

# DIP Switches



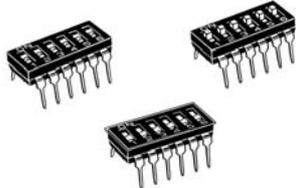
<b>A6H</b>	Compact Surface-mounting DIP Switch (Half-pitch, Slide Type)
<b>A6T</b>	DIP Switch (Slide Type)
<b>A6S-H</b>	Surface-mounting DIP Switch (Slide Type)
<b>A6E</b>	DIP Switch (Slide Type)
<b>A6ER</b>	DIP Switch (Piano Type)

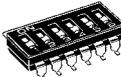
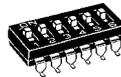
<b>A6D</b>	Sealed DIP Switch (Slide Type)
<b>A6DR</b>	Sealed DIP Switch (Piano Type)
<b>A6R/A6RV</b>	Rotary DIP Switch
<b>A6A</b>	Sealed Rotary DIP Switch
<b>A6C/A6CV</b>	Sealed Rotary DIP Switch

***Touch it! Switch it!***

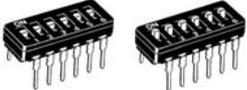
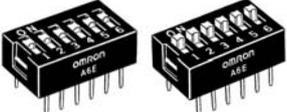
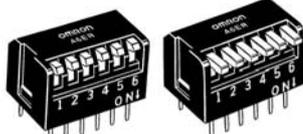
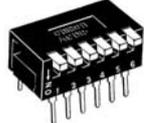
***Manual Switches by OMRON***

# Selection Guide

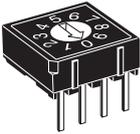
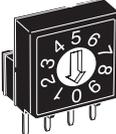
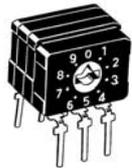
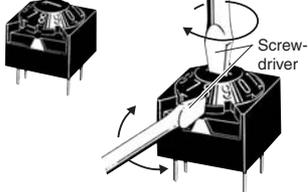
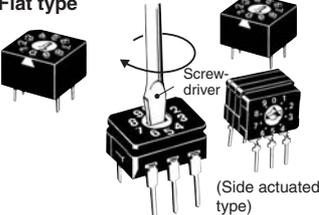
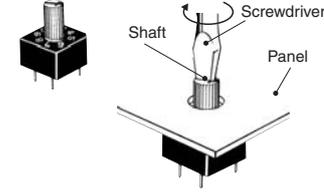
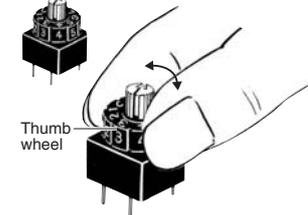
Model		A6H						A6T		
Appearance										
Actuator		Flat						Flat		Raised
Sealing		---			Seal tape			---	Seal tape	---
Packaging		Stick	Embossed taping		Stick	Embossed taping		Stick		
			Standard reel	Small reel		Standard reel	Small reel			
Terminals		Surface-mounting terminals						PCB terminals		
Automatic mounting		Yes								
Washable		No			Yes			No	Yes	No
No. of poles	1	---	---	---	---	---	---	A6T-1101	A6T-1102	A6T-1104
	2	A6H-2101	A6H-2101-P	A6H-2101-PM	A6H-2102	A6H-2102-P	A6H-2102-PM	A6T-2101	A6T-2102	A6T-2104
	3	---	---	---	---	---	---	A6T-3101	A6T-3102	A6T-3104
	4	A6H-4101	A6H-4101-P	A6H-4101-PM	A6H-4102	A6H-4102-P	A6H-4102-PM	A6T-4101	A6T-4102	A6T-4104
	5	---	---	---	---	---	---	A6T-5101	A6T-5102	A6T-5104
	6	A6H-6101	A6H-6101-P	A6H-6101-PM	A6H-6102	A6H-6102-P	A6H-6102-PM	A6T-6101	A6T-6102	A6T-6104
	7	---	---	---	---	---	---	A6T-7101	A6T-7102	A6T-7104
	8	A6H-8101	A6H-8101-P	A6H-8101-PM	A6H-8102	A6H-8102-P	A6H-8102-PM	A6T-8101	A6T-8102	A6T-8104
	9	---	---	---	---	---	---	A6T-9101	A6T-9102	A6T-9104
	10	A6H-0101	A6H-0101-P	A6H-0101-PM	A6H-0102	A6H-0102-P	A6H-0102-PM	A6T-0101	A6T-0102	A6T-0104
RoHS compliance		Compliant						Compliant		
Page		9						11		

