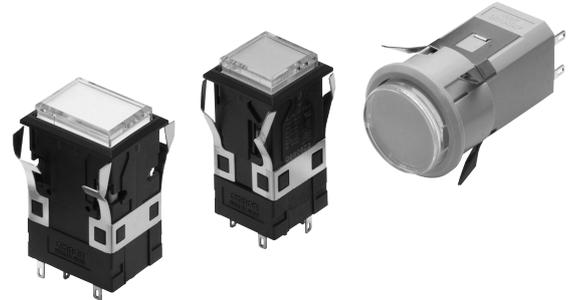


# Lighted Pushbutton Switch (Square) Ultra Bright LED Type A3P

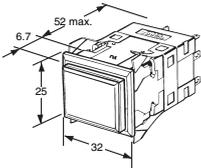
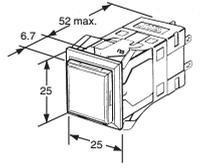
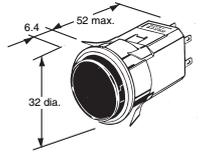
## Large Square-bodied Lighted Pushbutton Switches New models added with Ultra LEDs.

- 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).
- Popular maintenance lock added.



 Refer to *Safety Precautions for All Pushbutton Switches/Indicators* and *Safety Precautions* in the A3P datasheet.

## List of Models

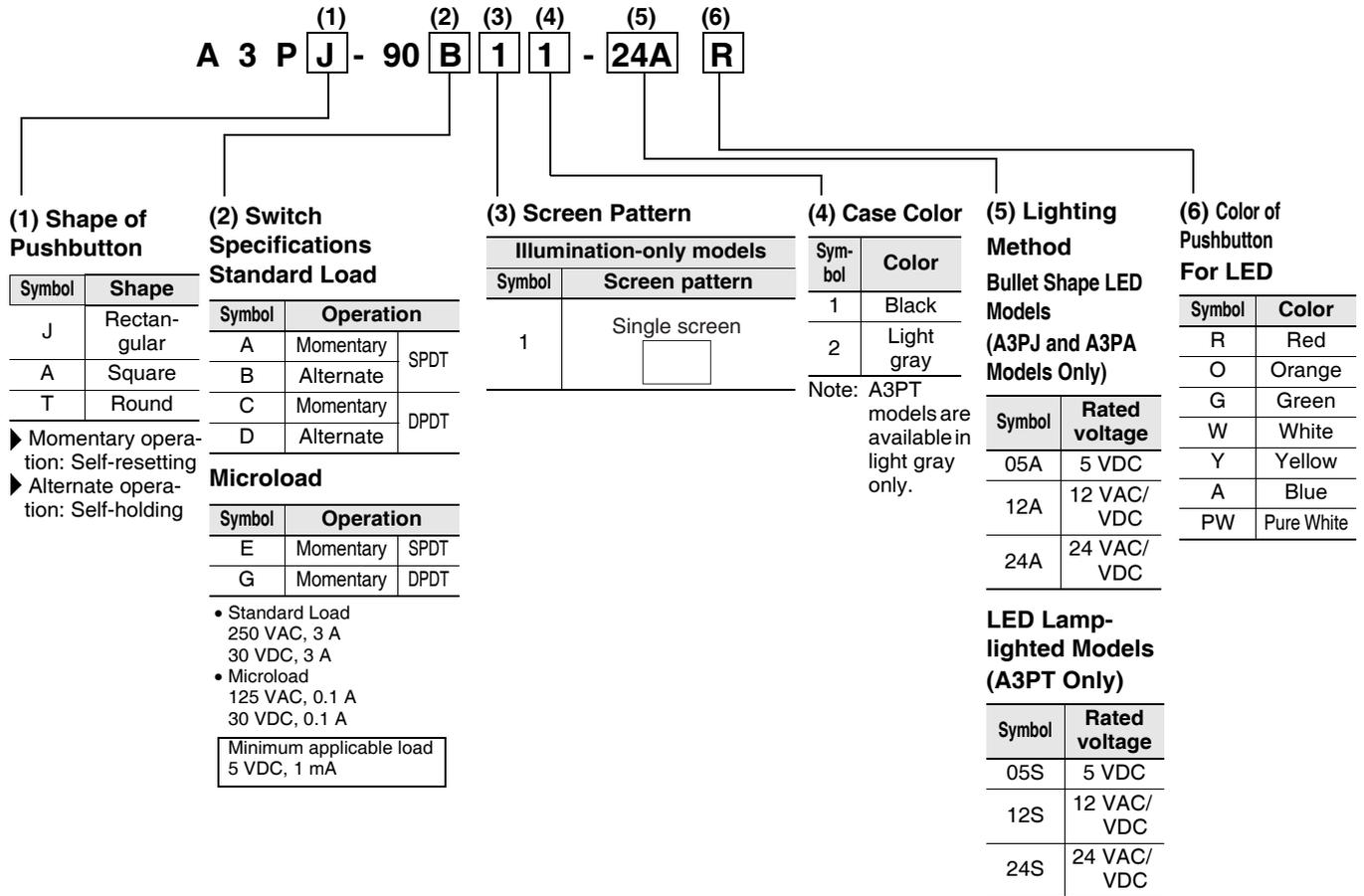
Model	Appearance
A3PJ (Rectangular)	
A3PA (Square)	
A3PT (Round)	

