
| DPDT | LED | 5 VDC | A3SJ-90G1-05E□ | |
| | | 12 VDC | A3SJ-90G1-12E□ | |
| | | 24 VDC | A3SJ-90G1-24E□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SJ-90G1-06□ | |
| | | 14 VAC/VDC | A3SJ-90G1-14□ | |
| | | 28 VAC/VDC | A3SJ-90G1-28 □ | |

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 □□.<br>R (Red)<br>Y (Yellow)<br>G (Green)<br>W (White)<br>A (Blue) * |
| | Incandescent lamp | 28 VDC | A3SJ-90E3-28□□ | |
| DPDT | LED | 24 VDC | A3SJ-90G3-24E□□ | |
| | Incandescent lamp | 28 VDC | A3SJ-90G3-28□□ | |

* Incandescent lamp only.

Individual models: Refer to pages 6 to 9.
(The Pushbutton, Lamp, and Switch can be ordered separately.)

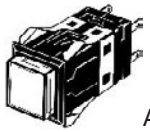
■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 14.
■ Accessories: Refer to pages 10 to 11.

## 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.

### 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) | | Operation Unit color symbol |
|---|---|---|---|---|---|
| | | | Momentary operation (Self-resetting) | Alternate operation (Self-holding) | |
| SPDT | LED | 5 VDC | A3SA-90A1-05E□ | A3SA-90B1-05E□ | Enter the desired color symbol for the Pushbutton in □.<br>R (Red)<br>Y (Yellow)<br>G (Green)<br>A (Blue) *<br>W (White) |
| | | 12 VDC | A3SA-90A1-12E□ | A3SA-90B1-12E□ | |
| | | 24 VDC | A3SA-90A1-24E□ | A3SA-90B1-24E□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SA-90A1-06□ | A3SA-90B1-06□ | |
| | | 14 VAC/VDC | A3SA-90A1-14□ | A3SA-90B1-14□ | |
| | | 28 VAC/VDC | A3SA-90A1-28□ | A3SA-90B1-28□ | |
| 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□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SA-90C1-06□ | A3SA-90D1-06□ | |
| | | 14 VAC/VDC | A3SA-90C1-14□ | A3SA-90D1-14□ | |
| | | 28 VAC/VDC | A3SA-90C1-28□ | A3SA-90D1-28□ | |

* Incandescent lamp only.

### Microloads

Single screen

| Output | Lighting | Contact type / Operation | Microload (125 VAC, 0.1 A; 30 VDC 0.1 A) | Operation Unit color symbol |
|---|---|---|---|---|
| | | | Momentary operation (Self-resetting) | |
| SPDT | LED | 5 VDC | A3SA-90E1-05E□ | Enter the desired color symbol for the Pushbutton in □.<br>R (Red)<br>Y (Yellow)<br>G (Green)<br>A (Blue) *<br>W (White) |
| | | 12 VDC | A3SA-90E1-12E□ | |
| | | 24 VDC | A3SA-90E1-24E□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SA-90E1-06□ | |
| | | 14 VAC/VDC | A3SA-90E1-14□ | |
| | | 28 VAC/VDC | A3SA-90E1-28□ | |
| DPDT | LED | 5 VDC | A3SA-90G1-05E□ | |
| | | 12 VDC | A3SA-90G1-12E□ | |
| | | 24 VDC | A3SA-90G1-24E□ | |
| | Incandescent lamp | 6 VAC/VDC | A3SA-90G1-06□ | |
| | | 14 VAC/VDC | A3SA-90G1-14□ | |
| | | 28 VAC/VDC | A3SA-90G1-28□ | |

* Incandescent lamp only.

Individual models: Refer to pages 6 to 9.
(The Pushbutton, Lamp, and Switch can be ordered separately.)

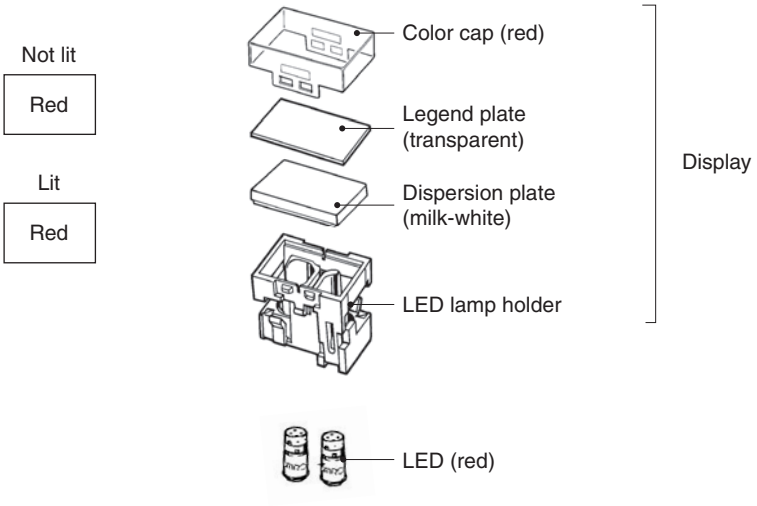
■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 14.
■ Accessories: Refer to pages 10 to 11.