Model		A6S-H								
Appearance										
Actuator		Flat						Raised		
Sealing		---			Seal tape			---		
Packaging		Stick	Embossed taping		Stick	Embossed taping		Stick	Embossed taping	
			Standard reel	Small reel		Standard reel	Small reel		Standard reel	Small reel
Terminals		Surface-mounting terminals								
Automatic mounting		Yes								
Washable		No			Yes			No		
No. of poles	1	A6S-1101-H	A6S-0101-PH	---	A6S-1102-H	A6S-1102-PH	---	A6S-1104-H	A6S-1104-PH	---
	2	A6S-2101-H	A6S-2101-PH	---	A6S-2102-H	A6S-2102-PH	A6S-2102-PMH	A6S-2104-H	A6S-2104-PH	---
	3	A6S-3101-H	A6S-3101-PH	A6S-3101-PMH	A6S-3102-H	A6S-3102-PH	---	A6S-3104-H	---	---
	4	A6S-4101-H	A6S-4101-PH	A6S-4101-PMH	A6S-4102-H	A6S-4102-PH	A6S-4102-PMH	A6S-4104-H	A6S-4104-PH	A6S-4104-PMH
	5	A6S-5101-H	---	---	A6S-5102-H	A6S-5102-PH	---	A6S-5104-H	A6S-5104-PH	---
	6	A6S-6101-H	---	A6S-6101-PMH	A6S-6102-H	A6S-6102-PH	A6S-6102-PMH	A6S-6104-H	A6S-6104-PH	A6S-6104-PMH
	7	A6S-7101-H	A6S-7101-PH	---	A6S-7102-H	A6S-7102-PH	---	A6S-7104-H	---	---
	8	A6S-8101-H	A6S-8101-PH	A6S-8101-PMH	A6S-8102-H	A6S-8102-PH	A6S-8102-PMH	A6S-8104-H	A6S-8104-PH	A6S-8104-PMH
	9	A6S-9101-H	---	---	A6S-9102-H	A6S-9102-PH	---	A6S-9104-H	---	---
	10	A6S-0101-H	---	A6S-0101-PMH	A6S-0102-H	A6S-0102-PH	A6S-0102-PMH	A6S-0104-H	---	A6S-0104-PMH
RoHS compliance		Compliant								
Page		13								

## Selection Guide

Model		A6D		A6E		A6ER		A6DR	
Appearance									
Actuator		Flat	Raised	Flat	Raised	Side (short-lever)	Side (long-lever)	Side (long-lever)	
Sealing		Internal seal tape (equivalent to IP64)		---		---		Internal seal tape (equivalent to IP64)	
Terminals		PCB terminals							
Automatic mounting		Yes		No					
Washable		Yes	Yes	No	No	No	No	Yes	
No. of poles	1	---	---	---	---	---	---	---	
	2	A6D-2100	A6D-2103	A6E-2101	A6E-2104	A6ER-2101	A6ER-2104	A6DR-2100	
	3	---	---	A6E-3101	A6E-3104	A6ER-3101	A6ER-3104	---	
	4	A6D-4100	A6D-4103	A6E-4101	A6E-4104	A6ER-4101	A6ER-4104	A6DR-4100	
	5	---	---	A6E-5101	A6E-5104	A6ER-5101	A6ER-5104	---	
	6	A6D-6100	A6D-6103	A6E-6101	A6E-6104	A6ER-6101	A6ER-6104	A6DR-6100	
	7	---	---	A6E-7101	A6E-7104	A6ER-7101	A6ER-7104	---	
	8	A6D-8100	A6D-8103	A6E-8101	A6E-8104	A6ER-8101	A6ER-8104	A6DR-8100	
	9	---	---	A6E-9101	A6E-9104	A6ER-9101	A6ER-9104	---	
	10	A6D-0100	A6D-0103	A6E-0101	A6E-0104	A6ER-0101	A6ER-0104	A6DR-0100	
RoHS compliance		Compliant		Compliant		Compliant		Compliant	
Page		19		16		16		19	

