OMRON

Lighted PushButton Switch

A3C

Cylindrical 12mm dia. Pushbutton 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 20mm mounting depth.
- All LEDs, lamps, lenses and legends replaceable without tools.
- Degree of protection conforms to IP40. UL (E41515) and CSA (LR45258–31) approved.

Ordering Information

Illuminated types

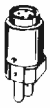
When placing your order, specify the individual component part model numbers of the screen, LED/lamp and switch unit as listed in the ordering tables below.

Screen

A3C❑–500❑

LED/Lamp

LED



A3B–0❑❑❑

Incandescent Lamp

A3B–0❑❑❑

Switch Unit

A3C❑–7❑❑❑
M2C❑–7❑❑❑*

* Model number unique for indicator unit

■ Screen

LED Illuminated

Shape / Button colour	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: 1. With the exception of green, all screens 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.

Incandescent Lamp Illuminated

Shape / Button colour	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

■ Illumination Source

LED

Colour \ Rated voltage	5VDC	12VDC	24VDC
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

All Colours \ Rated voltage	6VDC	14VDC	18VDC	28VDC
Model	A3B–006	A3B–014	A3B–018	A3B–028

■ Switch Unit

				Degree of protection	IP40		
				Appearance	Rectangular	Square	Round
Configuration	Contact	Switch action	Terminal				
General purpose	**SPST–NO+ 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
Indicator			**Solder**		M2CJ–7001	M2CA–7001	M2CT–7001
			PCB		M2CJ–7002	M2CA–7002	M2CT–7002

Specifications

■ Contact Ratings

Type	AC resistive load	DC resistive load
General purpose load	0.5A, 250VAC 1A, 125VAC	1A, 30VDC
Micro* current/voltage load	0.1A, 125VAC	0.1A, 30VDC

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

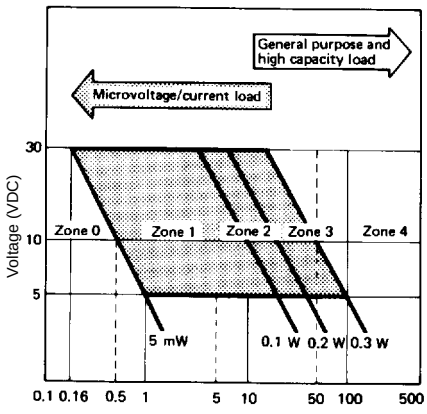
■ LED Ratings

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

■ Lamp Ratings

Rated voltage	Rated current	Operating voltage
6V	60mA	5V
14V	40mA	12V
18V	26mA	15V
28V	24mA	24V

■ Applicable load range



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

■ Characteristics

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

■ Operating Characteristics

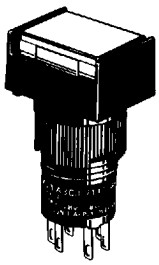
OF max.	250g
RF min.	30g
TT	3.5±0.5mm
LTA min.	0.5mm
PT max.	2.5mm