# Ordering Information

## Illumination-only and Colored-illumination LED Models

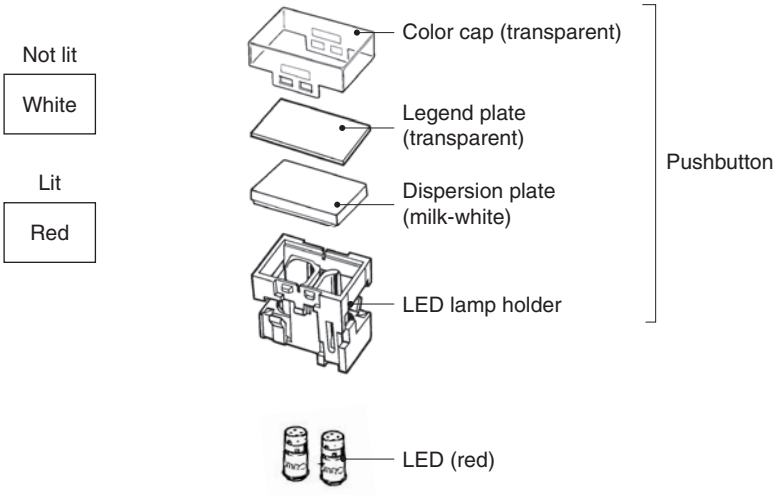
Illumination only describes LED models for which the screen color is the same whether the LED is lit or not. The screen simply becomes brighter when the LED lights.

Example: Red LED

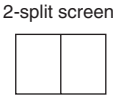



Colored illumination describes LED models for which the screen color is white when the LED is not lit and changes to the color of the LED lamp when the LED is lit.

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 9. | Select from the Switches on page 9. |
| | Square models | **A3SA-5801** | | |
| 2-split screen  | Rectangular models only | **A3SJ-5921** | | |

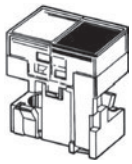
## Ordering Information

**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**

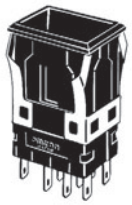
**Operation Unit**



**Lamp (LED Lamp)**

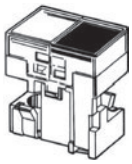
· DC-only
SLL-□□E□

**Socket Unit**



**Incandescent Lamp-lighted Models**

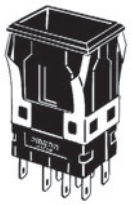
**Operation Unit**



**Lamp (Incandescent Lamp)**

· Standard lamp
SLL-□□

**Socket Unit**



Ordering set combinations: Refer to pages 3 to 4.

■ Specifications: Refer to page 12. ■ Dimensions: Refer to page 14.
■ Accessories: Refer to pages 10 to 11.

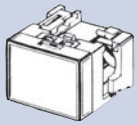
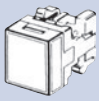
## Ordering Information

**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 | |
| | | | Yellow/white | A3SJ-5914 | |
| | | | 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 12. ■ Dimensions: Refer to page 14.
■ Accessories: Refer to pages 10 to 11.

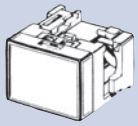
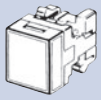
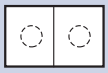
## Ordering Information

**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

### Incandescent Lamp-lighted Models

(Incandescent lamp is not built in.)

| Screen pattern | | Appearance | Display color | Rectangular  (transparent legend plate built in) | Square  (Legend plate not included) |
|---|---|---|---|---|---|
| Single screen | | One lamp  | White | A3SJ-5301 | A3SA-5301 |
| | | | Red | A3SJ-5302 | A3SA-5302 |
| | | | Green | A3SJ-5303 | A3SA-5303 |
| | | | Blue | A3SJ-5304 | A3SA-5304 |
| | | | Yellow | A3SJ-5305 | A3SA-5305 |
| | | Two lamps  | White | A3SJ-5321 | – |
| | | | Red | A3SJ-5322 | |
| | | | Green | A3SJ-5323 | |
| | | | Blue | A3SJ-5324 | |
| | | | Yellow | A3SJ-5325 | |
| 2-split screen * | Standard split screen |  | White/red | A3SJ-5201 | – |
| | | | White/green | A3SJ-5202 | |
| | | | White/blue | A3SJ-5203 | |
| | | | White/yellow | A3SJ-5204 | |
| | | | Red/green | A3SJ-5205 | |
| | | | Red/blue | A3SJ-5206 | |
| | | | Red/yellow | A3SJ-5207 | |
| | | | Green/blue | A3SJ-5208 | |
| | | | Green/yellow | A3SJ-5209 | |
| | | | Blue/yellow | A3SJ-5210 | |
| | Reverse split screen | | Red/white | A3SJ-5211 | – |
| | | | Green/white | A3SJ-5212 | |
| | | | Blue/white | A3SJ-5213 | |
| | | | Yellow/white | A3SJ-5214 | |
| | | | Green/red | A3SJ-5215 | |
| | | | Blue/red | A3SJ-5216 | |
| | | | Yellow/red | A3SJ-5217 | |
| | | | Blue/green | A3SJ-5218 | |
| | | | Yellow/green | A3SJ-5219 | |
| | | | Yellow/blue | A3SJ-5220 | |
| | One-color 2-split screen | | White/white | A3SJ-5221 | – |
| | | | Red/red | A3SJ-5222 | |
| | | | Green/green | A3SJ-5223 | |
| | | | Blue/blue | A3SJ-5224 | |
| | | | Yellow/yellow | A3SJ-5225 | |

