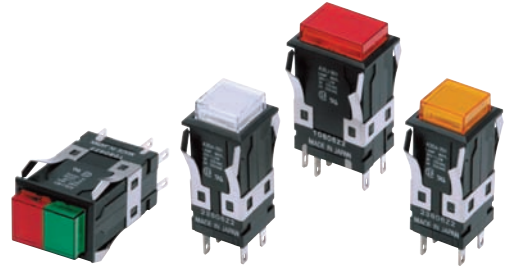


## Pushbutton Switch Series with Square 40-mm Body

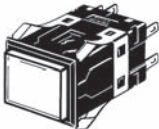
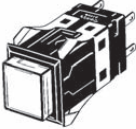
- Combines miniature design with distinct but soft sense of operation.
- Easy panel mounting from the front and simple lamp replacement without tools.



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

## List of Models

### Lighted Pushbutton Switches

| Appearance                                                                                        | Model |
|---------------------------------------------------------------------------------------------------|-------|
| Rectangular<br> | A3SJ  |
| Square<br>     | A3SA  |

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

■ Dimensions: Refer to page 13.

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

**(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<br>                                        |
| 3      | Vertical 2-split screen<br><br>(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        |

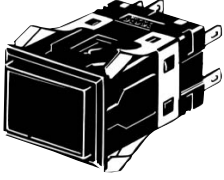
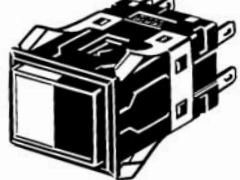
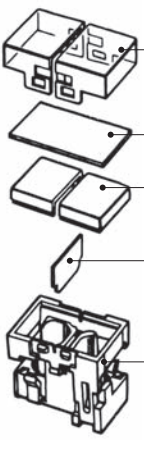
**(5) Operation Unit Color For LED**

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

\* The color cap is transparent.

**Number of Built-in LEDs**

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

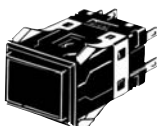
| Type                                                                                                                                                                                                                                                                                                             | Structure of Split-screen Operation Unit                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>Single screen<br/>(Rectangular models and square models)</p>  <p>Vertical 2-split screen<br/>(Rectangular models only)</p> <p>A3SJ</p> |  <ul style="list-style-type: none"> <li>Color cap</li> <li>Legend plate</li> <li>Dispersion plate</li> <li>Light-separation plate (2-split screen only)</li> <li>LED lamp holder</li> </ul> |

## 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



Single screen

1

Vertical 2-split screen

1

2

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

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

### Microloads

#### Single screen

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

#### Vertical 2-split screen

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

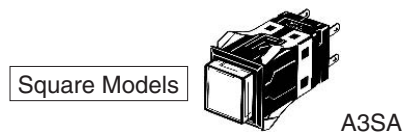
Individual models: Refer to pages 6 to 8.  
(The Pushbutton, Lamp, and Switch can be ordered separately.)

■ 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



Single  
screen 

Single screen

| Output |     | Contact type<br>Operation | Standard load (250 VAC, 2 A; 125 VDC 0.4 A) |                                       | Operation Unit<br>color symbol                                                                                       |
|--------|-----|---------------------------|---------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|        |     |                           | Momentary operation<br>(Self-resetting)     | Alternate operation<br>(Self-holding) |                                                                                                                      |
| SPDT   | LED | 5 VDC                     | A3SA-90A1-05E□                              | A3SA-90B1-05E□                        | Enter the desired color<br>symbol for the Pushbutton<br>in □.<br><br>R (Red)<br>Y (Yellow)<br>G (Green)<br>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 |     | Contact type<br>Operation | Microload<br>(125 VAC, 0.1 A; 30 VDC 0.1 A) | Operation Unit<br>color symbol                                                                                       |
|--------|-----|---------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
|        |     |                           | Momentary operation<br>(Self-resetting)     |                                                                                                                      |
| SPDT   | LED | 5 VDC                     | A3SA-90E1-05E□                              | Enter the desired color<br>symbol for the Pushbutton<br>in □.<br><br>R (Red)<br>Y (Yellow)<br>G (Green)<br>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.)