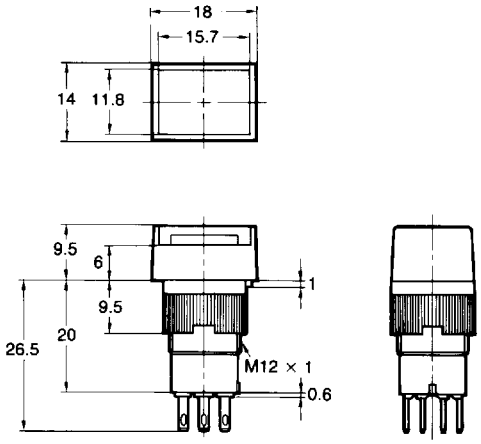
■ Approved by Standards

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

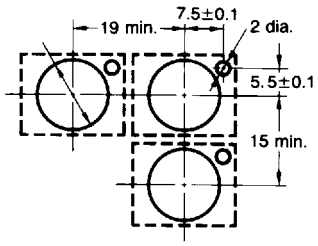
Dimensions

Rectangular
A3CJ



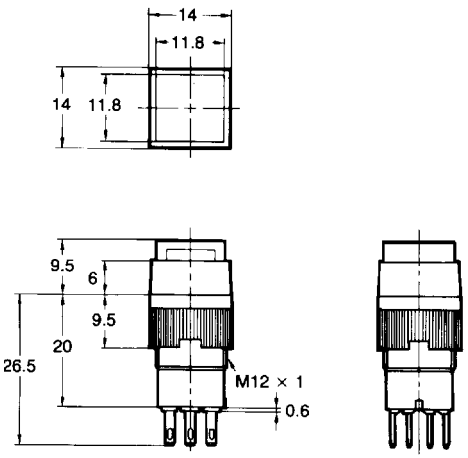


Panel cutout

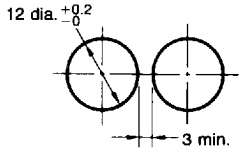


Note: Recommended panel thickness is 1.0 to 3.2mm.

Square
A3CA

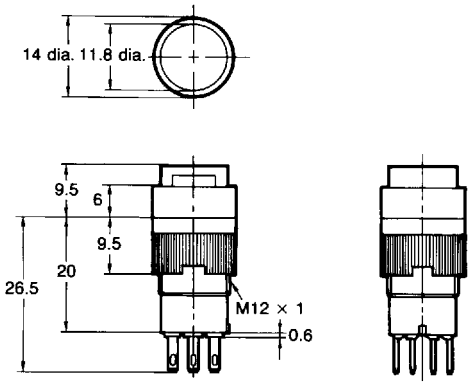


Panel cutout

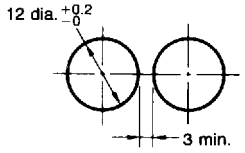


Note: Recommended panel thickness is 1.0 to 3.2mm.

Round
A3CT



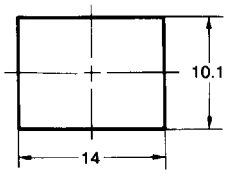
Panel cutout



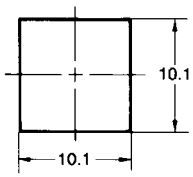
Note: Recommended panel thickness is 1.0 to 3.2mm.

Legend plate

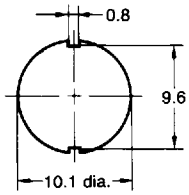
A3CJ



A3CA



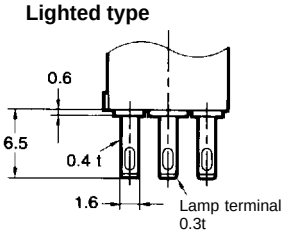
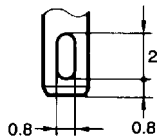
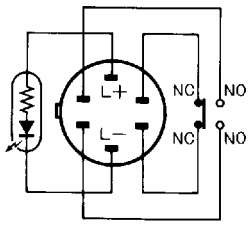
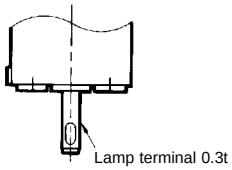
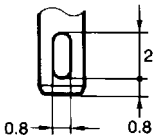
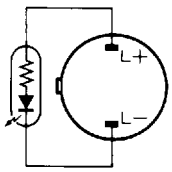
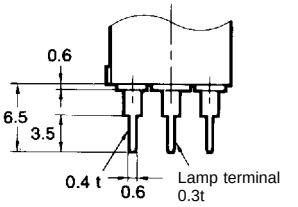
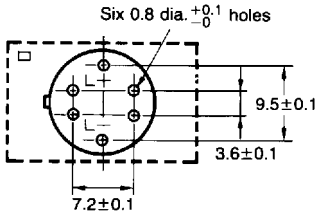
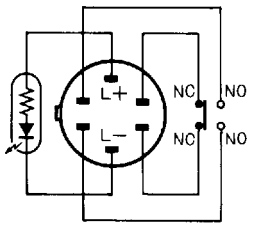
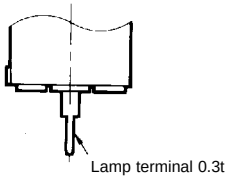
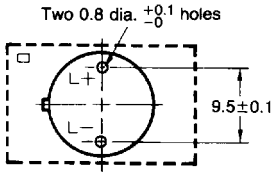
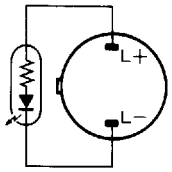
A3CT



