

## Lighted Pushbutton Switch

## A3C

### Cylindrical 12-dia. Series with Superb Operability, High Visibility, and Compact Housing

- Three models of pushbutton units (round, square, and rectangular), two types of light-emitting elements (LED and lamp), and two types of switch units (switching general-purpose and microcurrent/voltage loads) available.
- Models that can be used as an indicator also available.
- Requires only 20 mm mounting depth
- Efficiency in wiring improved by terminals arranged on the same surface.
- All LEDs, lamps, lenses, and legends replaceable without tools
- UL (E41515) and CSA (LR45258-31) approved

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-34970699  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)

## Ordering Information

### Lighted Type

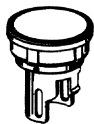
When placing your order, specify the individual component part model numbers of the pushbutton unit, LED, lamp, and switch unit, as listed in the ordering tables below.



### Non-lighted Type

When placing your order, specify the model numbers of the pushbutton and switch units.

#### Pushbutton Unit



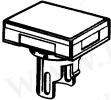
A3Cj-501j

#### Switch Unit



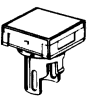
A3Cj j-7j j j

## Lighted Pushbutton Unit LED

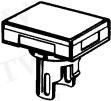
| Button color | Rectangular                                                                       | Square                                                                            | Round                                                                             |
|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|              |  |  |  |
| Red          | A3CJ-500R                                                                         | A3CA-500R                                                                         | A3CT-500R                                                                         |
| Yellow       | A3CJ-500Y                                                                         | A3CA-500Y                                                                         | A3CT-500Y                                                                         |
| Green        | A3CJ-500GY                                                                        | A3CA-500GY                                                                        | A3CT-500GY                                                                        |
| White        | A3CJ-500W                                                                         | A3CA-500W                                                                         | A3CT-500W                                                                         |

**Note:** With the exception of green, all pushbutton units can be used with either LED or incandescent lamps. Since the hue of green changes with an incandescent light source, use the green LED light source listed elsewhere.

## Non-lighted Type

| Button color | Rectangular                                                                         | Square                                                                              | Round                                                                               |
|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              |  |  |  |
| Red          | A3CJ-500R                                                                           | A3CA-500R                                                                           | A3CT-500R                                                                           |
| Yellow       | A3CJ-500Y                                                                           | A3CA-500Y                                                                           | A3CT-500Y                                                                           |
| Green        | A3CJ-500G                                                                           | A3CA-500G                                                                           | A3CT-500G                                                                           |
| White        | A3CJ-500W                                                                           | A3CA-500W                                                                           | A3CT-500W                                                                           |
| Blue         | A3CJ-500A                                                                           | A3CA-500A                                                                           | A3CT-500A                                                                           |
| Black        | A3CJ-500B                                                                           | A3CA-500B                                                                           | A3CT-500B                                                                           |

## Incandescent Lamp

| Button color | Rectangular                                                                       | Square                                                                            | Round                                                                             |
|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|              |  |  |  |
| Red          | A3CJ-500R                                                                         | A3CA-500R                                                                         | A3CT-500R                                                                         |
| Yellow       | A3CJ-500Y                                                                         | A3CA-500Y                                                                         | A3CT-500Y                                                                         |
| Green        | A3CJ-500G                                                                         | A3CA-500G                                                                         | A3CT-500G                                                                         |
| White        | A3CJ-500W                                                                         | A3CA-500W                                                                         | A3CT-500W                                                                         |
| Blue         | A3CJ-500A                                                                         | A3CA-500A                                                                         | A3CT-500A                                                                         |

## Indicator (Same as A3B)

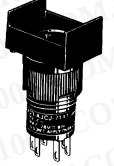
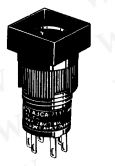
### LED

| Color  | Rated voltage |          |          |
|--------|---------------|----------|----------|
|        | 5 VDC         | 12 VDC   | 24 VDC   |
| Red    | A3B-005R      | A3B-012R | A3B-024R |
| Yellow | A3B-005Y      | A3B-012Y | A3B-024Y |
| Green  | A3B-005G      | A3B-012G | A3B-024G |
| White  | A3B-005W      | A3B-012W | A3B-024W |