# A3P

## Model Number Structure

**Model Number Legend** ..... The model numbers used to order sets of Units are illustrated below. One set comprises the Pushbutton, Lamp, and Switch.

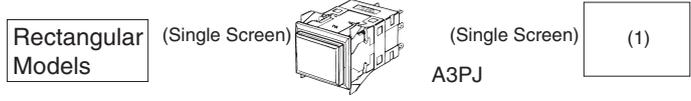
For information on combinations, refer to *Ordering Information* on pages page 3 and 4.



Color of screen	Symbol Color	R	Y	G	W	O	A	PW
		Red	Yellow	Green	White	Orange	Blue	Pure White
<b>Legend plate (colored plate)</b>		Red	Yellow	Green	White	Orange	Blue	White
<b>Diffusion plate</b>		Translucent	Yellow	Translucent	Translucent	Translucent	Translucent	Translucent
<b>LED</b>		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 Pushbutton, Lamp, and Switch.  
 (Not all combinations are possible. Ask your OMRON representative for details.)



Contact type	No. of outputs	Lighting method Pushbutton color symbol	Operation Case color	Momentary operation (Self-resetting)		Alternate operation (Self-holding)	
				Black	Light gray	Black	Light gray
Standard Loads	SPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PJ-90A11-12A(1)	A3PJ-90A12-12A(1)	A3PJ-90B11-12A(1)	A3PJ-90B12-12A(1)
			24 VAC/DC	A3PJ-90A11-24A(1)	A3PJ-90A12-24A(1)	A3PJ-90B11-24A(1)	A3PJ-90B12-24A(1)
	DPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PJ-90C11-12A(1)	A3PJ-90C12-12A(1)	A3PJ-90D11-12A(1)	A3PJ-90D12-12A(1)
			24 VAC/DC	A3PJ-90C11-24A(1)	A3PJ-90C12-24A(1)	A3PJ-90D11-24A(1)	A3PJ-90D12-24A(1)
Microloads	SPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PJ-90E11-12A(1)	A3PJ-90E12-12A(1)	-	-
			24 VAC/DC	A3PJ-90E11-24A(1)	A3PJ-90E12-24A(1)	-	-
	DPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PJ-90G11-12A(1)	A3PJ-90G12-12A(1)	-	-
			24 VAC/DC	A3PJ-90G11-24A(1)	A3PJ-90G12-24A(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 A3PJ-90A11-24AR