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 12. ■ Dimensions: Refer to page 14.
■ Accessories: Refer to pages 10 to 11.

## 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 |

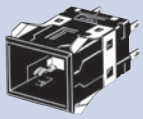
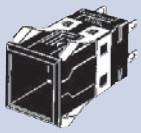
Note: The A3SJ (M2SJ) requires two LEDs for each Switch. The A3SA (M2SA) requires one LED.

#### Incandescent Lamp

| Lamp type / Operating voltage | Standard lamp | Low-voltage lamp |
|---|---|---|
| 5 VAC/VDC | SLL-06 | SLL-06H |
| 12 VAC/VDC | SLL-14 | SLL-14H |
| 24 VAC/VDC | SLL-28 | SLL-28H |

Note: The low-voltage lamp has an advantage in that it generates less heat.

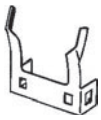
### Switch (common to both LED models and incandescent lamp-lighted models)

| Contact type | | Number of outputs | Appearance / Operation | Rectangular models  | 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.<br>• 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 | A3SJ-8060 | A3SA-7060 | |
| | | 2 | Momentary operation | A3SJ-8070 | A3SA-7070 | |
| | | | Alternate operation | A3SJ-8080 | A3SA-7080 | |

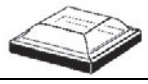
# Ordering Information

## 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).<br>Mount Short Barriers horizontally.<br>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.<br>• 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

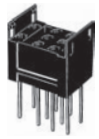
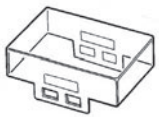
| Name | Appearance | Classification | Model | Application precautions |
|---|---|---|---|---|
| Barrier |  | Short Edge Barriers (1 pair) | **A3SA-4001** | The purpose of the Barrier is to prevent malfunctioning and to improve design image of the mounting panel. |
| | | Short Intermediate Barrier | **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.<br>• Cap material: Vinyl chloride |

■ Accessory mounting: Refer to page 19.

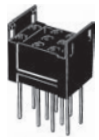
# Ordering Information

## 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.<br>• If LEDs are to be used, use a color cap that matches the LED color.<br>• The blue color cap is only for incandescent lamps. |
| | | White | | **A3SJ-5601** | |
| | | Red | | **A3SJ-5602** | |
| | | Green | | **A3SJ-5603** | |
| | | Blue | | **A3SJ-5604** | |
| | | Yellow | | **A3SJ-5605** | |
| |  | Transparent | 2-split screen | **A3SJ-5630** | |
| | | White | | **A3SJ-5631** | |
| | | Red | | **A3SJ-5632** | |
| | | Green | | **A3SJ-5633** | |
| | | Blue | | **A3SJ-5634** | |
| | | 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.<br>• 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. Legend plates cannot be used, however, with Displays for incandescent lamps. |
| | | 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 19.

# 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);<br>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 |

### Incandescent Lamp

| Applied voltage | Rated voltage | Standard lamp | Low-power lamp |
|---|---|---|---|
| | | Rated current | Rated current |
| 5 VAC/VDC | 6 VAC/VDC | 200 mA | 100 mA |
| 12 VAC/VDC | 14 VAC/VDC | 80 mA | 40 mA |
| 24 VAC/VDC | 28 VAC/VDC | 40 mA | 25 mA |

## Characteristics

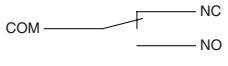
| | | |
|---|---|---|
| Operating frequency | Mechanical | Momentary operation models: 120 operations/min max. *1 |
| | Electrical | 20 operations/min max. |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) |
| Dielectric strength | Between terminals of same polarity | 1,000 VAC, 50/60 Hz for 1 minute |
| | 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 (1 ms max.) |
| Shock resistance | Destruction | 500 m/s² max. |
| | Malfunction | 200 m/s² max. (1 ms max.) |
| Life expectancy | Mechanical | Momentary operation models: 1,000,000 operations min.<br>Alternate operation models: 100,000 operations min.<br>(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<br>(with no icing or condensation) |
| Ambient operating humidity | | 35% to 85% RH |
| Ambient storage temperature | | −25 to 65°C<br>(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 incandescent lamp or LED lamp mounted.

