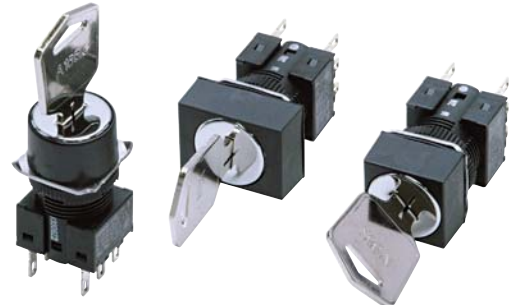


A165K

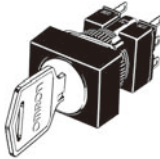
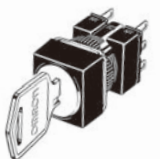
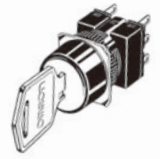
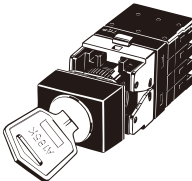
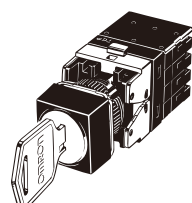
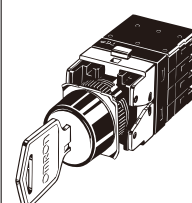


Separate Construction with Cylindrical 16-dia. Body

- Short mounting depth, less than 28.5 mm below panel
- Wide range of switching capacity from standard to microload
- Oil-resistant IP65 models



List of Models

	Model		
	Rectangular	Square	Round
Solder terminals	 A165K-J Series	 A165K-A Series	 A165K-T Series
Screw-less clamp connector	 A165K-J Series	 A165K-A Series	 A165K-T Series

Model Number Structure

Model Number Legend..... The model numbers used to order sets of Units are illustrated below. One set comprises the Selector, Switch, and 2 Keys.
For information on combinations, refer to *Ordering Information* on page 3.

(1) (2) (3)
A 1 6 5 K - J 3 M L - 2

(1) Shape of Selector

Symbol	Shape	Color
J	Rectangular	Black
A	Square	
T	Round	

(2) Number of Notches/Resetting Method

Symbol	No. of notches	Reset method	Key release position
2ML	2 notches	Manual	Left
2MR			Right
2M			Left and right
2AL	3 notches	Automatic	Left
3MC		Manual	Center
3MR			Right
3ML			Left
3M			Left, right, and center
3AC	3 notches	Automatic	Center

(3) Contact Configuration

Symbol	Type	Terminal
1	SPDT	Solder Terminal
2	DPDT	
2S	DPDT	Screw-less Clamp

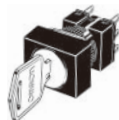
Note: Only DPDT contacts are available with 3-notch models.

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 Selector, Switch and 2 Keys.

Solder Terminals

Rectangular Models



A165K-J

Oil-resistant IP65

Number of notches	Output	Reset method	Key release position	Model
2 notches	SPDT	Manual	Left	A165K-J2ML-1
			Right	A165K-J2MR-1
		Automatic	Left and right	A165K-J2M-1
			Left	A165K-J2AL-1
	DPDT	Manual	Left	A165K-J2ML-2
			Right	A165K-J2MR-2
		Automatic	Left and right	A165K-J2M-2
			Left	A165K-J2AL-2
3 notches	DPDT	Manual	Center	A165K-J3MC-2
			Right	A165K-J3MR-2
			Left	A165K-J3ML-2
			Left, right, and center	A165K-J3M-2

Square Models



A165K-A

Oil-resistant IP65

Number of notches	Output	Reset method	Key release position	Model
2 notches	SPDT	Manual	Left	A165K-A2ML-1
			Right	A165K-A2MR-1
		Automatic	Left and right	A165K-A2M-1
			Left	A165K-A2AL-1
	DPDT	Manual	Left	A165K-A2ML-2
			Right	A165K-A2MR-2
		Automatic	Left and right	A165K-A2M-2
			Left	A165K-A2AL-2
3 notches	DPDT	Manual	Center	A165K-A3MC-2
			Right	A165K-A3MR-2
			Left	A165K-A3ML-2
			Left, right, and center	A165K-A3M-2

Round Models



A165K-T

Oil-resistant IP65

Number of notches	Output	Reset method	Key release position	Model
2 notches	SPDT	Manual	Left	A165K-T2ML-1
			Right	A165K-T2MR-1
		Automatic	Left and right	A165K-T2M-1
			Left	A165K-T2AL-1
	DPDT	Manual	Left	A165K-T2ML-2
			Right	A165K-T2MR-2
		Automatic	Left and right	A165K-T2M-2
			Left	A165K-T2AL-2
3 notches	DPDT	Manual	Center	A165K-T3MC-2
			Right	A165K-T3MR-2
			Left	A165K-T3ML-2
			Left, right, and center	A165K-T3M-2

Ordering Information

Ordering Individually Selectors and Switches can be ordered separately. Combinations that are not available as sets can be created using individual Units. Also, store the parts as spares for maintenance and repairs.