# A3P

## 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 Pushbutton, Lamp, and Switch.



Contact type	No. of outputs	Lighting method Pushbutton color symbol	Operation Case color	Momentary operation (Self-resetting)		Alternate operation (Self-holding)	
				Black	Light gray	Black	Light gray
Standard Loads	SPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PA-90A11-12A(1)	A3PA-90A12-12A(1)	A3PA-90B11-12A(1)	A3PA-90B12-12A(1)
			24 VAC/DC	A3PA-90A11-24A(1)	A3PA-90A12-24A(1)	A3PA-90B11-24A(1)	A3PA-90B12-24A(1)
	DPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PA-90C11-12A(1)	A3PA-90C12-12A(1)	A3PA-90D11-12A(1)	A3PA-90D12-12A(1)
			24 VAC/DC	A3PA-90C11-24A(1)	A3PA-90C12-24A(1)	A3PA-90D11-24A(1)	A3PA-90D12-24A(1)
Microloads	SPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PA-90E11-12A(1)	A3PA-90E12-12A(1)	–	–
			24 VAC/DC	A3PA-90E11-24A(1)	A3PA-90E12-24A(1)	–	–
	DPDT	Bullet Shape LEDs R, O, G, W, Y, A or PW	12 VAC/DC	A3PA-90G11-12A(1)	A3PA-90G12-12A(1)	–	–
			24 VAC/DC	A3PA-90G11-24A(1)	A3PA-90G12-24A(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 A3PA-90A11-24AR



Contact type	No. of outputs	Lighting method	Operation Case color	Momentary operation (Self-resetting)	Pushbutton color symbol
				Light gray	
Standard Loads	SPDT	LED lamp	24 VAC/DC	A3PT-90A12-24S(1)	R O G W Y A PW
	DPDT		24 VAC/DC	A3PT-90C12-24S(1)	

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

Example: Red A3PT-90A12-24SR

## Accessories and Tools

Accessories, Tools, and the replacement parts (caps only) are the same as those for the A3P. Refer to the A3P datasheet. Individual colored plates and legend plates are not available.

# Specifications

## Approved Standard Ratings

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

Standard Load: 5 A at 125 VAC  
 3 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.

### CCC (GB/T14048.5)

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

## Ratings

### Contact Ratings

#### Silver Alloy Contacts (for Standard Loads)

Rated voltage (V)	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	5		0.7		3		1.3	
250 VAC	3		0.5		2		0.8	
8 VDC	5		2		4		3	
14 VDC	5		2		4		3	
30 VDC	4		2		3		3	
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.

Standard testing condition

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

#### Gold Alloy Contacts (for Microloads)

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

## Bullet Shape LED and LED Lamp Ratings

### Bullet Shape LEDs

Model		A3PJ/M2PJ	A3PA/M2PA
Applied voltage	Rated voltage	Rated current	Rated current
		Single screen	Single screen
5 VDC±5%	5 VDC	40 mA	20 mA
12 VDC±5%	12 VDC	20 mA	10 mA
24 VDC±5%	24 VDC	10 mA	

### LED Lamps

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

## Characteristics

Operating frequency	Mechanical	120 operations/minute max. *1
	Electrical	30 operations/minute max.
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance	Standard load	40 mΩ max. (initial value)
	Microload	100 mΩ max. (initial value)
Dielectric strength	Between terminals of same polarity	1,000 VAC, 50/60 Hz for 1 minute *2
	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 *3
Vibration resistance	Malfunction	10 to 55 Hz, 1.5 mm double amplitude (1 ms max.)
Shock resistance	Destruction	500 m/s <sup>2</sup> max.
	Malfunction	200 m/s <sup>2</sup> max. (1 ms max.)
Life expectancy	Mechanical	Momentary operation models: 1,000,000 operations min. Alternate operation models: 200,000 operations min. (One operation consists of set and reset operations.)
	Electrical	100,000 operations min.
Weight		Approx. 30 g
Inrush current	NC	Silver contact: 10 A max.
	NO	Silver contact: 10 A max.
Ambient operating temperature		Bullet Shape LEDs: -10°C to 40°C (with no icing or condensation) LED Lamps: -10°C to 50°C (with no icing or condensation)
Ambient operating humidity		35% to 85%RH
Ambient storage temperature		-25°C to 65°C
Degree of protection		IP40
Electric shock protection class		Class II
PTI (proof tracking index)		175
Pollution degree		3 (IEC947-5-1)

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

\*2. 600 VAC for microloads.

\*3. With no incandescent lamp or LED lamp mounted.

