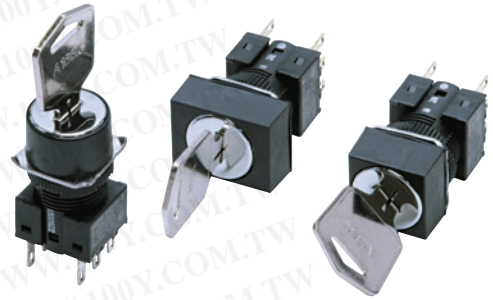



A165K

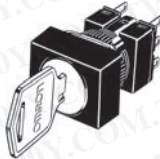
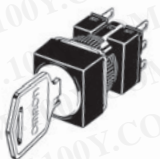
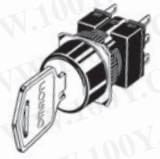
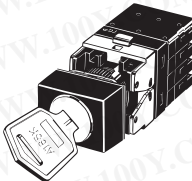
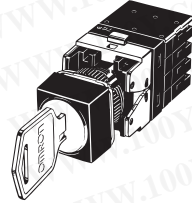
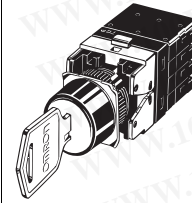
Separate Construction with Cylindrical 16-dia. Body

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



 Refer to *Safety Precautions for All Pushbutton Switches and Safety Precautions* on page 11.

List of Models

	Rectangular	Model Square	Round
Solder terminals	 <p>A165K-J Series</p>	 <p>A165K-A Series</p>	 <p>A165K-T Series</p>
Screwless clamp connector	 <p>A165K-J Series</p>	 <p>A165K-A Series</p>	 <p>A165K-T Series</p>

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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.

A 1 6 5 K - (1) J (2) 3 ML **-** (3) 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	3 notches	Automatic	Left, right, and center
3AC			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.

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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
			Left and right	A165K-J2M-1
	DPDT	Automatic	Left	A165K-J2AL-1
			Right	A165K-J2ML-2
			Left and right	A165K-J2MR-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
			Left and right	A165K-A2M-1
	DPDT	Automatic	Left	A165K-A2AL-1
			Right	A165K-A2ML-2
			Left and right	A165K-A2MR-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


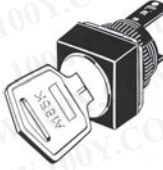

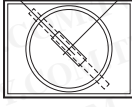
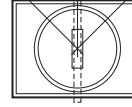
Number of notches	Output	Reset method	Key release position	Model
2 notches	SPDT	Manual	Left	A165K-T2ML-1
			Right	A165K-T2MR-1
			Left and right	A165K-T2M-1
	DPDT	Automatic	Left	A165K-T2AL-1
			Right	A165K-T2ML-2
			Left and right	A165K-T2MR-2
3 notches	DPDT	Manual	Center	A165K-T3MC-2
			Right	A165K-T3MR-2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

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Ordering Information

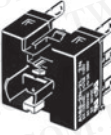
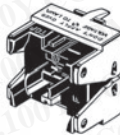

Ordering Individually Selectors and Switches can be ordered separately. Combinations that are not available as sets can be created using individual Units. Also, store the parts as spares for maintenance and repairs.

Operation Units (Listed on Page 5.)

<p>Rectangular (A165K-J)</p>  <p>Two keys are provided.</p>	<p>Square (A165K-A)</p> 	<p>Round (A165K-T)</p> 
<p>(Standard condition when shipped)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Switches with 2 Notches</p> <p>(75° 90°)</p>  </div> <div style="text-align: center;"> <p>Switches with 3 Notches</p> <p>(45° FP (45°) 45°)</p>  </div> </div> <p>Note: The figures in parentheses are for self-resetting models. FP: Free position</p>		



Socket Units (Listed on Page 5.)