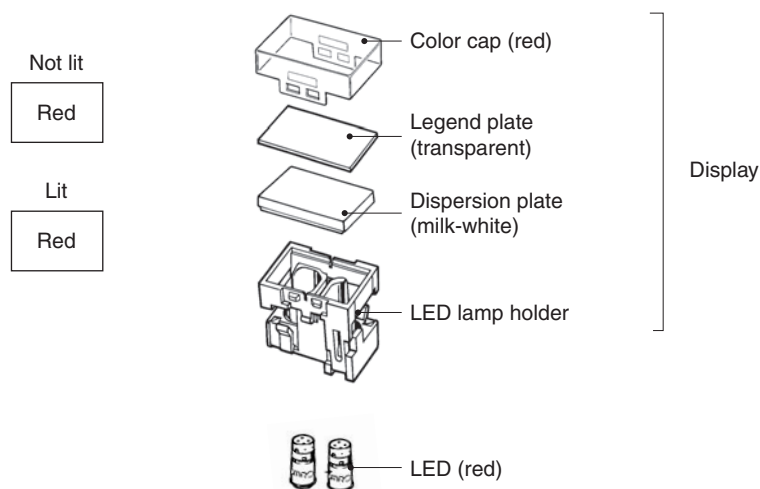
■ Specifications: Refer to page 11. ■ Dimensions: Refer to page 13.  
■ Accessories: Refer to pages 9 to 10.

## Ordering Information

### Illumination-only and Colored-illumination LED Models

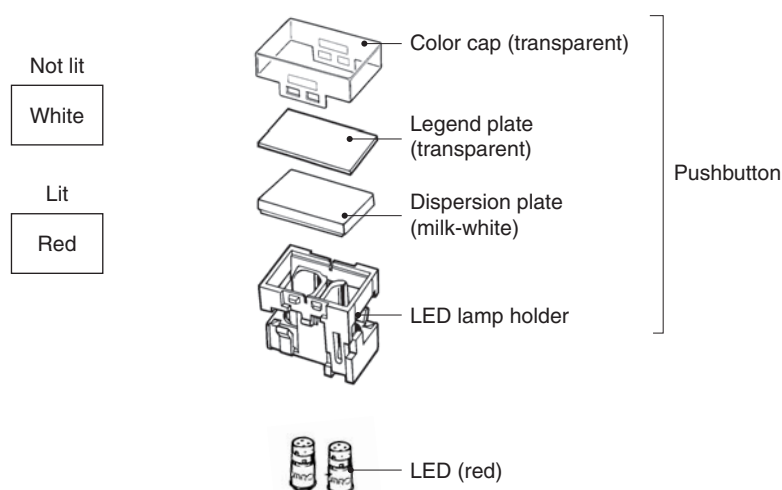
**Illumination only** describes LED models for which the screen color is the same whether the LED is lit or not. The screen simply becomes brighter when the LED lights.

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.