### Incandescent Lamp

| Rated voltage | 6 VDC   | 14 VDC  | 28 VDC  |
|---------------|---------|---------|---------|
| Model         | A3B-006 | A3B-014 | A3B-028 |

## Switch Unit

| Configuration                   | Contact             | Switch action | Terminal | Degree of protection: IP00                                                           |                                                                                       |                                                                                       |  |
|---------------------------------|---------------------|---------------|----------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|
|                                 |                     |               |          | Rectangular                                                                          | Square                                                                                | Round                                                                                 |  |
|                                 |                     |               |          |  |  |  |  |
| General purpose                 | SPST-NO+<br>SPST-NC | Momentary     | Solder   | A3CJ-7011                                                                            | A3CA-7011                                                                             | A3CT-7011                                                                             |  |
|                                 |                     | Alternate     |          | A3CJ-7021                                                                            | A3CA-7021                                                                             | A3CT-7021                                                                             |  |
| Micro-load                      |                     | Momentary     | Solder   | A3CJ-7111                                                                            | A3CA-7111                                                                             | A3CT-7111                                                                             |  |
|                                 |                     |               | PCB      | A3CJ-7112                                                                            | A3CA-7112                                                                             | A3CT-7112                                                                             |  |
|                                 |                     | Alternate     | Solder   | A3CJ-7121                                                                            | A3CA-7121                                                                             | A3CT-7121                                                                             |  |
|                                 |                     |               | PCB      | A3CJ-7122                                                                            | A3CA-7122                                                                             | A3CT-7122                                                                             |  |
| For indication only (no switch) |                     |               | Solder   | M2CJ-7001                                                                            | M2CA-7001                                                                             | M2CT-7001                                                                             |  |
|                                 |                     |               | PCB      | M2CJ-7002                                                                            | M2CA-7002                                                                             | M2CT-7002                                                                             |  |

# Specifications

## Contact Ratings

| Model                                 | Item                           |                   |
|---------------------------------------|--------------------------------|-------------------|
|                                       | AC resistive load              | DC resistive load |
| General-purpose load                  | 0.5 A, 250 VAC<br>1 A, 125 VAC | 1 A, 30 VDC       |
| Micro current/voltage load (see note) | 0.1 A, 125 VAC                 | 0.1 A, 30 VDC     |

**Note:** The minimum permissible load is 1 mA, 5 VDC.

## LED Ratings

| Rated voltage | Rated current | Operating voltage |
|---------------|---------------|-------------------|
| 5 VDC         | 30 mA         | 5 VDC±5%          |
| 12 VDC        | 15 mA         | 12 VDC±5%         |
| 24 VDC        | 10 mA         | 24 VDC±5%         |

## Lamp Ratings

| Rated voltage | Rated current | Operating voltage |
|---------------|---------------|-------------------|
| 6 V           | 60 mA         | 5 V               |
| 14 V          | 40 mA         | 12 V              |
| 28 V          | 24 mA         | 24 V              |

## Characteristics

|                              |                                                                                                                                                                                                                                                                                |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating frequency</b>   | Mechanical:<br>Momentary-action type: 120 operations per minute max.<br>Alternate-action type: 60 operations per minute max.<br>Electrical: 20 operations per minute max.                                                                                                      |
| <b>Insulation resistance</b> | 100 MΩ min. (at 500 VDC)                                                                                                                                                                                                                                                       |
| <b>Dielectric strength</b>   | 1,000 VAC, 50/60 Hz for 1 minute between terminals of same polarity<br>2,000 VAC, 50/60 Hz for 1 minute between terminals of different polarity and also between each terminal and ground<br>Vibration Mechanical/malfunction durability: 10 to 55 Hz, 1.5 mm double amplitude |
| <b>Shock</b>                 | Mechanical durability: 500 m/s <sup>2</sup> (approx. 50 G)<br>Malfunction durability: 150 m/s <sup>2</sup> (approx. 15 G)                                                                                                                                                      |
| <b>Ambient temperature</b>   | Operating: -10°C to 55°C                                                                                                                                                                                                                                                       |
| <b>Humidity</b>              | 35 to 85% RH                                                                                                                                                                                                                                                                   |
| <b>Life expectancy</b>       | Mechanical:<br>Momentary-action type: 1,000,000 operations min.<br>Alternate-action type: 100,000 operations min.<br>Electrical: 100,000 operations min.                                                                                                                       |
| <b>Weight</b>                | Approx. 5 g (see note)                                                                                                                                                                                                                                                         |