## 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 |

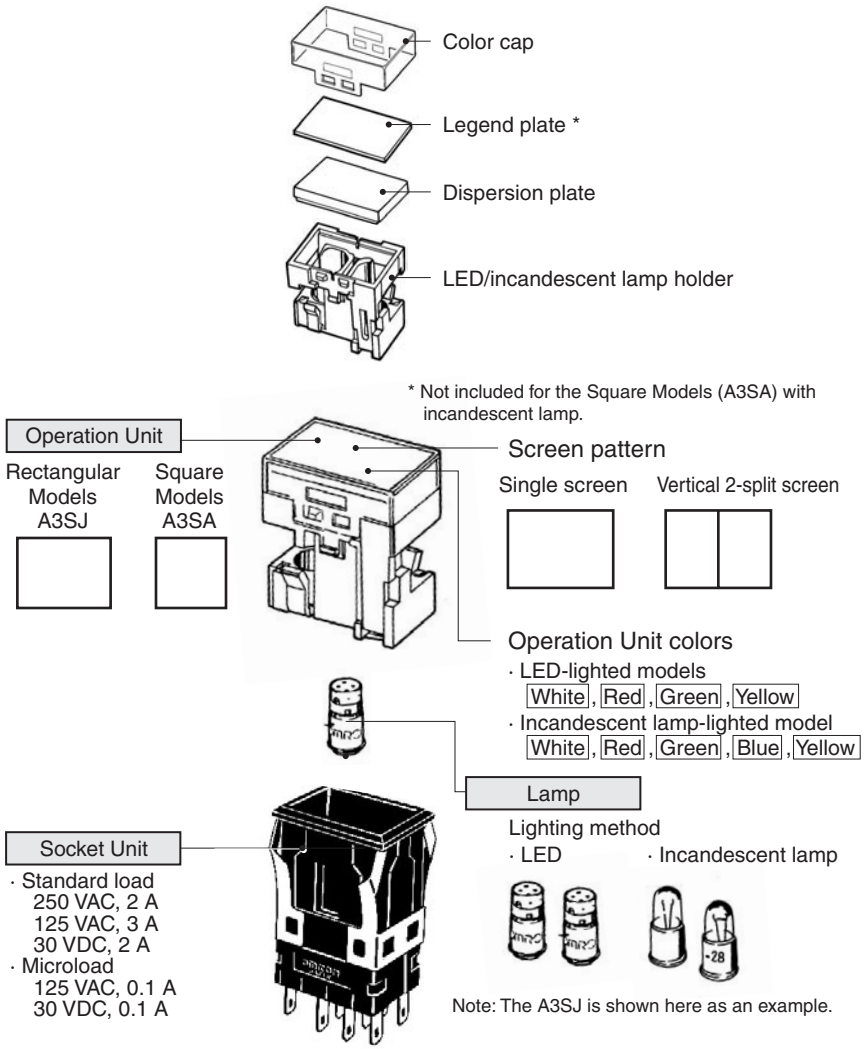
## Contact Form

| Name | Contact Form |
|---|---|
| Double-throw contacts |  |

# Nomenclature

## Model Structure

### Operation Unit Structure

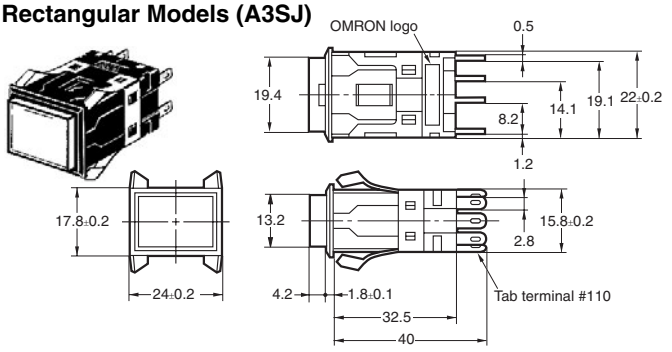


## Dimensions

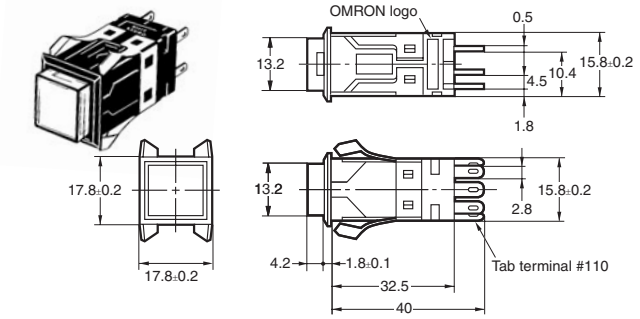
The Dimension shows 2-switch outputs.