Operation Units (Listed on Page 5.)

Rectangular
(A165K-J)



Square
(A165K-A)



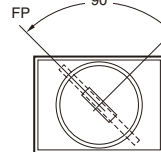
Round
(A165K-T)



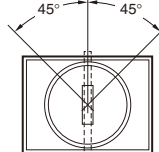
Two keys are provided.

(Standard condition when shipped)

Switches with
2 Notches
(75°)
90°



Switches with
3 Notches
(45°)
45°



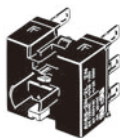
Note: The figures in parentheses are for self-resetting models.

FP: Free position

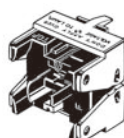


Socket Units (Listed on Page 5.)

Solder terminals



PCB terminals



Screw-less clamp
connector



Ordering Information

Ordering Individually Selectors and Switches can be ordered separately. Combinations that are not available as sets can be created using individual Units. Also, store the parts as spares for maintenance and repairs.

Selectors

Appearance	Number of notches	Reset method	Key release position	Model
Rectangular (A165K-J) 	2 notches	Manual		A165K-J2ML
				A165K-J2MR
		Automatic 		A165K-J2M
				A165K-J2AL
	3 notches	Manual		A165K-J3MC
				A165K-J3MR
				A165K-J3ML
				A165K-J3M
		Automatic 		A165K-J3AC
				A165K-A2ML
			A165K-A2MR	
			A165K-A2M	
Square (A165K-A) 	2 notches	Manual		A165K-A2ML
				A165K-A2MR
		Automatic 		A165K-A2AL
				A165K-A3MC
	3 notches	Manual		A165K-A3MR
				A165K-A3ML
				A165K-A3M
				A165K-A3AC
		Automatic 		A165K-T2ML
				A165K-T2MR
Round (A165K-T) 	2 notches	Manual		A165K-T2M
				A165K-T2AL
		Automatic 		A165K-T3MC
				A165K-T3MR
	3 notches	Manual		A165K-T3ML
				A165K-T3M
				A165K-T3AC
		Automatic 		

Switches

Appearance	Classification				Model
	Switch	2 notches	SPDT	Solder terminal	A16S-2N-1
			DPDT		A16S-2N-2
		3 notches	DPDT		A16S-3N-2
		2 notches	SPDT	PCB terminal	A16S-2N-1P
			DPDT		A16S-2N-2P

Switches with Screw-less Clamp

Appearance	Classification			Model	Remarks
	Common to standard load and microload.	DPDT	2 notches	A16-2S	Common to ones for pushbutton switches.
			3 notches	A16S-3N-2LS	---

Specifications

Approved Standard Ratings

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)

3 A at 250 VAC

3 A at 30 VDC

Ratings

Contacts

Rated voltage	Resistive load
125 VAC	5 A
250 VAC	3 A
30 VDC	3 A

Minimum applicable load: 1 mA at 5 VDC

Rated values are obtained from tests conducted under the following conditions.

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

Characteristics

Socket Units

Item	Type	Key-type Selector Switch
Allowable operating frequency	Mechanical	20 operations/minute max.
	Electrical	10 operations/minute max.
Insulation resistance		100 MΩ min. (at 500 VDC)
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 each terminal and ground	2,000 VAC, 50/60 Hz for 1 minute
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude (malfunction within 1 ms)
Shock resistance	Destruction	500 m/s ²
	Malfunction	150 m/s ² max. (malfunction within 1 ms)
Durability	Mechanical	250,000 operations min. (durability of key: 10,000 operations min.)
	Electrical	100,000 operations min.
Electric shock protection class		Class II
PTI (tracking characteristic)		175
Degree of contamination		3 (IEC60947-5-1)
Weight		Approx. 26.5 g (in the case of a DPDT switch key)
Ambient operating temperature		-10°C to 55°C (with no icing or condensation)
Ambient operating humidity		35% to 85%RH
Ambient storage temperature		-25°C to 65°C (with no icing or condensation)

Screw-less Clamp

Item	Type	Screw-less Clamp			
Recommended wire size		0.5 mm ² twisted wire or 0.8 mm-dia. solid wire			
Usable wires and tensile strength	Twisted wire	0.3 mm ²	0.5 mm ²	0.75 mm ²	1.25 mm ²
	Solid wire	0.5 mm dia.	0.8 mm dia.	1.0 mm dia.	---
	Tensile strength	10 N	20 N	30 N	40 N
Length of exposed wire		10 ±1 mm			
Compliant standards		JIS C 2811 Terminal Blocks for Industrial Use			

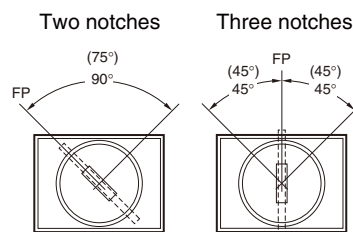
Contact Form

Name	Contact form
SPDT	

Operating Characteristics

Characteristics	Type	Key-type Selector Switch	
		2 notches	3 notches
Operating force (OF) max.		0.1 N·m	
Set position (SP)		90±5°	45° ^{+10°} ₀