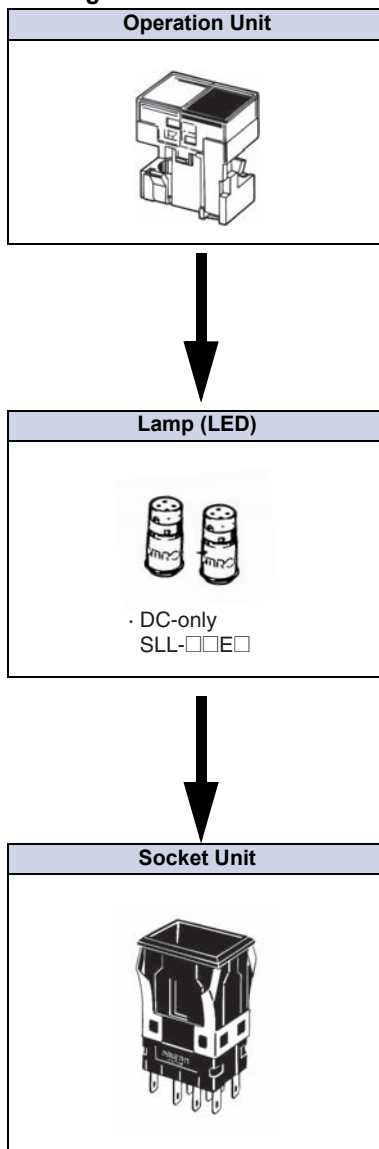
| Display (Operation Unit)                                                                              |                         |                  | LED                                                                                | Socket Unit                         |
|-----------------------------------------------------------------------------------------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

## 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



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.)

|                     |                                                                                   | Appearance    | Rectangular Models<br>(2 LEDs)         | Square Models<br>(1 LED)               |
|---------------------|-----------------------------------------------------------------------------------|---------------|----------------------------------------|----------------------------------------|
| Screen pattern      |                                                                                   | Display color | (transparent legend<br>plate built in) | (transparent legend<br>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<br>screen * | Standard<br>split<br>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<br>split<br>screen                                                        | Red/white     | A3SJ-5911                              | —                                      |
|                     |                                                                                   | Green/white   | A3SJ-5912                              |                                        |
|                     |                                                                                   | Green/red     | A3SJ-5915                              |                                        |
|                     |                                                                                   | Yellow/red    | A3SJ-5917                              |                                        |
|                     | One-color<br>2-split<br>screen                                                    | Yellow/green  | A3SJ-5919                              | —                                      |
|                     |                                                                                   | 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.

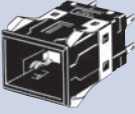
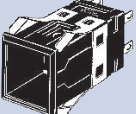
### Lamp

#### LED Lamp

| Operating voltage | 5 VDC           | 12 VDC          | 24 VDC          |
|-------------------|-----------------|-----------------|-----------------|
| Color             | 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)

|                       |                           |           | Appearance          | Rectan-<br>gular<br>models                                                        | Square<br>models                                                                   | Selection precautions                                                                                                                                                                                                                                                                                                                                        |
|-----------------------|---------------------------|-----------|---------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact type          | Number<br>of<br>outputs   | Operation |                     |  |  |                                                                                                                                                                                                                                                                                                                                                              |
| Stan-<br>dard<br>load | Silver<br>contacts        | 1         | Momentary operation | A3SJ-8010                                                                         | A3SA-7010                                                                          | <ul style="list-style-type: none"> <li>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.</li> <li>Momentary operation is self-resetting, and alternate operation is self-holding (i.e., push-on, push-off).</li> </ul> |
|                       |                           |           | Alternate operation | A3SJ-8020                                                                         | A3SA-7020                                                                          |                                                                                                                                                                                                                                                                                                                                                              |
|                       |                           | 2         | Momentary operation | A3SJ-8030                                                                         | A3SA-7030                                                                          |                                                                                                                                                                                                                                                                                                                                                              |
|                       |                           |           | Alternate operation | A3SJ-8040                                                                         | A3SA-7040                                                                          |                                                                                                                                                                                                                                                                                                                                                              |
| Micro-<br>load        | Gold<br>alloy<br>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) | <b>A3SA-4001</b> | 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  | <b>A3SA-4002</b> |                                                                                                                                                                                                                                                                 |
|                     |                                                                                   | Long edge Barriers (1 pair)  | <b>A3SJ-4003</b> |                                                                                                                                                                                                                                                                 |
|                     |                                                                                   | Long intermediate Barriers   | <b>A3SJ-4004</b> |                                                                                                                                                                                                                                                                 |
| Switch Guard        |  | —                            | <b>A3SJ-5050</b> | Cannot be used with Barrier or Seal Cover.                                                                                                                                                                                                                      |
| Seal Cover          |  | —                            | <b>A3SJ-5060</b> | <ul style="list-style-type: none"> <li>Cannot be used with Barrier or Switch Guard.</li> <li>Cap material: Vinyl chloride</li> </ul>                                                                                                                            |
| Long Mounting Plate |  | 1 pair                       | <b>A3SJ-3002</b> | 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

