

Key-type Selector Switch

A165K

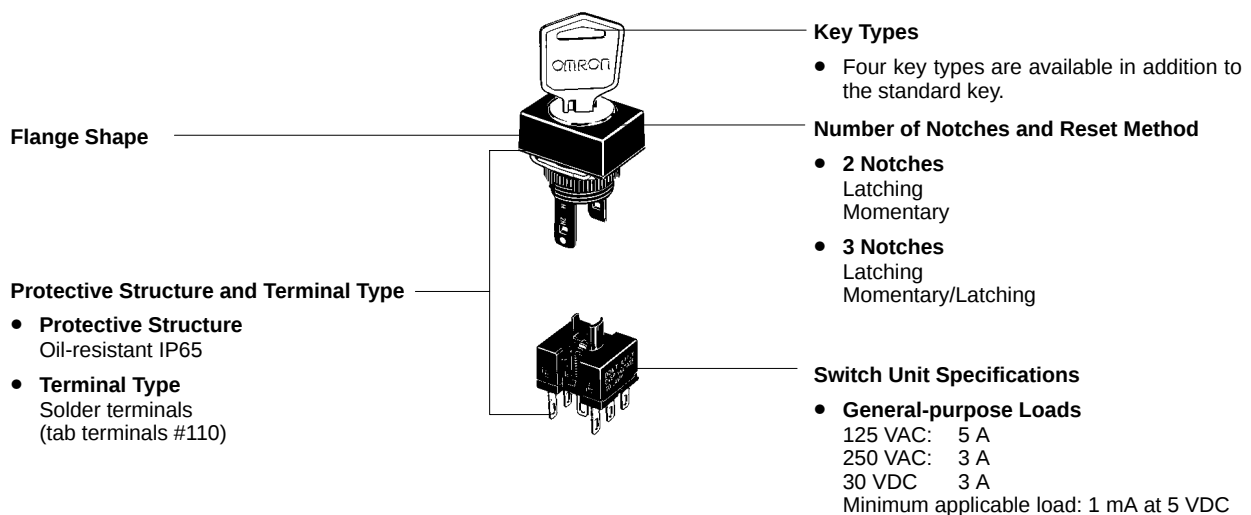
Mounting Aperture of 16 mm

- Modular construction
- Oil-resistant IP65 models
- UL and CSA approved, VDE (pending)
- Conforms to EN60947-5-1, IEC947-5-1
- Short mounting depth, less than 28.5 mm below panel
- Wide range of switching capacity from general to microload
- Momentary and latching models available



Ordering Information

■ Construction



■ Model Number Legend

1. Selector

A165K-
 1 2

1. Flange Shape

- J: Rectangular
 A: Square
 T: Round

2. Number of Notches/Reset Method/Key Release Position

Suffix	Notches	Reset method	Key release position
2ML	2 notches	Manual	Left
2MR			Right
2M			Right and left
2AL		Automatic	Left
3MC	3 notches	Manual	Center
3MR			Right
3ML			Left
3M			Right, left, and center
3AC		Automatic	Center

2. Switch Unit

(Common Use with Knob-type Selector Switch)

A16S-
 1 2 3 4

1. Number of Notches

- 2N: 2 notches
 3N: 3 notches

2. Contacts

- 1: SPDT
 2: DPDT

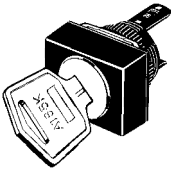
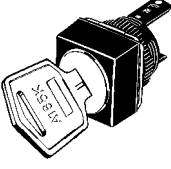
3. Lighted/Non-lighted

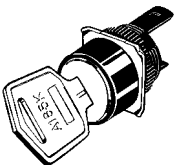
- None: Non-lighted

4. Terminals

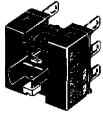
- None: Solder terminals (tab terminals #110)

Functional Units

Shape	Number of notches	Reset method	Key release position	Model
Rectangular (A165K-J) 	2 notches	Latching		A165K-J2ML
				A165K-J2MR
				A165K-J2M
		Momentary 		A165K-J2AL
	3 notches	Latching		A165K-J3MC
				A165K-J3MR
				A165K-J3ML
				A165K-J3M
		Momentary 		A165K-J3AC
Square (A165K-A) 	2 notches	Latching		A165K-A2ML
				A165K-A2MR
				A165K-A2M
		Momentary 		A165K-A2AL
	3 notches	Latching		A165K-A3MC
				A165K-A3MR
				A165K-A3ML
				A165K-A3M
		Momentary 		A165K-A3AC

Shape	Number of notches	Reset method	Key release position	Model
Round (A165K-T) 	2 notches	Latching		A165K-T2ML
				A165K-T2MR
				A165K-T2M
		Momentary 		A165K-T2AL
	3 notches	Latching		A165K-T3MC
				A165K-T3MR
				A165K-T3ML
				A165K-T3M
		Momentary 		A165K-T3AC

■ Switch Units

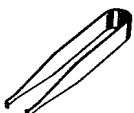
Shape	Classification					Model
	Non-lighted	Socket	2 notches	SPDT	Solder terminal	A16S-2N1
				DPDT		A16S-2N2
			3 notches	DPDT		A16S-3N2