<p>Solder terminals</p> 	<p>PCB terminals</p> 	<p>Screw-less clamp connector</p> 
--	---	--

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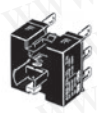
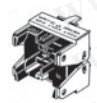
Ordering Information

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
		⊗	A165K-J2M	
	3 notches	Manual	⊙	A165K-J2AL
			⊠	A165K-J3MC
		Automatic	⊘	A165K-J3MR
⊗			A165K-J3ML	
Automatic	⊠	A165K-J3M		
	⊠	A165K-J3AC		
Square (A165K-A) 	2 notches	Manual	⊙	A165K-A2ML
			⊘	A165K-A2MR
		⊗	A165K-A2M	
	3 notches	Automatic	⊙	A165K-A2AL
			⊠	A165K-A3MC
		Manual	⊘	A165K-A3MR
			⊙	A165K-A3ML
		Automatic	⊗	A165K-A3M
			⊠	A165K-A3AC
Round (A165K-T) 	2 notches	Manual	⊙	A165K-T2ML
			⊘	A165K-T2MR
		⊗	A165K-T2M	
	3 notches	Automatic	⊙	A165K-T2AL
			⊠	A165K-T3MC
		Manual	⊘	A165K-T3MR
			⊙	A165K-T3ML
		Automatic	⊗	A165K-T3M
			⊠	A165K-T3AC

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	Non-lighted	A16-2S	Common to ones for pushbutton switches.
			3 notches		A16S-3N-2LS	

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Ordering Information

Accessories and Tools (Order Separately)


Accessories

Name	Appearance	Classification	Model	Remarks
Panel Plugs		Rectangular	A16ZJ-3003	Used for covering the panel cutouts for future panel expansion. Degree of protection: IP40 Color: Black
		Square	A16ZA-3003	
		Round	A16ZT-3003	

Tools

Name	Appearance	Model	Applicable types					Remarks
			Pushbutton Switch	Knob-type Selector Switch	Key-type Selector Switch	Emergency Stop Switch	Indicator	
Screw Fitting		A16Z-3004	Yes	Yes	Yes	Yes	Yes	Convenient for ganged installation.
Extractor		A16Z-5080	Yes	Yes	Yes	Yes	Yes	Convenient for extracting the Lamp from a Solder-terminal Socket Unit.

Key

Appearance	Model
	A165K-KEY

Note: Two Keys are provided.

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Ordering as a Set: Refer to page 3.

- Specifications, and dimensions: Refer to page 7 to 10.
- Accessories, replacements, and tools: Refer to this page.

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)

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

TÜV (EN60947-5-1) (Low Voltage Directive)

3 A at 250 VAC
3 A at 30 VDC

CCC (GB14048.5)