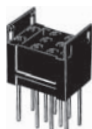
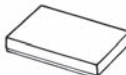
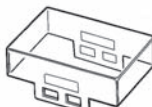
| Name         | Appearance                                                                          | Classification               | Model            | Application precautions                                                                                                              |
|--------------|-------------------------------------------------------------------------------------|------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Barrier      |   | Short Edge Barriers (1 pair) | <b>A3SA-4001</b> | The purpose of the Barrier is to prevent malfunctioning and to improve design image of the mounting panel.                           |
|              |                                                                                     | Short Intermediate Barrier   | <b>A3SA-4002</b> |                                                                                                                                      |
| Switch Guard |  | —                            | <b>A3SA-5050</b> | Cannot be used with Barrier or Seal Cover.                                                                                           |
| Seal Cover   |  | —                            | <b>A3SA-5060</b> | <ul style="list-style-type: none"> <li>Cannot be used with Barrier or Switch Guard.</li> <li>Cap material: Vinyl chloride</li> </ul> |

■ Accessory mounting: Refer to page 18.

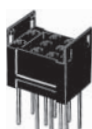
## Ordering Information

### 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.<br>• 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.<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.                                                                                           |
|                  |                                                                                     | 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);<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                       |

### 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/s <sup>2</sup> max.                                                                                                                                             |
|                                 | Malfunction                                               | 200 m/s <sup>2</sup> max. *3                                                                                                                                          |
| 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 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                     |