# Selection Guide

Model	A6R		A6RV		A6A		A6C		A6CV					
Appearance														
Sealing	---				Internal seal tape (equivalent to IP64)									
Terminals	PCB terminals													
No. of switching positions	10		16		10		16		10		16			
Type	<b>Standard type</b>  The rotary switch can be turned from the top or the side.		BCD/hexadecimal 1-2-4-8 (See note 1.)		---		---		A6A-10R		A6A-16R			
			BCD/hexadecimal 1-2-4-8 complement (See note 2.)		---		---		---		A6A-10C		A6A-16C	
	<b>Flat type</b>  Switching part contained within flat surface. No raised edges allows space saving.		BCD/hexadecimal 1-2-4-8		A6R-101RF	A6R-161RF	A6RV-101RF	A6RV-161RF	A6A-10RF	A6A-16RF	A6C-10R(N)	A6C-16R(N)	A6CV-10R	A6CV-16R
			BCD/hexadecimal 1-2-4-8 complement		---		---		---		A6A-10CF		A6A-16CF	
	<b>Extended shaft type</b>  Extended shaft enables switching to be performed from outside the device through a panel or another kind of cover.		BCD/hexadecimal 1-2-4-8		A6R-101RS	A6R-161RS	A6RV-101RS	A6RV-161RS	A6A-10RS	A6A-16RS	---		---	
			BCD/hexadecimal 1-2-4-8 complement		---		---		---		A6A-10CS		A6A-16CS	
	<b>Thumbwheel type</b>  Thumbwheel allows easy switching using fingers.		BCD/hexadecimal 1-2-4-8		---		---		A6A-10RW		A6A-16RW		---	
			BCD/hexadecimal 1-2-4-8 complement		---		---		---		A6A-10CW		A6A-16CW	
RoHS compliance	Compliant				Compliant		Compliant		Compliant					
Page	22				26		30							

**Note: 1.** "BCD/hexadecimal 1-2-4-8" is a binary code that takes the value 1 for voltages that are high with respect to ground and takes the value 0 for voltages that are low with respect to ground.

**2.** "BCD/hexadecimal 1-2-4-8 complement" is a binary code that take the opposite value to "BCD/hexadecimal 1-2-4-8," i.e., takes the value 0 for high voltages and 1 for low voltages.

# Safety Precautions

## ■ Cautions

Use the DIP Switch within the rated voltage and current ranges, otherwise the DIP Switch may have a shortened life expectancy, radiate heat, or burn out. This particularly applies to the instantaneous voltages and currents when switching.

## ■ Correct Use

### Circuit Design

Although the minimum current is 10  $\mu$ A (3.5 VDC), contact reliability may need to be improved in some cases. This is particularly true when switching causes an increase in instantaneous current, such as in C-MOS IC applications. Do not let the peak current exceed the rated value here or any other time.

Only BCD/hexadecimal 1-2-4-8 code is available for A6C/A6CV/A6R/A6RV models. If BCD/hexadecimal 1-2-4-8 complement code is required, make the appropriate provisions in the circuit.

### Mounting

Normally the default striker setting is OFF for slide-type DIP Switches and the default rotor setting is 0 for Rotary DIP Switches. Do not change these settings when mounting, soldering, washing or drying Switches. In rare cases, the striker may be deformed by heat generated during soldering.

#### 1. Automatic Insertion Machine

Use a body stopper system for the chute stopper of automatic insertion machines. When mounting Switches using an insertion machine incorporating a half-lead stopper, make sure the machine will not deform the terminals of the Switch, or improper insertion may result. Check actual mounting conditions prior to using a half-lead stopper system.