(Unit: mm)

### Rectangular Models (A3SJ)



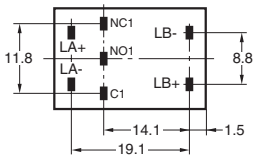
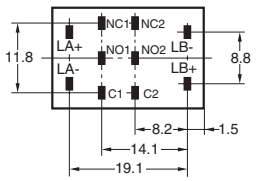
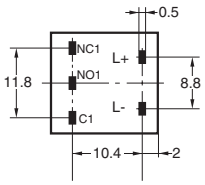
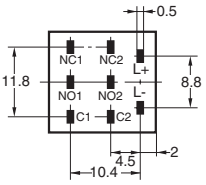

### Square Models (A3SA)




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.)

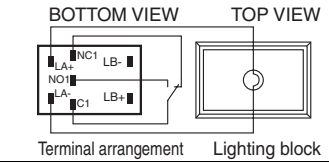
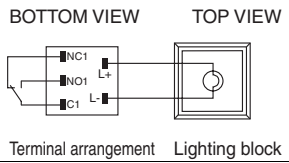
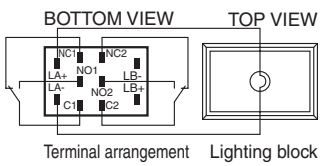
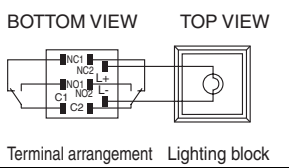
| Rectangular Models (A3SJ) | | Square Models (A3SA) | |
|---|---|---|---|
| **SPDT** | **DPDT** | **SPDT** | **DPDT** |
|  |  |  |  |



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

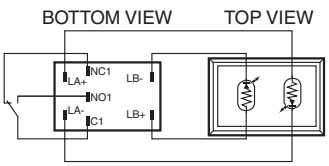
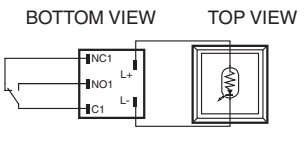
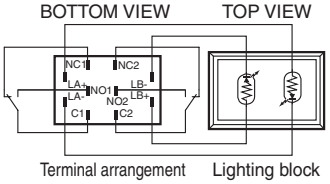
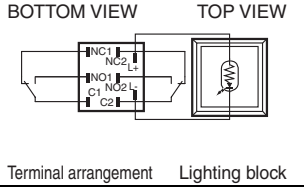
## Contact Type

**Incandescent Lamp-lighted Models** (The terminal arrangements are the same as for the LED-lighted models.)

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



**LED Lamp-lighted Models**

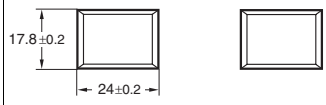
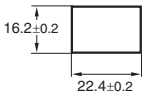
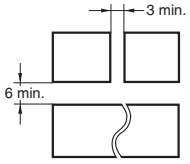
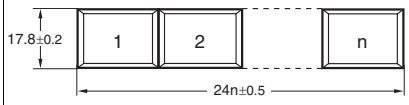
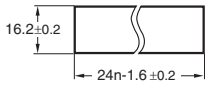
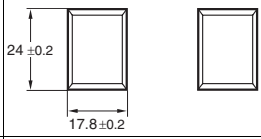
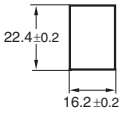
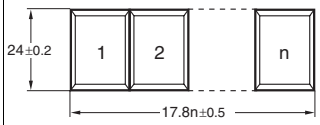
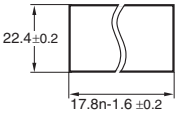
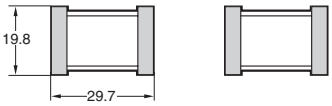
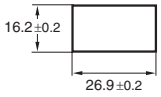
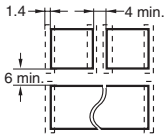
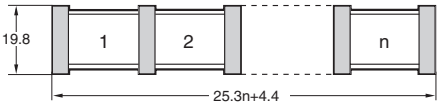
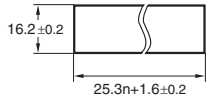
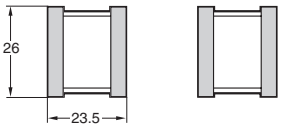
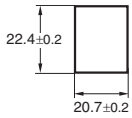
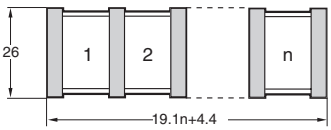
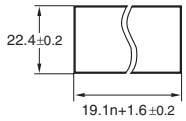
| Type / Model | Rectangular Models (A3SJ) | Square Models (A3SA) |
|---|---|---|
| **SPDT** |  |  |
| **DPDT** |  |  |

## Dimensions

(Unit: mm)