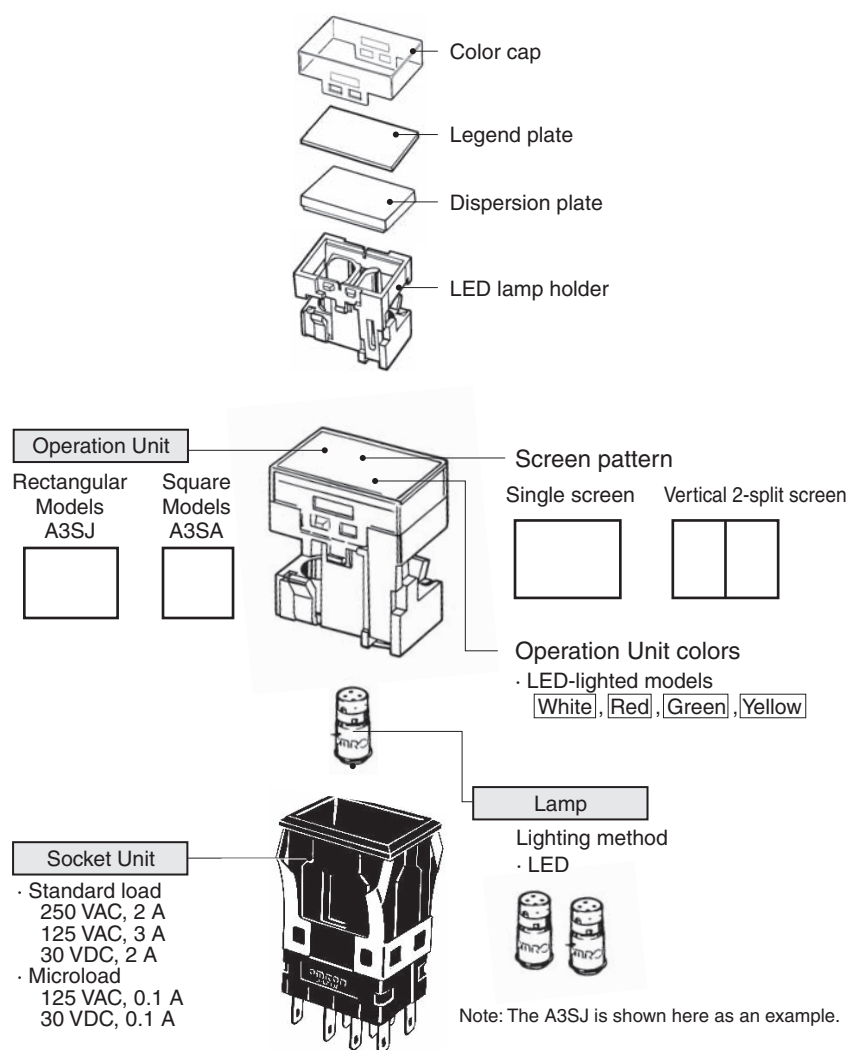
### Contact Form

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

## Nomenclature

### Model Structure

#### Operation Unit Structure

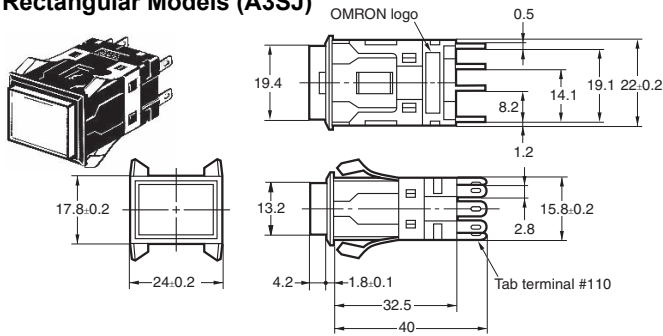


## Dimensions

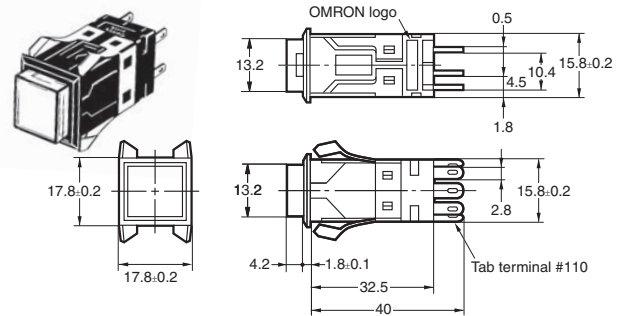
The Dimension shows 2-switch outputs.

(Unit: mm)

### Rectangular Models (A3SJ)



### Square Models (A3SA)



Note: Unless specified, a tolerance of  $\pm 0.4$  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 | SPDT  |                           |                      |
|      |       |                           |                      |

## Dimensions

**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<br> |              | Panel cutout spacing between rows of Units:<br> |
|                      | Multiple mounting, horizontal<br>   |              |                                                 |
|                      | Individual mounting, vertical<br>   |              |                                                 |
|                      | Multiple mounting, vertical<br>     |              |                                                 |
| Barrier mount models | Individual mounting, horizontal<br> |              | Panel cutout spacing between rows of Units:<br> |
|                      | Multiple mounting, horizontal<br>   |              |                                                 |
|                      | Individual mounting, vertical<br>   |              |                                                 |
|                      | Multiple mounting, vertical<br>     |              |                                                 |

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

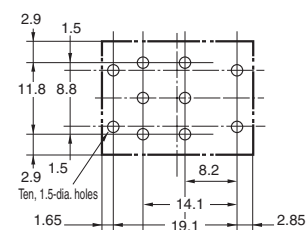
### Square Models (A3SA)

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

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

## Accessory Mounting Dimensions

Note: Made from stainless steel.