**Note:** The weight indicated here applies to the lighted type (SPST-NO+SPST-NC).

## Operating Characteristics

|                 |            |
|-----------------|------------|
| <b>OF max.</b>  | 250 g      |
| <b>RF min.</b>  | 30 g       |
| <b>TT</b>       | 3.5±0.5 mm |
| <b>LTA min.</b> | 0.5 mm     |
| <b>PT max.</b>  | 2.5 mm     |

## Approved by Standards

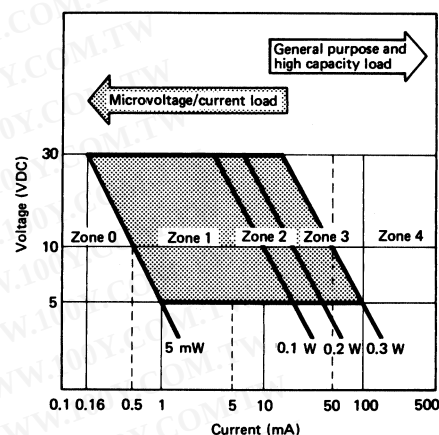
UL (File No. E41515)  
CSA (File No. LR45258-31)

## Rating

### General-purpose Type

1 A, 125 VAC  
0.5 A, 250 VAC  
1 A, 30 VDC

## Applicable Load Range



**NOTE:** The load range shown above is applicable only during the standard conditions.

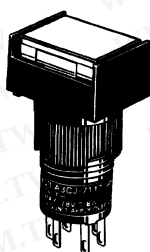
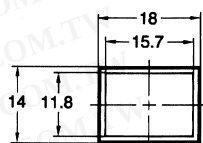
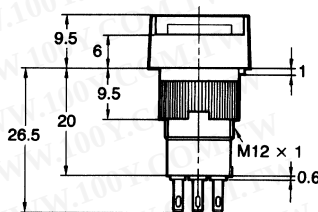
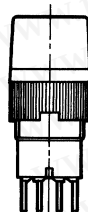
## Microcurrent/Voltage Load

0.1 A, 125 VAC  
0.1 A, 30 VDC

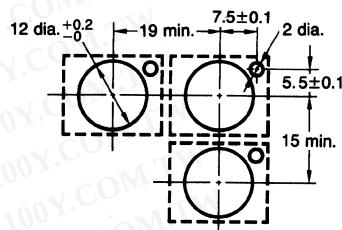
## Dimensions

The following dimensions apply to the switch unit with SPST-NO+SPST-NC contact configuration, with solder terminals.

**Rectangular  
A3CJ**

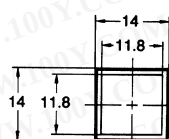
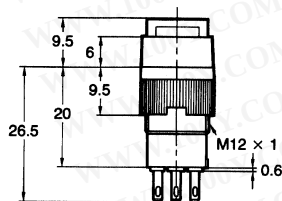
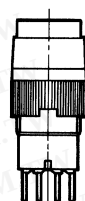


**Panel cutout**

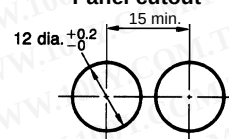


Note: Recommended panel thickness is 1.0 to 3.2 mm.

