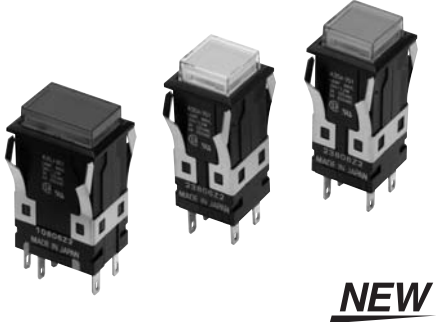



# Lighted Pushbutton Switch (Square) Ultra Bright LED Type A3S

## Pushbutton Switch Series with Square 40-mm Body.

### New models added with Ultra LEDs.

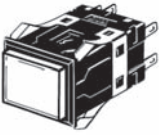
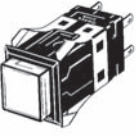
- New models with ultra bright LEDs added to single-screen models.
- Previous models not changed.  
Line up of models in seven colors (the previous red, orange, green, and white models, and the new yellow, blue, and pure white models).



 Refer to *Safety Precautions for All Pushbutton Switches/Indicators* and *Safety Precautions* in the A3S datasheet.

## List of Models

### Lighted Pushbutton Switches

Appearance	Mode
Rectangular 	A3SJ
Square 	A3SA

# Model Number Structure

**Model Number Legend** ..... The model numbers used to order sets are illustrated below. One set comprises the Operation Unit, Lamp, and Socket Unit. For information on combinations, refer to Ordering Information on page 3.

(1)
(2)
(3)
(4)
(5)

A 3 S **J** - 9 0 **A** **1** - **24S** **R**

**(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
G	Momentary	DPDT

- 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 

**(4) Lighting Method LED-lighted Models**

Symbol	Rated voltage
05S	5 VDC
12S	12 VAC/VDC
24S	24 VAC/VDC

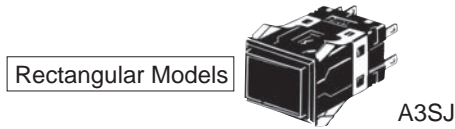
**(5) Operation Unit Color For LED**

Symbol	Color
R	Red
Y	Yellow
G	Green
W	White
O	Orange
A	Blue
PW	Pure White

Color of screen	Symbol	R	Y	G	W	O	A	PW
	Color	Red	Yellow	Green	White	Orange	Blue	Pure White
Color of plate		Red	Yellow	Green	White	Orange	Blue	White
LED		Red	Pure White	Green	Amber	Orange	Blue	Pure White

## Ordering Information

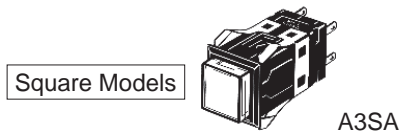
**Ordering as a Set** ..... The model numbers used to order sets of Units are given in the following tables. One set comprises the Operation Unit, Lamp, and Socket Unit.



Contact type	No. of outputs	Lighting method	Operation Case color	Momentary operation (Self-resetting)	Alternate operation (Self-holding)	Pushbutton color symbol
Standard Loads	SPDT	LED lamp	5 VDC	A3SJ-90A1-05S(1)	A3SJ-90B1-05S(1)	R, O, G, W, Y, A, or PW
			12 VAC/DC	A3SJ-90A1-12S(1)	A3SJ-90B1-12S(1)	
			24 VAC/DC	A3SJ-90A1-24S(1)	A3SJ-90B1-24S(1)	
	DPDT		5 VDC	A3SJ-90C1-05S(1)	A3SJ-90D1-05S(1)	
			12 VAC/DC	A3SJ-90C1-12S(1)	A3SJ-90D1-12S(1)	
			24 VAC/DC	A3SJ-90C1-24S(1)	A3SJ-90D1-24S(1)	
Microloads	SPDT	5 VDC	A3SJ-90E1-05S(1)	-		
		12 VAC/DC	A3SJ-90E1-12S(1)	-		
		24 VAC/DC	A3SJ-90E1-24S(1)	-		
	DPDT	5 VDC	A3SJ-90G1-05S(1)	-		
		12 VAC/DC	A3SJ-90G1-12S(1)	-		
		24 VAC/DC	A3SJ-90G1-24S(1)	-		

Note: Enter the desired color symbol for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White, (Y) = Yellow, (A) = Blue, (PW) = Pure White.