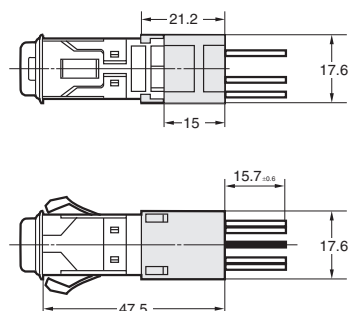


## Dimensions

### Square Models

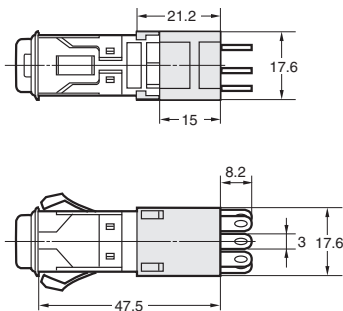
#### Wire-wrap Terminals

##### A3SA-4101



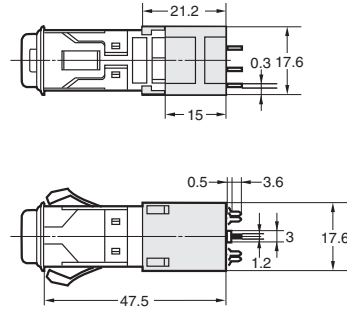
#### Solder Terminals

##### A3SA-4103

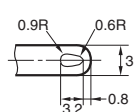


#### PCB Terminals

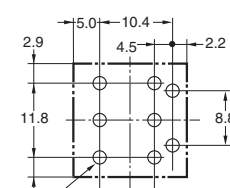
##### A3SA-4102



#### Terminal Hole Dimensions



#### PCB Cutout (bottom view)

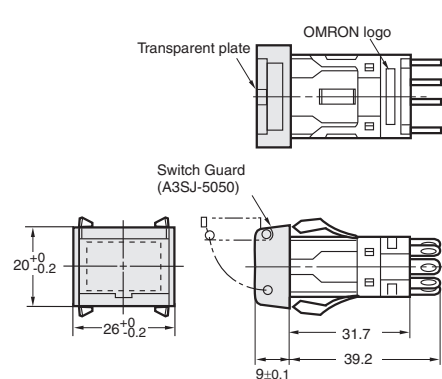


Eight, 1.5-dia. holes  
The OMRON logo is downward on the Socket Unit.

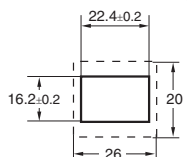
### Switch and Guard Mounting Dimensions