**Square  
A3CA**

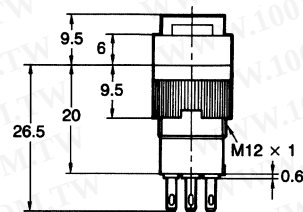
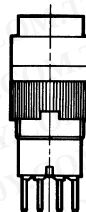


**Panel cutout**

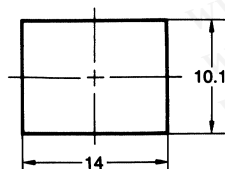


Note: Recommended panel thickness is 1.0 to 3.2 mm.

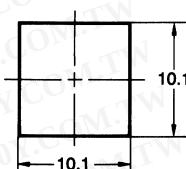
**Round  
A3CT**



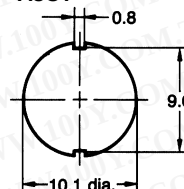
**Legend Plate  
A3CJ**



**A3CA**



**A3CT**

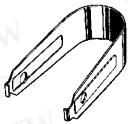


- Note:**
1. The thickness is 0.8 mm.
  2. Since the legend plate is made of polycarbonate, use alcohol-based paints such as melanin, phthalic acid, or acryl paint when marking the legend.

## Terminals/Connections

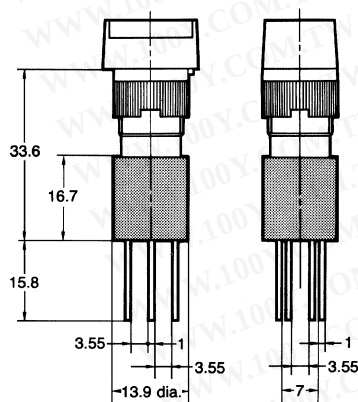
| Terminal        | Type                                                                                                                                           |                                                                                                                           |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|                 | SPST-NO+SPST-NC                                                                                                                                | For indication                                                                                                            |
| Solder terminal | <p>Lighted type, non-lighted type</p> <p>Terminal hole</p> <p>(bottom view)</p>                                                                | <p>Indicator</p> <p>Terminal hole</p> <p>(bottom view)</p>                                                                |
|                 | <p>Lighted type, non-lighted type</p> <p>Mounting hole (bottom view)</p> <p>(bottom view)</p> <p>Six 0.8 dia. <math>+0.1/-0.1</math> holes</p> | <p>Indicator</p> <p>Mounting hole (bottom view)</p> <p>(bottom view)</p> <p>Two 0.8 dia. <math>+0.1/-0.1</math> holes</p> |

## Accessories (Order Separately)

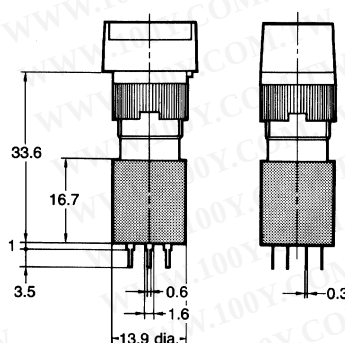
| Name             | Shape                                                                             | Classification     | Model     | Remarks                                                                  |
|------------------|-----------------------------------------------------------------------------------|--------------------|-----------|--------------------------------------------------------------------------|
| Socket           |  | Wire-wrap terminal | A3B-4101  | Cannot be used with insulation cover.                                    |
|                  |                                                                                   | PCB terminal       | A3C-4102  |                                                                          |
|                  |                                                                                   | Solder terminal    | A3C-4103  |                                                                          |
| Insulation Cover |  | ---                | A3C-3002  | Cannot be used with socket.                                              |
| Switch Guard     |  | Rectangular        | A3CJ-5050 | Cannot be used with seal cover.                                          |
| Dust Cover       |  | For all shapes     | A3CJ-5060 | Cannot be used with seal cover.                                          |
| Tightening Tool  |  | ---                | A3C-3004  | Useful for mounting switch units one after another. Do not over-tighten. |
| Extractor        |  | ---                | A3PJ-5080 | Cannot be used with seal cover.                                          |
| Legend Plate     |  | Rectangular        | A3CJ-5201 | One legend plate is supplied per standard switch unit.                   |
|                  |                                                                                   | Square             | A3CA-5201 |                                                                          |
|                  |                                                                                   | Round              | A3CT-5201 |                                                                          |