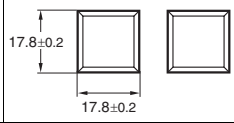
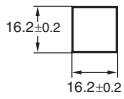
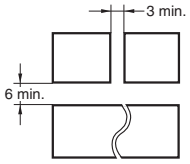
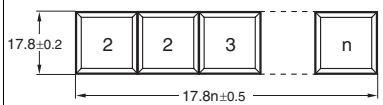
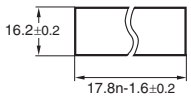
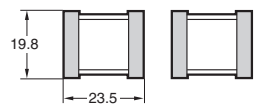
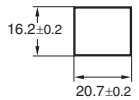
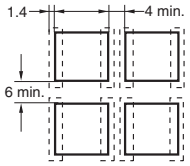
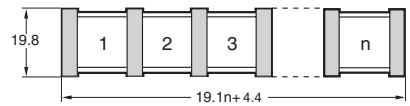
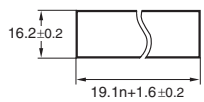
### Panel Cutout (If using a Switch Guard or Seal Cover, refer to the panel cutout diagrams on page 17.)

**Rectangular Models (A3SJ)**

| Classification | | Mounting design | Panel cutout | Remarks |
|---|---|---|---|---|
| Flange mount models | Individual mounting, horizontal |  |  | Panel cutout spacing between rows of Units:<br>  |
| | 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:<br>  |
| | 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:<br>  |
| | Multiple mounting |  |  | |
| Barrier mount models | Individual mounting |  |  | Panel cutout spacing between rows of Units:<br>  |
| | 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.

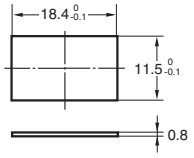
## Dimensions

(Unit: mm)

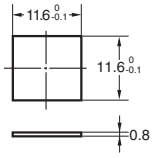
### Accessory Mounting Dimensions

**Legend Plate**

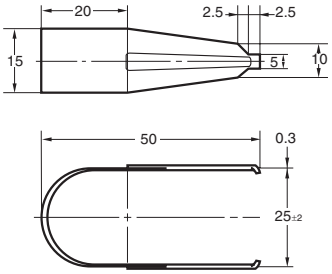
**Rectangular Models**
**A3SJ-4203/-4204**




**Square Models**
**A3SA-4203/-4204**




**Extractor**
**A3PJ-5080**

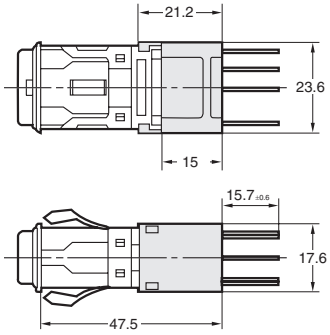



Note: Made from stainless steel.

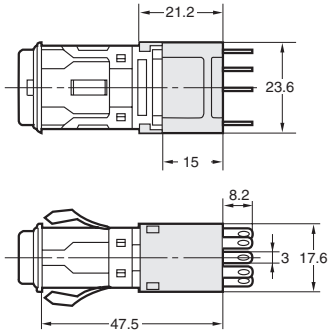
### Socket-mounting Dimensions

**Rectangular Models**

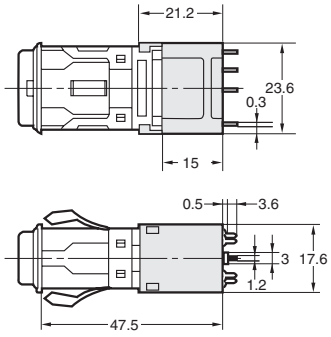
**Wire-wrap Terminals**
**A3SJ-4104**



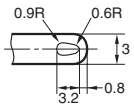

**Solder Terminals**
**A3SJ-4106**



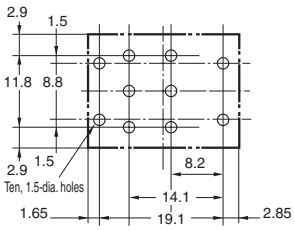

**PCB Terminals**
**A3SJ-4105**




**Terminal Hole Dimensions**




**PCB Cutout**
**(Bottom View)**



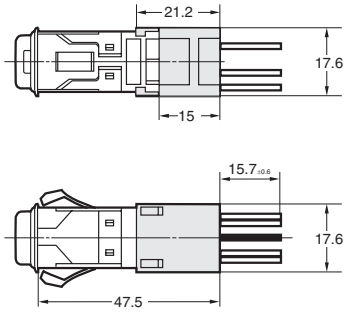
## Dimensions

(Unit: mm)