#### Rectangular Models

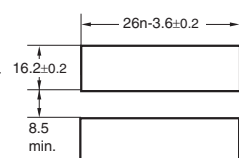
##### A3SJ-5050



#### Panel Cutouts Individual Mounting

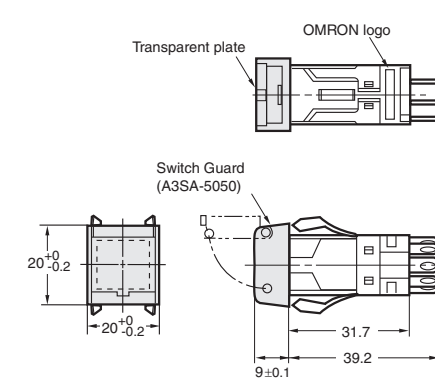


#### Multiple Mounting, horizontal

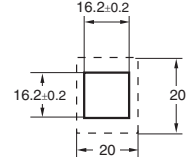


#### Square Models

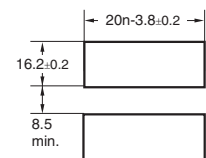
##### A3SA-5050



#### Panel Cutouts Individual Mounting



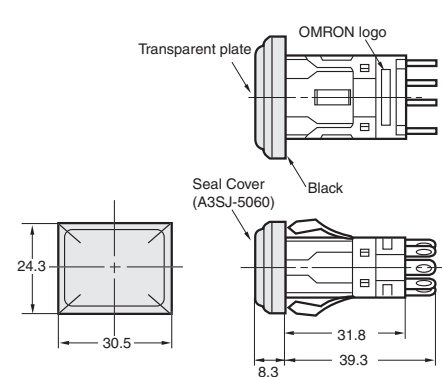
#### Multiple Mounting, horizontal



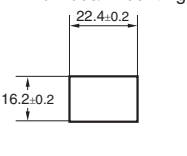
### Seal Cover Mounting Dimensions

#### Rectangular Models

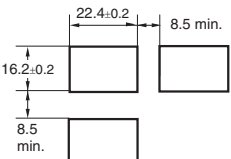
##### A3SJ-5060



#### Panel Cutouts Individual Mounting

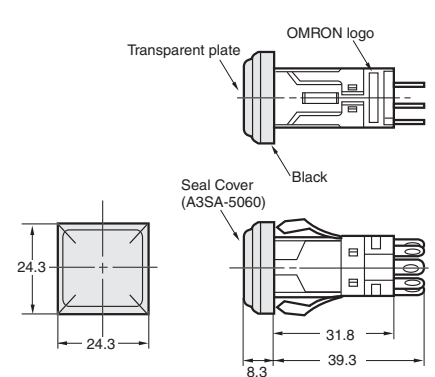


#### Multiple Mounting, horizontal

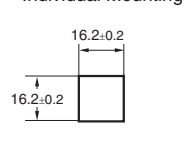


#### Square Models

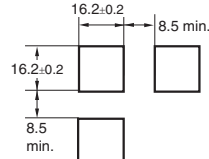
##### A3SA-5060



#### Panel Cutouts Individual Mounting



#### Multiple Mounting, horizontal



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



## Safety Precautions

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

### 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.
  - Manual soldering: Use a soldering iron with a tip temperature of 350°C maximum and complete soldering within 3 seconds.
  - 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

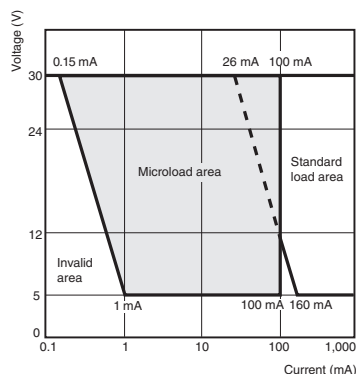
- Do not use in locations that are subject to dust, oil, or metal fillings, because these may penetrate the interior the Switch and cause malfunction.

#### 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% ( $\lambda 60$ ) (conforming to JIS C5003).

The equation  $\lambda 60 = 0.5 \times 10^{-6}/\text{time}$  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.

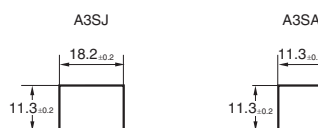
| Rated voltage | Built-in limiting resistance |
|---------------|------------------------------|
| 5 VDC         | 39 $\Omega$                  |
| 12 VDC        | 270 $\Omega$                 |
| 24 VDC        | 1300 $\Omega$                |

#### 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

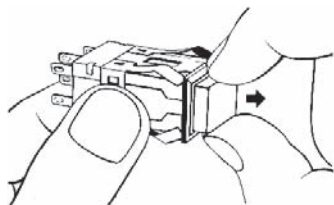
- If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

## Application

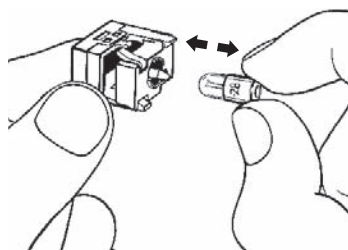
### Replacing LED Lamps and Panel Mounting