5 A at 125 VAC
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			

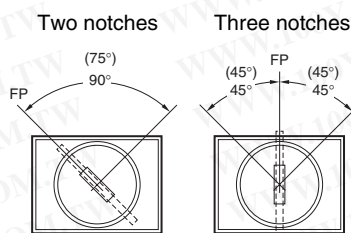
Contact Form

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

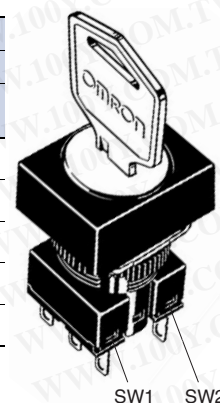
Operation Angle



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

Contact Configuration

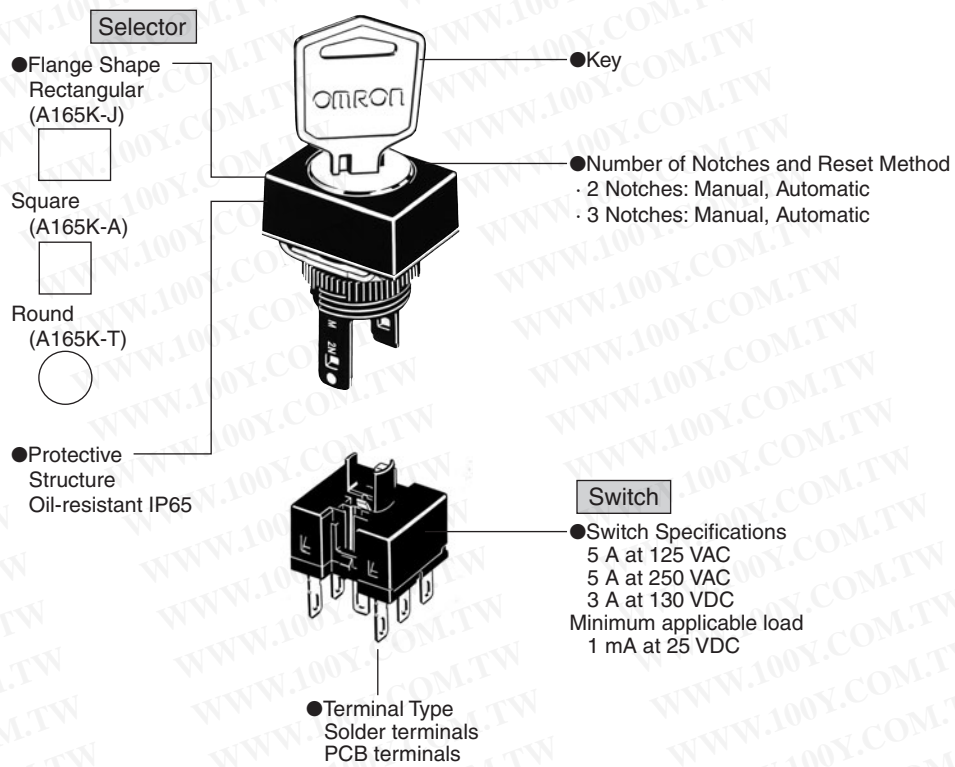
No. of notches	Contact configuration				
	SPDT		DPDT		
	Position	SW	Position	SW1	SW2
2 notches	↻	↻	↻	↻	↻
	↻	↻	↻	↻	↻
3 notches	---	---	↻	↻	↻
	---	---	↻	↻	↻
	---	---	↻	↻	↻



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Nomenclature

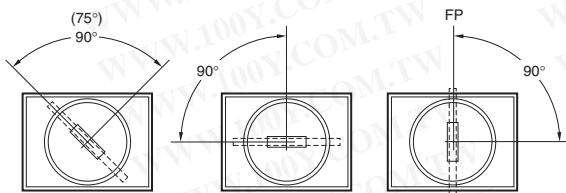
Model Structure



The flange can be rotated to easily change the operation angle of the knob.

For information on rotating the flange, refer to the A165S/W datasheet.

Example: Knob-type Selector Switch with Two Notches

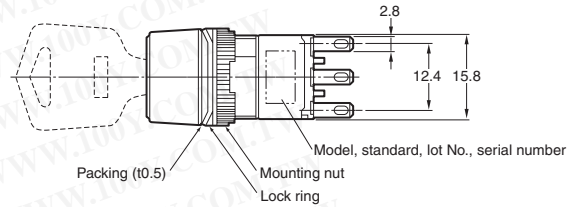
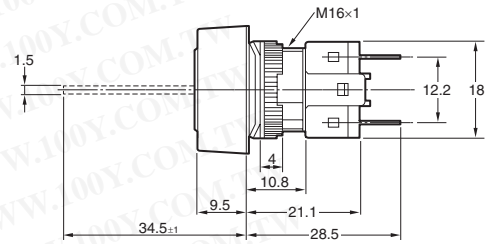
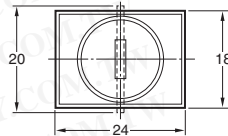
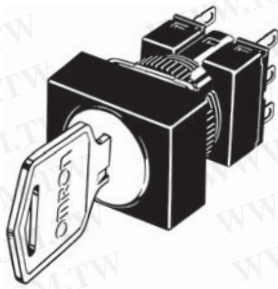


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Dimensions The Dimension shows 2-switch outputs.

Rectangular A165K-J

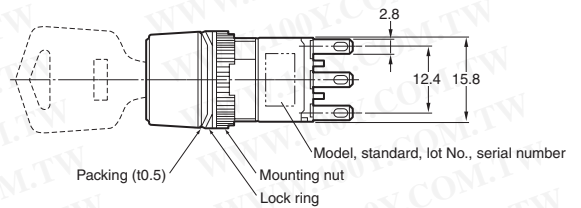
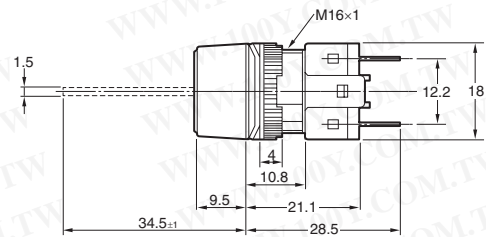
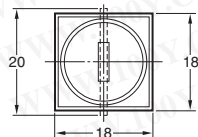
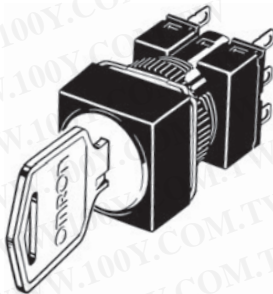
Solder terminals (tab terminals #110)



* Refer to the A165S/W for Panel cutouts.