# A3P

## Specifications

### Operating Characteristics

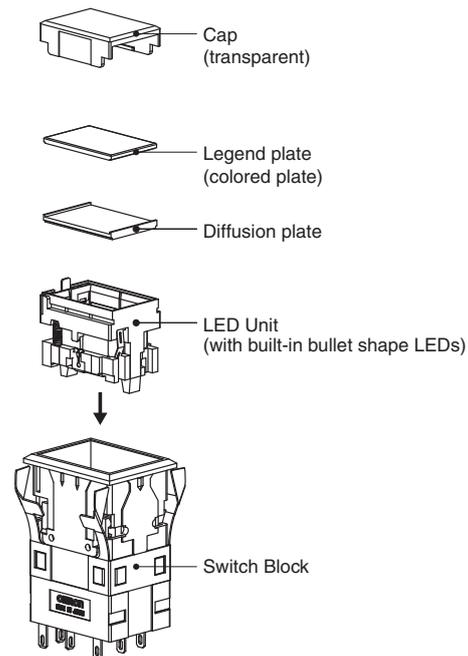
Operating Characteristics	Model	A3PJ series		A3PA series		A3PT series	
		Momentary operation models	Alternate operation models	Momentary operation models	Alternate operation models	Momentary operation models	Alternate operation models
Operating force	OF max.	5.88 N	6.86 N	5.88 N	6.86 N	3.92 N	4.90 N
Releasing force	RF min.	0.39 N	0.29 N	0.39 N	0.29 N	0.39 N	0.29 N
Total travel	TT	Approx. 3.5 mm					
Pretravel	PT max.	3 mm					
Lock travel alternate	LTA min.	---	0.5 mm	---	0.5 mm	---	0.5 mm

## Nomenclature

### Model Structure

Lighting method	Bullet Shape LED Models (LED is built-in.)		LED Lamp-lighted Models (LED lamp is not built-in.)
	A3PJ	A3PA	A3PT
Models			
Screen patterns	Single screen 	Single screen 	Single screen 

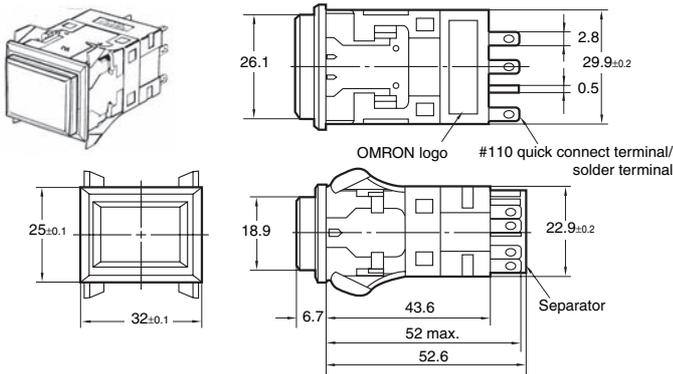
Example: A3PJ with Bullet Shape LED Lighting



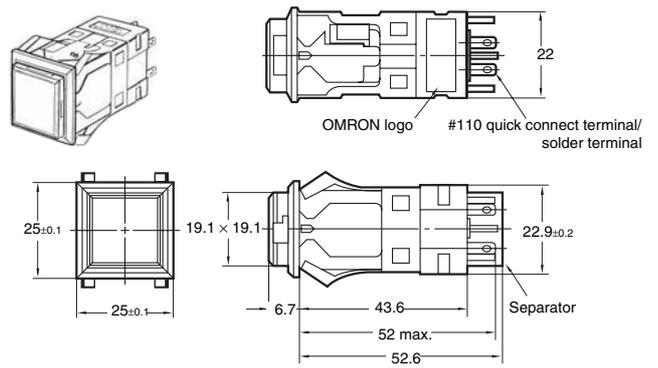
**Dimensions** The Dimension shows 2-switch outputs.