### Square Models

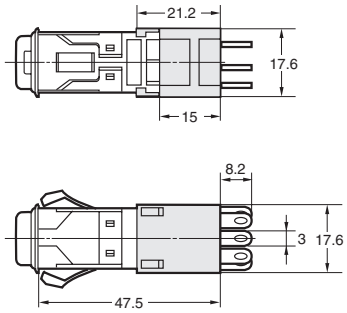
#### Wire-wrap Terminals

**A3SA-4101**



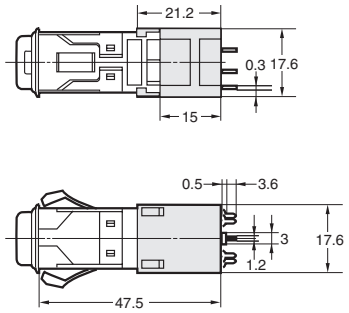

#### Solder Terminals

**A3SA-4103**

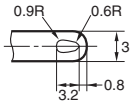



#### PCB Terminals

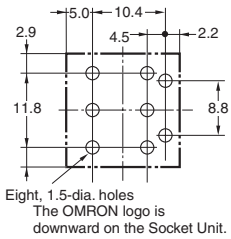
**A3SA-4102**




#### Terminal Hole Dimensions



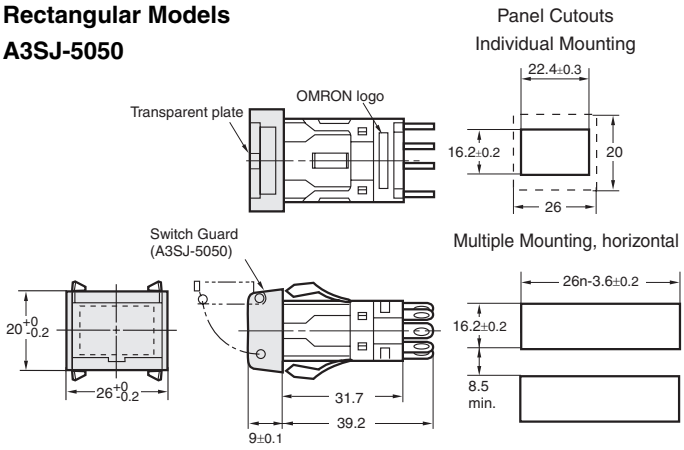

#### PCB Cutout (bottom view)




### Switch and Guard Mounting Dimensions

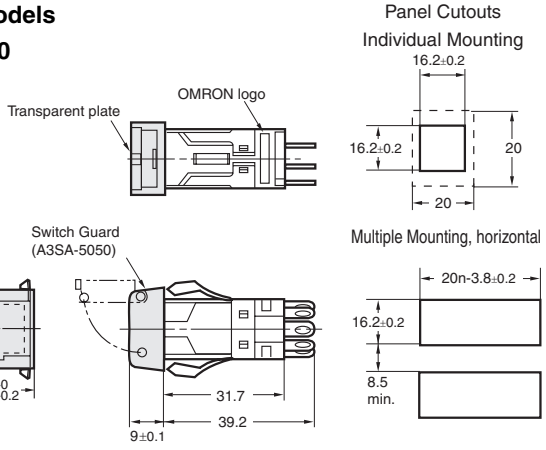
#### Rectangular Models

**A3SJ-5050**




#### Square Models

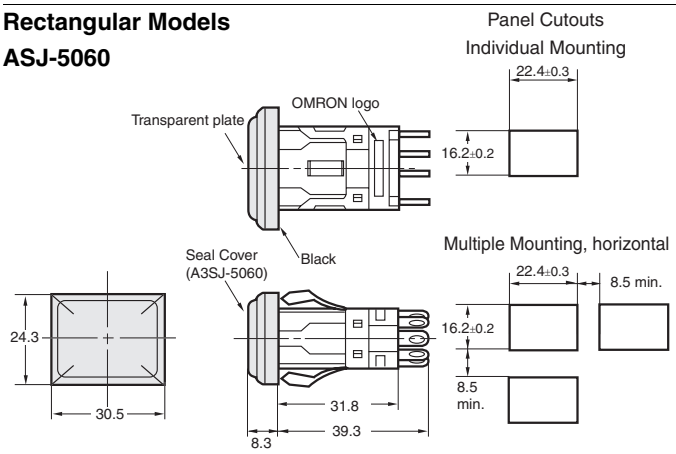
**A3SA-5050**




### Seal Cover Mounting Dimensions

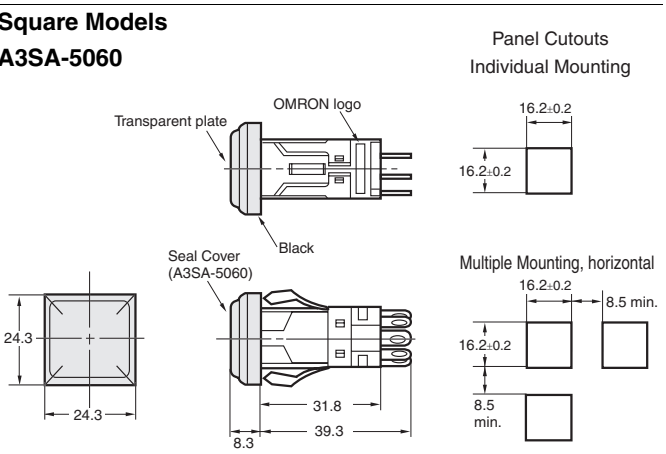
#### Rectangular Models

**ASJ-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*.**

## 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

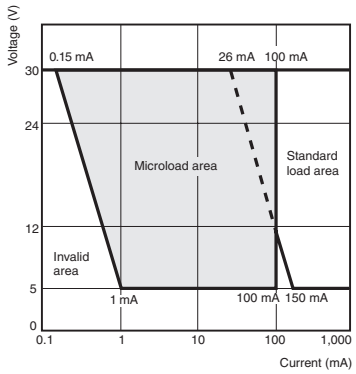
- For wiring, use a wire size that is appropriate for the applied voltage and the supplied current. Be sure to perform soldering according to the following conditions. Using the Switch with incomplete soldering may result in errors and heat, which may cause fire.
  (1) Manual soldering: Use a soldering 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 $10^{-4}$/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 |

### Incandescent Lamp

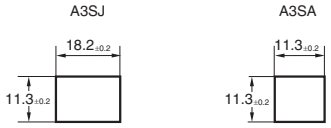
- It is advantageous in terms of service life and heat generation to apply 80% of the rated voltage (operating voltage) to the incandescent lamp.

### 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

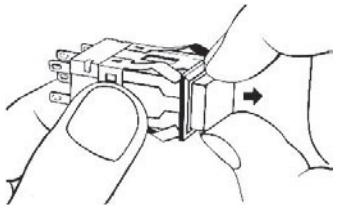
- If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

## Application

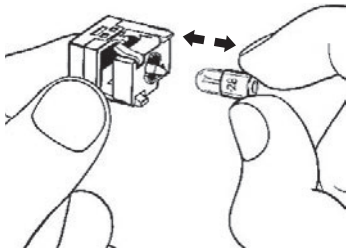
### Replacing Incandescent and LED Lamps and Panel Mounting

#### 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.

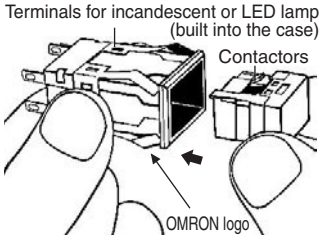