Example: Red A3SJ-90A1-24SR



Contact type	No. of outputs	Lighting method	Operation Case color	Momentary operation (Self-resetting)	Alternate operation (Self-holding)	Pushbutton color symbol
Standard Loads	SPDT	LED lamp	5 VDC	A3SA-90A1-05S(1)	A3SA-90B1-05S(1)	R, O, G, W, Y, A, or PW
			12 VAC/DC	A3SA-90A1-12S(1)	A3SA-90B1-12S(1)	
			24 VAC/DC	A3SA-90A1-24S(1)	A3SA-90B1-24S(1)	
	DPDT		5 VDC	A3SA-90C1-05S(1)	A3SA-90D1-05S(1)	
			12 VAC/DC	A3SA-90C1-12S(1)	A3SA-90D1-12S(1)	
			24 VAC/DC	A3SA-90C1-24S(1)	A3SA-90D1-24S(1)	
Microloads	SPDT	5 VDC	A3SA-90E1-05S(1)	-		
		12 VAC/DC	A3SA-90E1-12S(1)	-		
		24 VAC/DC	A3SA-90E1-24S(1)	-		
	DPDT	5 VDC	A3SA-90G1-05S(1)	-		
		12 VAC/DC	A3SA-90G1-12S(1)	-		
		24 VAC/DC	A3SA-90G1-24S(1)	-		

Note: Enter the desired color symbol for the Pushbutton in (1). (R) = Red, (O) = Orange, (G) = Green, (W) = White, (Y) = Yellow, (A) = Blue, (PW) = Pure White.

Example: Red A3SA-90A1-24SR

## Accessories and Tools

The accessories and tools are the same as those for the A3S. Refer to the A3S datasheet.

# Specifications

## Approved Standard Ratings

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

Standard Load: 3 A at 125 VAC  
2 A at 250 VAC

Microload: 0.1 A at 125 VAC  
0.1 A at 30 VDC

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

## Ratings

### For Standard Loads

Rated voltage	Non-inductive load (A)				Inductive load (A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	3		1	0.7	2		1.5	1
250 VAC	2		0.7	0.5	1.5		1	0.7
8 VDC	3		1		2		1.5	
14 VDC	3		1		1.5		1.5	
30 VDC	2		1		1.5		1	
125 VDC	0.4		0.05		0.4		0.05	
250 VDC	0.2		0.03		0.2		0.03	

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

The rated values are for testing conducted under the following conditions.

- (1) Ambient temperature: 20±2°C
- (2) Ambient humidity: 65% ±5%RH
- (3) Operating frequency: 20 times/min

### For Microloads

Rating	0.1 A at 30 VDC (resistive load); 0.1 A at 125 VAC (resistive load)
Minimum applicable load	1 mA at 5 VDC

## LED Lamp

Applied voltage	Rated voltage	Rated current
5 VDC±5%	5 VDC	8 mA
12 VAC/VDC±5%	12 VAC/VDC	
24 VAC/VDC±5%	24 VAC/VDC	

## 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	Malfunition	10 to 55 Hz, 1.5-mm double amplitude *3
Shock resistance	Destruction	500 m/s <sup>2</sup> max.
	Malfunition	200 m/s <sup>2</sup> max. *3
Life expectancy	Mechanical	Momentary operation models: 1,000,000 operations min. Alternate operation models: 100,000 operations min. (One operation consists of set and reset operations.)
	Electrical	100,000 operations min. (rated load)
Weight		Approx. 10 g
Inrush current	NC	Standard load: 10 A max.
	NO	Standard load: 10 A max.
Ambient operating temperature		-10 to 50°C (with no icing or condensation)
Ambient operating humidity		35% to 85% RH
Ambient storage temperature		-25 to 65°C (with no icing or condensation)
Degree of protection		IP00
Electric shock protection class		Class II
PTI (proof tracking index)		175
Pollution degree		3 (IEC 60947-5-1)

\*1. With alternate operation models, 60 operations/min max. One operation cycle consists of set and reset operations.