A printed circuit board that is 1.2 to 1.6 mm thick is recommended.

Holes on the PCB should be at least 0.9 mm in diameter for automatic insertion.

#### 2. Manual or IC Socket Insertion

Commercially available insertion tools are recommended for mounting ICs on PCBs.

Terminal pitch, dimensions and other features are identical to that of standard ICs for IC socket compatibility (except for the A6S-H and A6H).

Align the terminals so they slide in simultaneously when the Switch is inserted into socket holes or into mounting holes pre-drilled at the specified dimensions. Apply downward force on the Switch until the terminals are properly seated on the PCB.

Do not try to remove a Switch by inserting a screwdriver between it and the PCB, and then twisting the screwdriver to peel the Switch off. Use a commercially available inserter/remover to remove the Switch.

### Soldering

Observe the following conditions when soldering the DIP Switch.

#### 1. General Precautions for Soldering

Make sure that the striker of slide-type DIP Switches is set fully to either ON or OFF. (For A6E and A6ER models, however, set the Switch to OFF before soldering.) Make sure that Rotary DIP Switches are correctly set to 0. Misalignment may result in reduced sensitivity due to the soldering heat.

Before soldering the Switch on a PCB, make sure there is no unnecessary space between the Switch and the PCB.

Before soldering the Switch on a multilayer PCB, conduct a test to make sure the Switch will not be deformed by soldering heat on the pattern or land of the multilayer PCB.

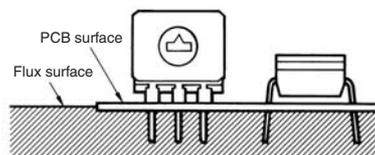
#### 2. Automatic Soldering Bath (Except A6S-H/A6H)

Soldering temperature: 260°C max.

Soldering time: 5 s max. for a 1.6-mm thick, single-side PCB

Do not use an automatic soldering bath or manual soldering for A6S-H or A6H models.

Confirm in advance that flux will not bubble up onto the side of the PCB to which the Switch is mounted. Depending on the type of Switch, the flux may have an adverse effect if it enters the Switch.

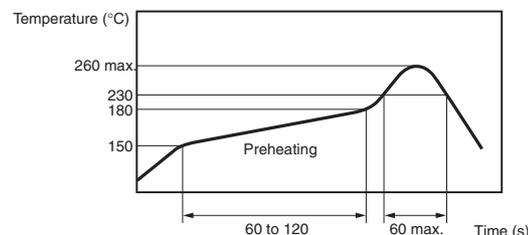


The A6S-H and A6H are designed specifically for reflow soldering. Do not use an automatic soldering bath or manual soldering for these models.

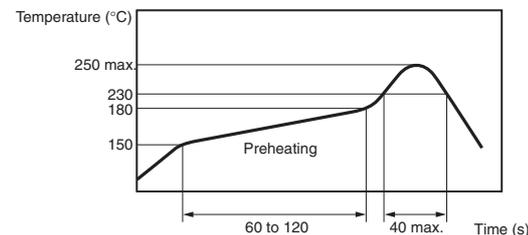
#### 3. Reflow Soldering

Observe the following conditions for reflow soldering the A6S-H and A6H models. (Measurement location: Top of Switch)

##### A6S-H Soldering Conditions



##### A6H Soldering Conditions



Do not use reflow soldering for any models other than the A6S-H and A6H. Otherwise the plastic case may melt or deform.

The soldering conditions and the temperature around the Switch may vary with the type of reflow bath. Check the temperature profile and confirm soldering conditions as well as the amount of heat applied to the Switch prior to soldering.

#### 4. Manual Soldering (Except A6S-H/A6H)

Soldering temperature: 350°C at the tip of the soldering iron.

Soldering time: 3 s max. for a 1.6-mm thick, single-side PCB

Do not solder the Switch more than twice including any rectification soldering. An interval of five minutes is required between the first and second soldering.