Accessories (Order Separately)

■ Accessories

Name	Shape	Classification	Model	Remarks
Panel Plugs		Rectangular	A3BJ-3003	Used for covering the panel cutouts for future panel expansion.
		Square	A3BA-3003	
		Round	A3BT-3003	

■ Tools

Name	Shape	Model	Applicable types					Remarks
			Pushbutton Switch	Knob-type Selector Switch	Key-type Selector Switch	Emergency Stop Switch	Indicator	
Screw Fitting		A3B-3004	Yes	Yes	Yes	Yes	Yes	Convenient for ganged installation. Tighten to a torque of 0.39 N • m (5 kgf • cm) min.
Extractor		A16Z-5080	Yes	Yes	Yes	Yes	Yes	Convenient for extracting the Switch Unit and Lamps.

Specifications

■ Approved Standards

UL, cUL (File No. E41515)

5 A at 125 VAC, 3 A at 250 VAC (general use)

3 A at 30 VDC (resistive)

EN60947-5-1 (Low Voltage Directive)

■ Ratings

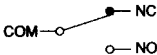
AC resistive load	DC resistive load
3 A, 250 VAC 5 A, 125 VAC	3 A, 30 VDC

Minimum applicable load: 1 mA at 5 VDC

Rated values are obtained from tests conducted under the following conditions according to JIS C4505 and C4520.

1. Load: Resistive load
2. Mounting conditions: No vibration and no shock
3. Temperature: 20°±2°C
4. Operating frequency: 20 times/min

Contact

Name	Contact
DPDT	 COM — NC COM — NO

■ Characteristics

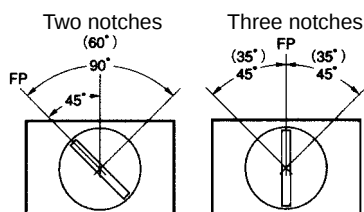
Item		Key-type Selector Switch
Allowable operating frequency	Mechanical	20 operations/min max.
	Electrical	10 operations/min max.
Insulation resistance		100 MΩ min. (at 500 VDC)
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min between terminals of same polarity 2,000 VAC, 50/60 Hz for 1 min between terminals of different polarity and also between each terminal and ground
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude (malfunction within 1 ms)
Shock resistance	Mechanical	500 m/s ² (50G)
	Malfunction	150 m/s ² (15G) max. (malfunction within 1 ms)
Life expectancy	Mechanical	250,000 operations min. (life of key: 10,000 operations min.)
	Electrical	100,000 operations min.
Ambient temperature		Operating: -10°C to 55°C (with no icing or condensation) Storage: -25°C to 65°C (with no icing or condensation)
Ambient humidity		Operating: 35% to 85%
Electric shock protection class		Class II
PTI (tracking characteristic)		175
Degree of contamination		3 (IEC947-5-1)
Weight		Approx. 26.5 g (in the case of a DPDT switch key)

Note: Set and reset constitute one operation.

■ Operating Characteristics

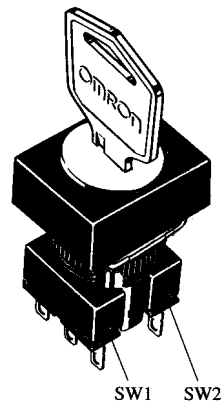
Type	Key-type Selector Switch	
	2 notches	3 notches
Features		
Operating force (OF) max.	9.8 N • m (1,000 gf • cm)	
Set position (SP)	90±5°	45 ⁺¹⁰ / ₀

■ Operation Angle



Note: The angle used for automatic reset is shown in parentheses.

■ Contacts



Notch	Contact				
	SPDT		DPDT		
	Position	SW	Position	SW1	SW2
2 notches					
3 notches	---				

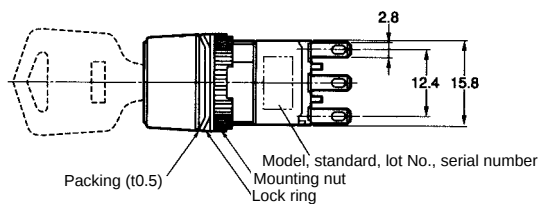
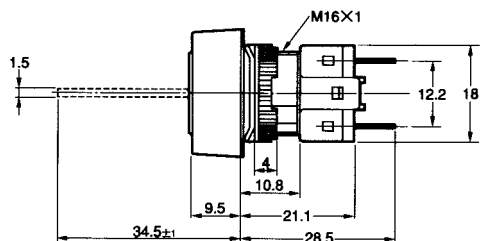
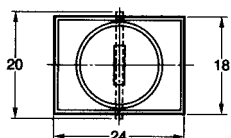
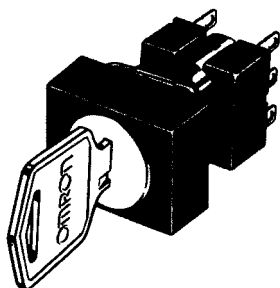
Dimensions

Note: All units are in millimeters unless otherwise indicated.