Square A165K-A

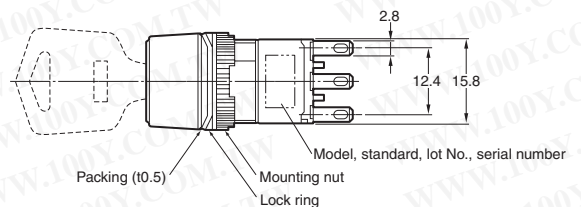
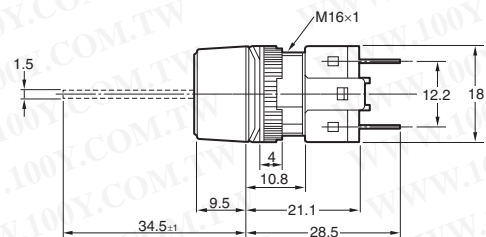
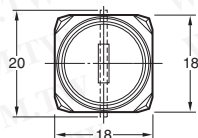
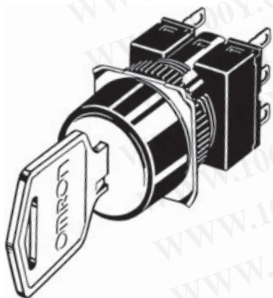
Solder terminals (tab terminals #110)



* Refer to the A165S/W for Panel cutouts.

Round A165K-T

Solder terminals (tab terminals #110)



* Refer to the A165S/W for Panel cutouts.

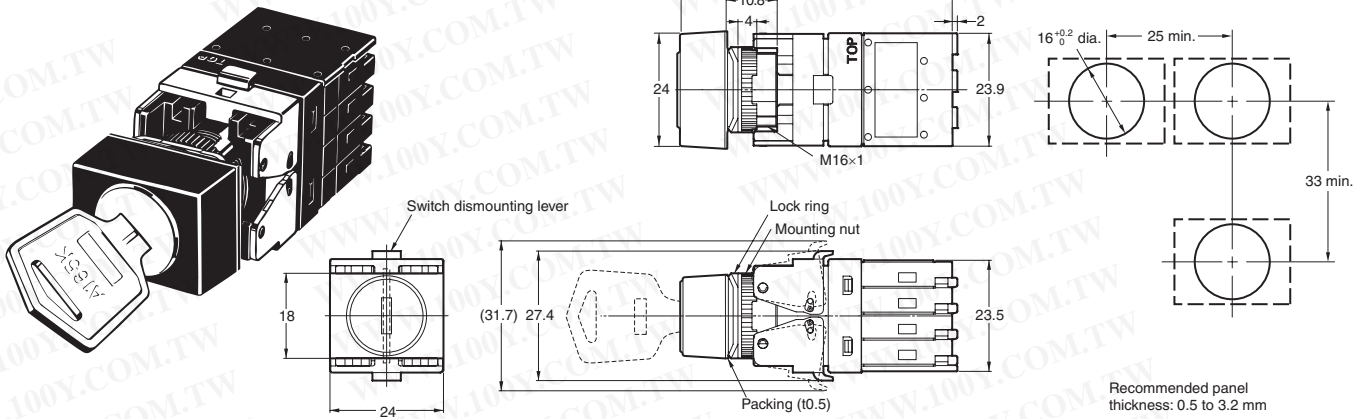
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Dimensions

• The Dimension shows 2-switch outputs. • The lamp terminal is also provided with non-lighted models. • A rectangular model is listed as an example. (Unit: mm)

Rectangular A165K□-2S

Screw-Less Clamp



Terminal Arrangement

For information on the terminal arrangement, refer to the A165S/W datasheet.

Panel Mounting and Socket Unit Mounting and Removal

Refer to the A16 Pushbutton Switch datasheet.

Flange Rotation

Refer to the A165S/W datasheet.

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