#### Mounting and Replacing Incandescent and LED Lamps



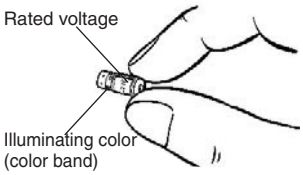
#### Inserting the Display into the Socket Unit

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

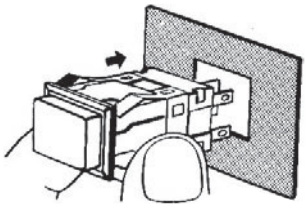
The LED voltage rating is indicated on the base. Use the LED within ±5% of voltage range.




#### Mounting to the Switch Panel

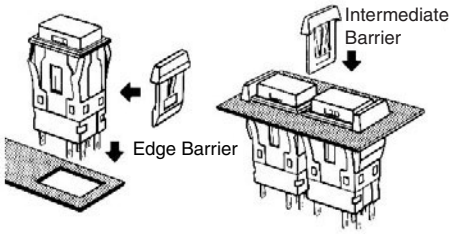
Mount the Socket Unit to the panel by inserting it from the front of the panel.

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.

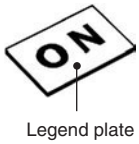



### Inscribing Legend Plate Characters

#### 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.

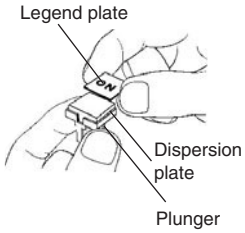



- When replacing the legend plate, be careful that the coil spring in the Display does not become removed.

### 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.

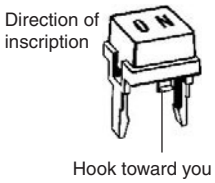



(Incandescent Lamp)

(2) Inscribe the surface of the plunger, and then coat the surface.

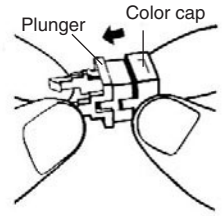
**Lighted Square Pushbutton Switches**

Assemble models A3SA-5301 to A3SA-5305 so that the hook is toward you.




Note: Legend plates cannot be used with A3SA Displays for incandescent lamps.

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

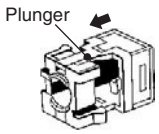



(4) Push in the color in the direction of the arrow to assemble the plunger and the lamp holder.

**Lighted Square Pushbutton Switches**

A3SA

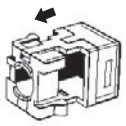
Perform the assembly so that the wide groove and the hook on the plunger are in the same direction.




**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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2010.10

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