### Dimensions with Socket

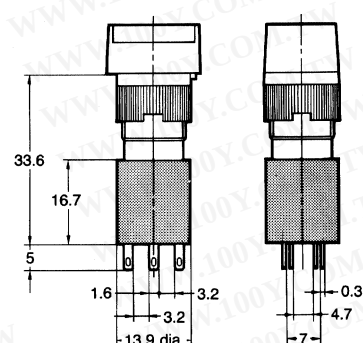
#### Wire-wrap Terminal



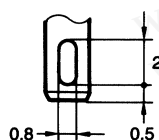
#### PCB Terminal



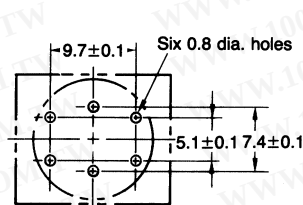
#### Solder Terminal



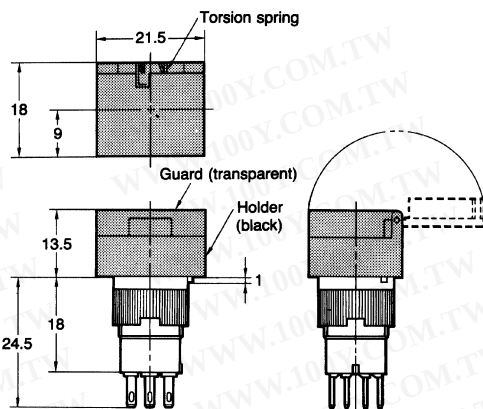
#### Terminal Hole



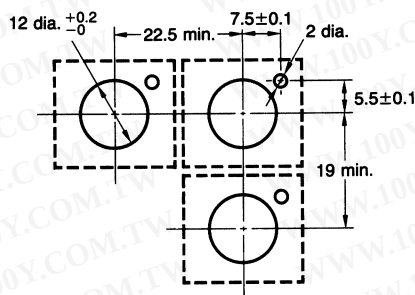
#### Mounting Hole (Bottom View)



## Dimensions with Switch Guard



Panel Cutout (Top View)

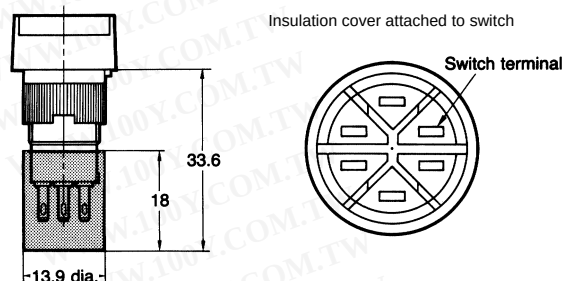


## Dimensions with Insulation Cover

The following dimensions apply to the rectangular pushbutton unit.

After mounting the switch on a panel, and after tightening the mounting nut, insert the lead wires into the hole on the insulation cover before wiring.

Align the insulation cover so that the cylindrical portion of the insulation cover will face the switch unit. This means that the lead wires will be inserted from the barrier side of the insulation cover. After wiring has been completed, slide the insulation cover over the switch unit.



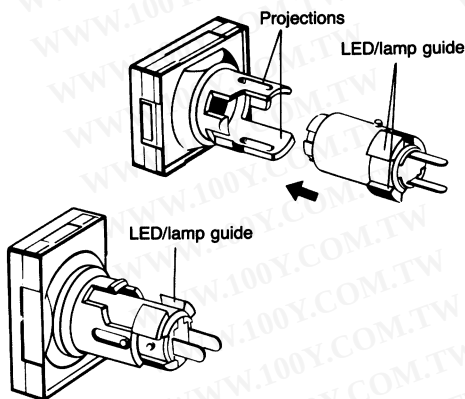
## Assembly/Disassembly

### Mounting and Replacing Pushbutton Unit

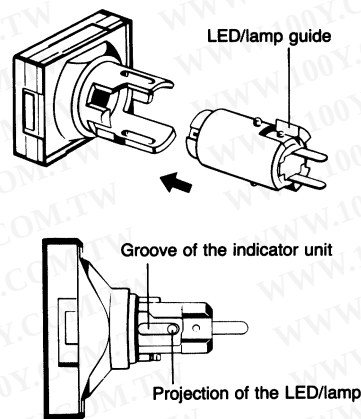
#### Mounting directions for the LED/lamp and pushbutton unit