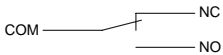
\*2. With no incandescent lamp or LED lamp mounted.

\*3. Malfunition : 1 ms max.

## 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

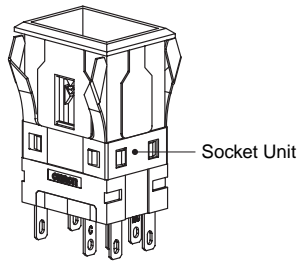
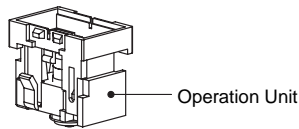
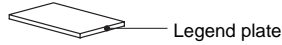
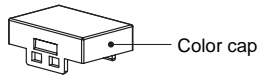
## Model Structure

Rectangular  
A3SJ

Square  
A3SA

Single  
screen

Single  
screen

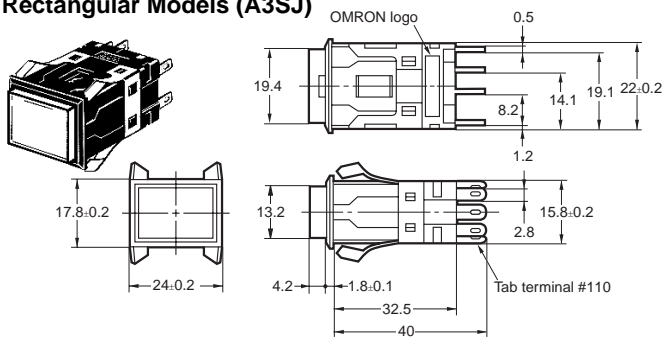


## Dimensions

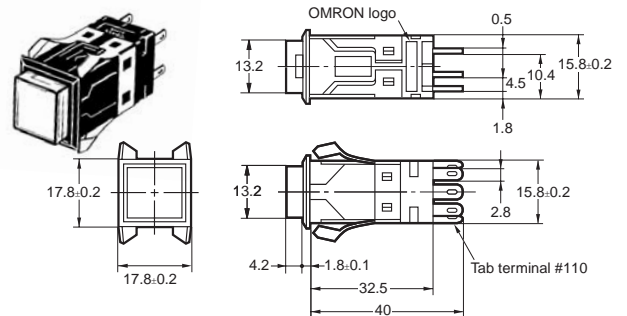
The Dimension shows 2-switch outputs.

(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.

## Contact Type

### Lamp-lighted Models

Type	Model	Rectangular Models (A3SJ)	Square Models (A3SA)
SPDT	Bottom view	<p>Terminal arrangement</p>	<p>Terminal arrangement</p>
	Top view	<p>Lighting block</p>	<p>Lighting block</p>
	Bottom view	<p>Terminal arrangement</p>	<p>Terminal arrangement</p>
	Top view	<p>Lighting block</p>	<p>Lighting block</p>

**Panel Cutout** (If you use a Switch Guard or Seal Cover, refer to *Switch and Guard Mounting Dimensions* or *Seal Cover Mounting Dimensions* in the A3S datasheet.)

**Rectangular Models (A3SJ)**

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

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

**Square Models (A3SA)**

Classification	Mounting design	Panel cutout	Remarks
Flange mount models	Individual mounting 		Panel cutout spacing between rows of Units: 
	Multiple mounting 		
Barrier mount models	Individual mounting 		Panel cutout spacing between rows of Units: 
	Multiple mounting 		

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

**Safety Precautions**

Refer to *Safety Precautions for all Pushbutton Switches/Indicators* for common precautions.

Read the *Safety Precautions* in the A3S datasheet.

For technical information and FAQs, refer to Technical Support on the OMRON Industrial Automation website (<http://www.ia.omron.com>).

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