#### 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.

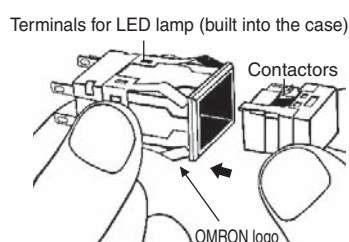


#### Mounting and Replacing LED Lamps



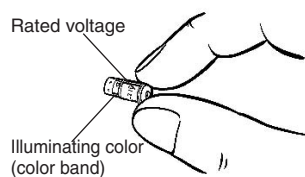
#### Inserting the Display into the Socket Unit

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

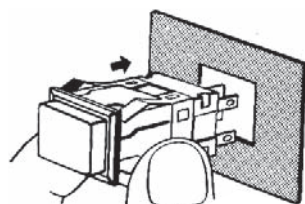
The LED voltage rating is indicated on the base. Use the LED within  $\pm 5\%$  of voltage range.



#### Mounting to the Switch Panel

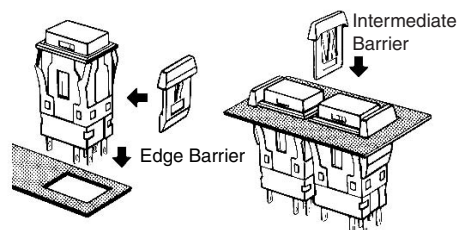
Mount the Socket Unit to the panel by inserting it from the front of the panel.

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.



Legend plate

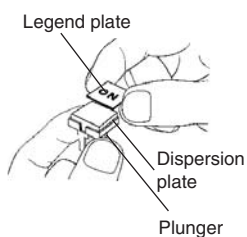
- When replacing the legend plate, be careful that the coil spring in the Display does not become removed.

## Assembling the Legend Plate (Plunger)

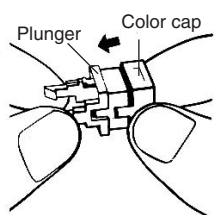
### A3SA (M2SA)

(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.

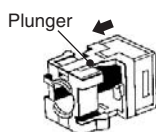


- (3) Push in the color in the direction of the arrow to assemble the plunger and the lamp holder.

### Lighted Square Pushbutton Switches

A3SA

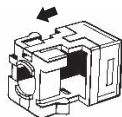
Perform the assembly so that the wide groove and the hook on the plunger are in the same direction.



### Indicator

M2SA

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



## Terms and Conditions Agreement

### Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

### Warranties.

(a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.

(b) Limitations. OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCTS. BUYER ACKNOWLEDGES THAT IT ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE.

Omron further disclaims all warranties and responsibility of any type for claims or expenses based on infringement by the Products or otherwise of any intellectual property right. (c) Buyer Remedy. Omron's sole obligation hereunder shall be, at Omron's election, to (i) replace (in the form originally shipped with Buyer responsible for labor charges for removal or replacement thereof) the non-complying Product, (ii) repair the non-complying Product, or (iii) repay or credit Buyer an amount equal to the purchase price of the non-complying Product; provided that in no event shall Omron be responsible for warranty, repair, indemnity or any other claims or expenses regarding the Products unless Omron's analysis confirms that the Products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification. Return of any Products by Buyer must be approved in writing by Omron before shipment. Omron Companies shall not be liable for the suitability or unsuitability or the results from the use of Products in combination with any electrical or electronic components, circuits, system assemblies or any other materials or substances or environments. Any advice, recommendations or information given orally or in writing, are not to be construed as an amendment or addition to the above warranty.

See <http://www.omron.com/global/> or contact your Omron representative for published information.

### Limitation on Liability: Etc.

OMRON COMPANIES SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE OR STRICT LIABILITY.

Further, in no event shall liability of Omron Companies exceed the individual price of the Product on which liability is asserted.

### Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

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

### Programmable Products.

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

### Performance Data.

Data presented in Omron Company websites, catalogs and other materials is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of Omron's test conditions, and the user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

### Change in Specifications.

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

### Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.