#### 5. Using Flux

Making mistakes in the type of flux or in the amount or method in which it is applied can cause flux to enter the interior of the Switch, with adverse effects on Switch performance. Assess the proper flux, conditions, and methods prior to using it.

**Washing**

**1. Washable and Non-washable Models**

The models for which washing are possible are shown in the following table.

<b>Washable</b>	A6A, A6C, A6CV, A6D, A6DR, A6T (with seal tape), A6S-H (with seal tape), A6H (with seal tape)
<b>Non-washable</b>	A6R, A6RV, A6T (standard/raised actuator), A6S-H (standard/raised actuator), A6E, A6ER

**2. Washing Procedure**

Ultrasonic cleaning is not available for slide-type DIP Switches with seal tape. These models may be wiped or dipped into washing agents for one minute maximum.

Slide-type DIP Switches with seal tape can be washed as long as the seal tape is not removed or pasted before washing. Non-compliance here will cause the quality of the seal to decline.

Washing equipment incorporating more than one washing bath can be used to clean washable models, provided that the washable models are cleaned for one minute maximum per bath and the total cleaning time does not exceed three minutes.

**3. Washing Agents**

Apply alcohol-based solvents to clean washable models. Do not apply water or any other agents to clean any washable models, as such agents may degrade the materials or performance of the Switch.

**4. Washing Precautions**

Do not impose any external force on washable models while washing.

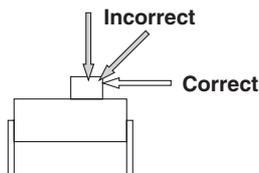
Do not clean washable models immediately after soldering. The cleaning agent may be absorbed into the incomplete seal through respiration as the Switch cools. Wait for at least three minutes after soldering before cleaning.

Do not use washable Switches submerged in water or in locations exposed to water.

**Handling**

**1. Slide-type DIP Switch operation**

Do not apply excessive operating force to the Switch. Otherwise the Switch may be damaged or deformed, and the switch mechanism may malfunction as a result. Apply an operating force not exceeding 9.8 N. (Operate the actuator one operation at a time. Do not operate the Switch from the top of actuator. Otherwise the actuator may be damaged, so operate the Switch from the lower part of the actuator.) Apply the operating load from the side of the striker. Do not apply a load from an angle or from above the striker. Doing so may deform the Switch contact.



Set slide-type DIP Switches with a tiny, rounded object, such as the tip of a ball-point pen or a small screwdriver. Do not set the DIP Switch using tweezers or any other sharp object that may damage it. Do not set the DIP Switch using the point of a mechanical pencil, or lead powder or fragments may fall into the Switch and internal circuit board, causing the DIP Switch to malfunction and reducing the dielectric strength of the circuit board.

Although raised-type and piano-type strikers can be operated by fingertip, do not push too hard or too fast because this will deform or damage the striker.

When setting or operating the A6H, use narrow-headed tweezers or similar implement (without a sharp end), to enable smooth, horizontal operation. Pushing the striker at an angle, or applying excessive load from above may damage or deform the striker and thereby prevent operation.

**2. Rotary DIP Switch Operation**

Set rotary-type DIP Switches with a flat-blade screwdriver that fits into the screwdriver groove. Using a screwdriver of inappropriate dimensions, or using a tool other than a flat-blade screwdriver may cause damage to the groove that may make the Switch impossible to operate.

Insert the flat-blade screwdriver vertically to operate the Switch. The Switch may be damaged if the screwdriver is inserted at an angle.

Do not use excessive force to operate the Switch, or it may damage or deform the Switch.

**3. Setting**

Set the Switch to the correct position before use. An incorrectly aligned position may result in incorrect signals.