■ Key-type Selector Switches

Rectangular A165K-J

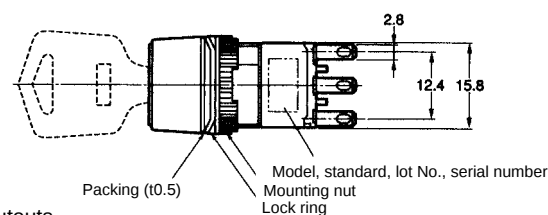
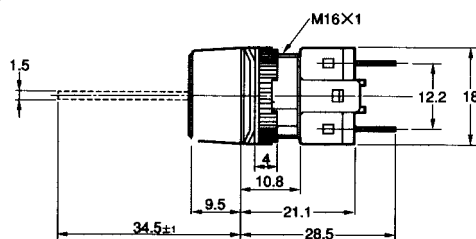
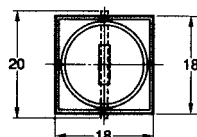
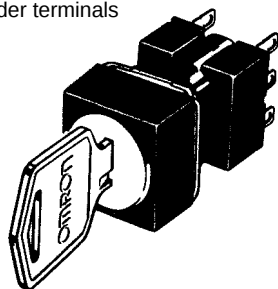
Solder terminals



Note: See page 39 for panel cutouts.

Square A165K-A

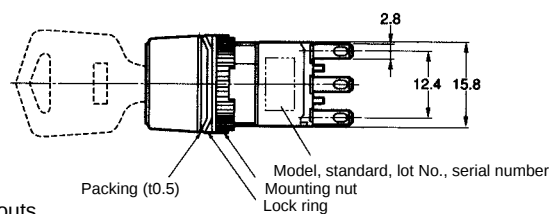
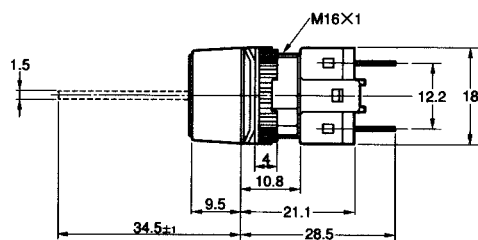
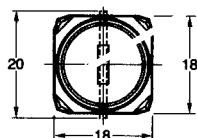
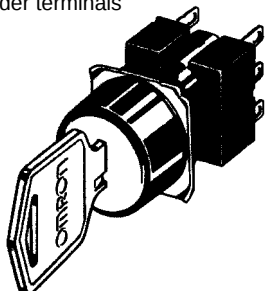
Solder terminals



Note: See page 39 for panel cutouts.

Round A165K-T

Solder terminals

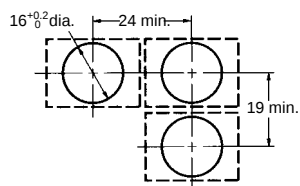


Note: See page 39 for panel cutouts.

■ Panel Cutouts

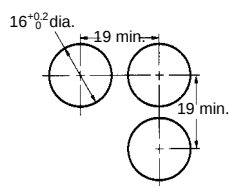
Rectangular A165□-J

(Top View)



Square A165□-A Round A165□-T

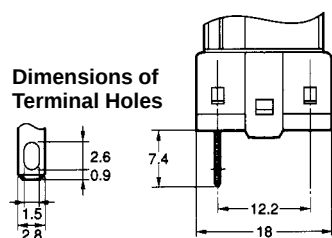
(Top View)



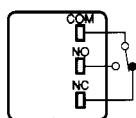
- Note:**
1. Make sure the thickness of the mounting panel is between 0.5 and 3.2 mm. If, however, a Switch Guard or Dust Cover is used, the thickness of the mounting panel must be between 0.5 and 2 mm.
 2. If the panel is to be finished with coating, etc., make sure that the panel meets the specified dimensions after coating.

■ Terminal Arrangement

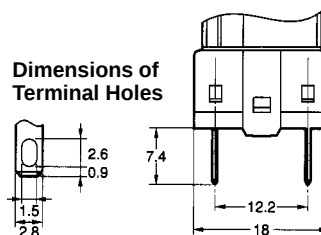
SPDT Switches



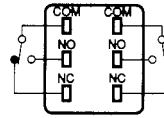
Terminal Arrangement (Bottom View)



DPDT Switches



Terminal Arrangement (Bottom View)



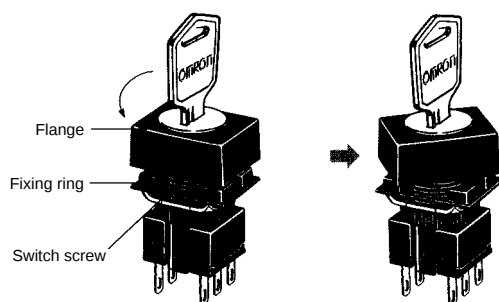
Installation

For details on mounting the Switch to a panel, and mounting and dismantling the Switch Unit, refer to installation details for the A16 Pushbutton Switch.

Flange Rotation

A165 Key-type Selector Switch

Fix the Switch screw and rotate the flange in 45° turns.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

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