The OMRON Pushbutton Unit doubles the roles in which a pushbutton switch is normally used. The pushbutton unit may be inserted one of two ways:

1. For operation as a lighted pushbutton switch, fit the LED/lamp so that its guide projection is inserted into the wider opening in the receptacle of the pushbutton unit.



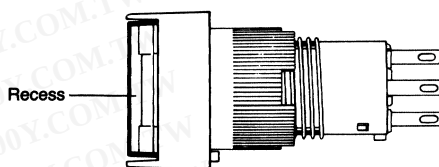
2. For operation as an indicator unit, insert the LED/lamp guide projection into the narrower opening in the indicator unit's receptacle. Push the projection of the LED/lamp in the groove of the pushbutton unit so that the LED/lamp is firmly inserted into the pushbutton unit of the indicator unit.



**Note:** The inserting direction of the LED/lamp for the pushbutton unit is the opposite of that for the indicator unit. Pay attention to the mounting direction of the legend plate.

### Removing the Pushbutton Unit

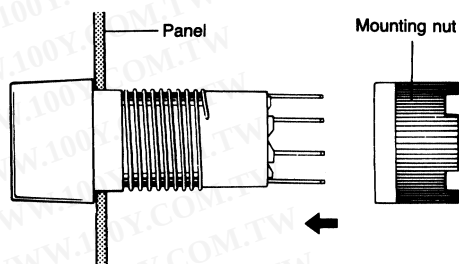
With your thumb and forefinger, while holding the recessed portions on both sides, firmly and steadily pull out the top of the pushbutton unit. Pulling out the cap with pliers or a similar tool will damage the cap.



### Mounting Switch Unit on Panel

#### Nut Mounting

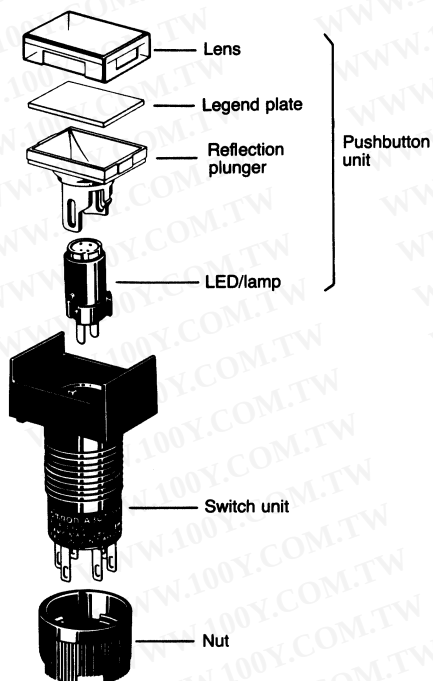
- Insert the switch unit from the front of the panel and tighten the mounting nut inserted from the rear of the panel.
- Since a projection exists on the rear portion of the switch unit, if the mounting nut cannot be fitted into position, turn the nut slightly.
- The tightening torque of the mounting nut should be less than 5 kg-cm.
- Solder the terminals after mounting the nut. Otherwise, the terminals, when thickened by solder, may prevent the nut from being screwed down onto the switch unit.



#### Wiring

- Finish soldering within 5 seconds with a 30 watt soldering iron, or within 3 seconds at a solder temperature of 240°C. For about a minute after soldering, do not apply any force to the switch unit, to avoid deforming the softened plastic switch unit base.
- Use a non-corrosive, resin-based soldering flux.

### Construction



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**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.