Note: 1 The thickness is 0.8mm

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

Type / Terminal	SPST–NO+SPST–NC	For Indication
Solder Terminal	**Lighted type**  **Terminal hole**   **(Bottom view)**	**Indicator**  **Terminal hole**   **(Bottom view)**
PCB Terminal	**Lighted type**  **Mounting hole (Bottom view)**   **(Bottom view)**	**Indicator**  **Mounting hole (Bottom view)**   **(Bottom view)**

Accessories (Order Separately)

Name	Shape	Classification	Model	Remarks
Socket		Wire-wrap terminal	A3C–4101	–
		PCB terminal	A3C–4102	
		Solder terminal	A3C–4103	
Switch guard		Rectangular	A3CJ–5050	–
Tightening tool		–	A3C–3004	Useful for mounting switch units one after another. Do not over-tighten.

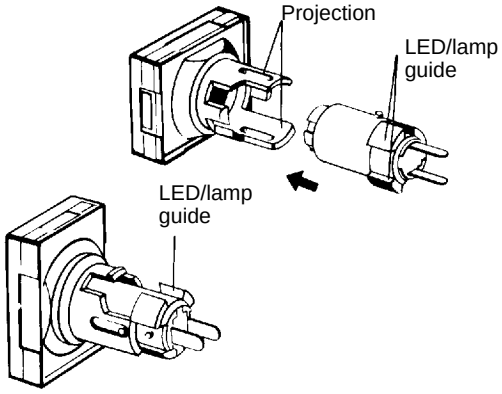
Assembly/Disassembly

■ Mounting and Replacing Pushbutton Unit

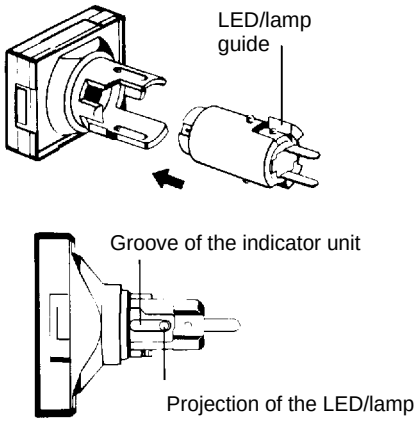
Mounting directions for the LED/lamp and Screen

The OMRON screen doubles the roles in which a pushbutton switch is normally used. The screen 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 screen.



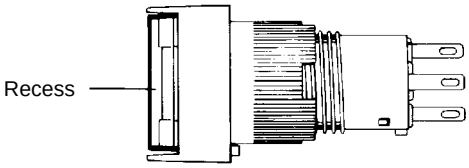
2. For operation as an indicator unit, insert the LED/lamp guide projection into the narrower opening in the indicator unit's receptacle. Push the projection of the LED/lamp in the groove of the screen so that the LED/lamp is firmly inserted into the screen of the indicator unit.



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

Removing the pushbutton unit

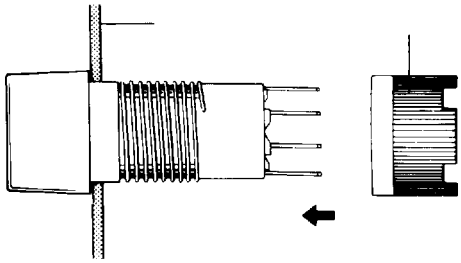
While holding the recessed portions on both sides, firmly and steadily pull out the top of the screen with your thumb and forefinger. Pulling out the cap with pliers or a similar tool will damage the cap.



■ Mounting the 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 unit cannot be fitted into position, turn the nut slightly.
- The tightening torque of the mounting nut should be less than 5kg–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. Do not apply any force to the switch unit for about a minute after soldering, to avoid deforming the softened plastic base of the switch unit.
- Use a non-corrosive, resin-based soldering flux.

Construction