(Unit: mm)

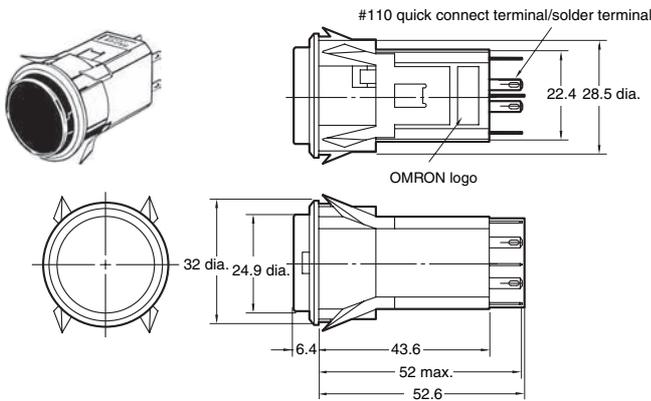
**A3PJ (Rectangular) Models**



**A3PA (Square) Models**



**A3PT (Round) Models**



**Note:** The thickness of tab terminals #110 and solder terminals is 0.5 mm.

**Terminal Connections**

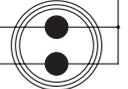
**Bullet Shape LED Models**

(The terminal arrangement diagram shows a 1-switch output. Connections to terminals from the lighting block are the same for 2 outputs.)

Rated voltage		5 VDC		12 VDC		24 VDC	
Model	Screen pattern	Bottom view	Top view	Bottom view	Top view	Bottom view	Top view
A3PJ	Single screen						
	Single screen						

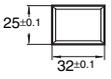
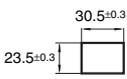
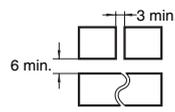
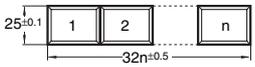
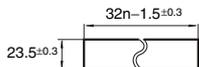
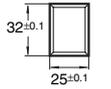
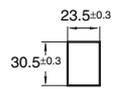
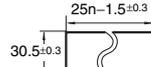
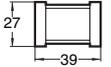
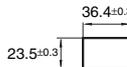
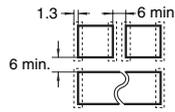
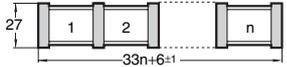
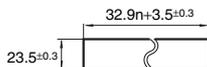
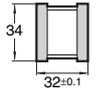
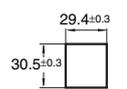
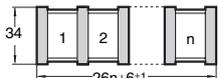
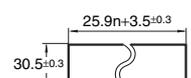
### LED Lamp-lighted Models

(All are shown with the OMRON logo facing down. The terminal arrangements are the same as for the LED-lighted models.)

Output	Model	Round A3PT models
SPDT	Bottom view	Top view
		
		Terminal arrangement
		Lighting block

### 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 A3P datasheet.)

#### A3PJ (Rectangular) Models

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)			
	Multiple mounting (Vertical)			
Barrier mount models	Individual mounting (Horizontal)			For barrier mount models, refer to <i>Accessories</i> in the A3P datasheet. Panel cutout spacing between rows of Units: (Dotted line indicates the position of each mounting barrier.) 
	Multiple mounting (Horizontal)			
	Individual mounting (Horizontal)			
	Multiple mounting (Vertical)			

**Note:** 1. n: Number of Units

2. Recommended panel thickness: 1 to 5 mm

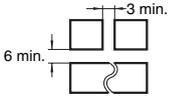
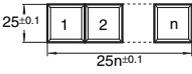
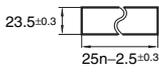
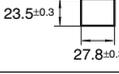
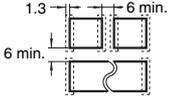
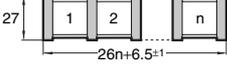
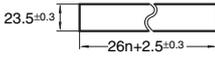
3. Mount the panel before mounting the Switch Guard.

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

# Dimensions

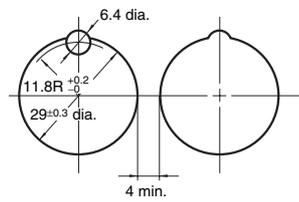
(Unit: mm)

## A3PA (Square) Models

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: (Dotted line indicates the position of each mounting barrier.) 
	Multiple mounting			

- Note:**
1. n: Number of Units
  2. Recommended panel thickness: 1 to 5 mm
  3. Mount the panel before mounting the Switch Guard.
  4. If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

## A3PT (Round) Models



- Note:**
1. Recommended panel thickness: 1 to 5 mm
  2. If the panel is to be finished (e.g., coated), make sure that the panel meets the specified dimensions after the coating.

## A3P

### Safety Precautions

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

Read the *Safety Precautions* in the A3P datasheet.

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

# 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.

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