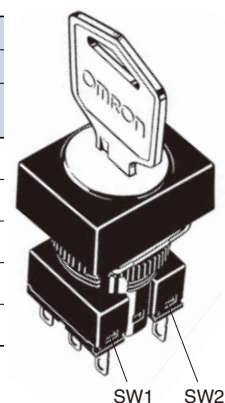
Operation Angle



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

Contact Configuration

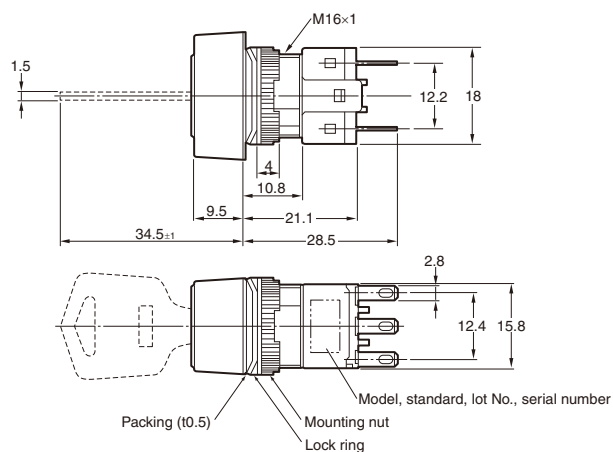
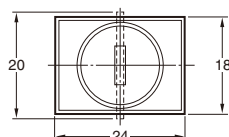
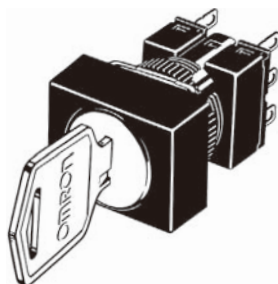
No. of notches	Contact configuration				
	SPDT		DPDT		
	Position	SW	Position	SW1	SW2
2 notches					
3 notches	---				



Dimensions

Rectangular A165K-J

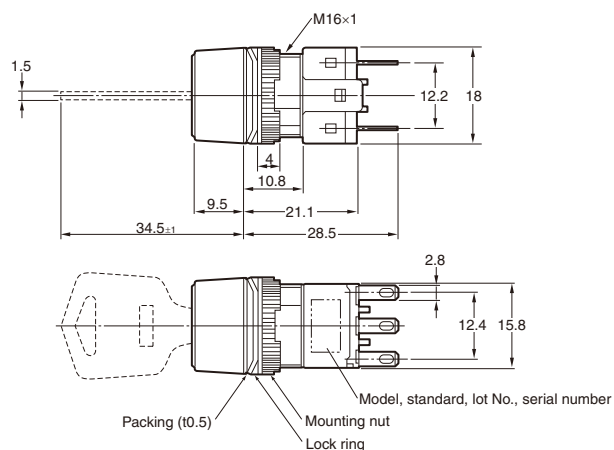
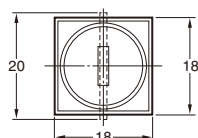
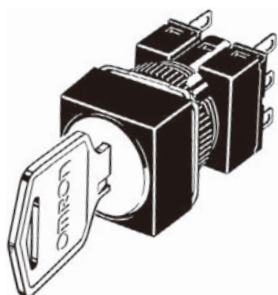
Solder terminals (tab terminals #110)



* Refer to the A165S/W for Panel cutouts.

Square A165K-A

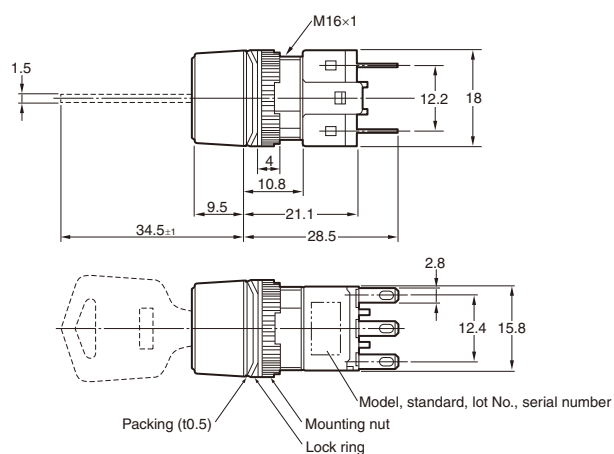
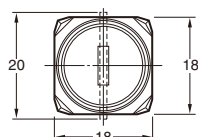
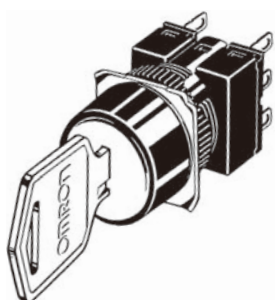
Solder terminals (tab terminals #110)



* Refer to the A165S/W for Panel cutouts.

Round A165K-T

Solder terminals (tab terminals #110)



* Refer to the A165S/W for Panel cutouts.