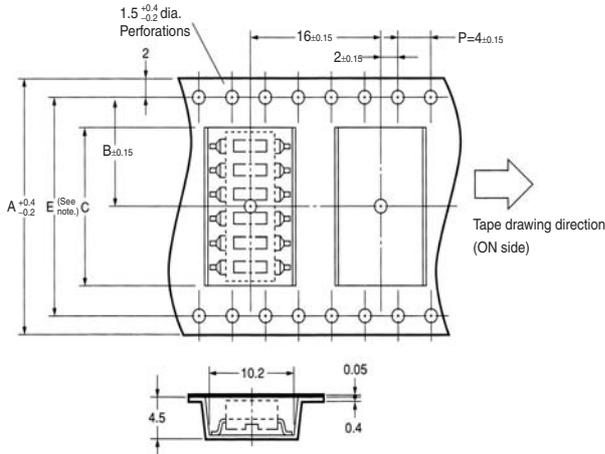
**Rotary DIP Switch Operation**

Item	A6R/A6RV	A6A	A6C/A6CV	
	Top/Side operation, flat type	Standard type, flat type	Shaft type, wheel type	Top/Side operation type
Screwdriver groove	Depth: 1.0	Depth: 0.9	Depth: 0.9	Depth: 1.0
Applicable screwdriver: A	1.8 to 2.1	3.5 to 3.8	2.0 to 2.4	
Applicable screwdriver: B	0.7 to 0.8	0.4 to 0.5	0.5 to 0.6	
Part names				

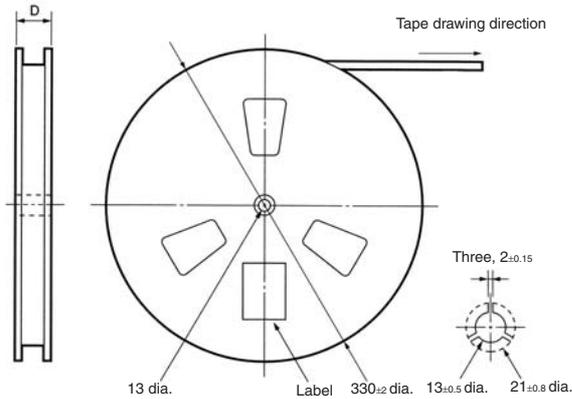
**Note:** All units are in millimeters unless otherwise indicated.

**■ Packing specifications**

• A6S-H models with embossed tapping specifications are shown below.



**Note:** The perforations along both sides are for Switches with 7 poles or more. The perforations on the bottom of the diagram are not provided on Switches with 6 poles or less.



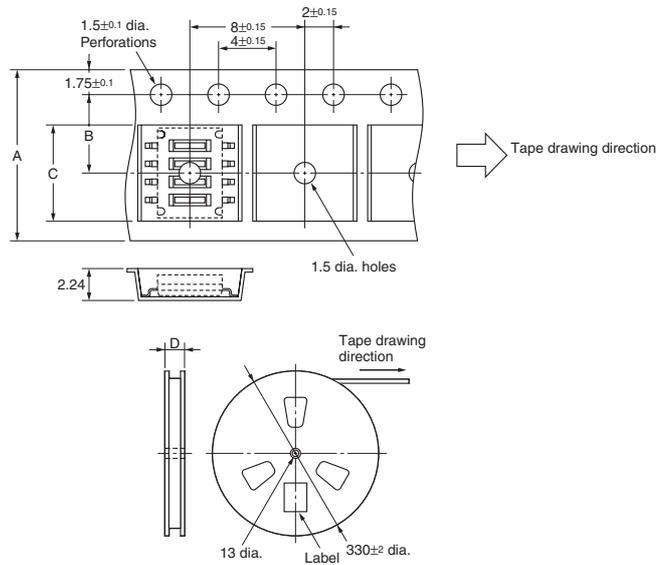
<b>Applicable models</b>	A6S-□102-PH
<b>Standard</b>	Conforms to JEITA.
<b>Package quantity</b>	900 per reel

<b>Applicable models</b>	A6S-□10□-PMH
<b>Standard</b>	Conforms to JEITA.
<b>Package quantity</b>	400 per reel

**Note:** The dimensions and quantity of A6S-□104-PH/PMH and 1-pole models are different. Enquire for details separately.

No. of poles	2	3	4	5	6	7	8	9	10
<b>A</b> <sup>+0.4</sup> <sub>-0.2</sub>	16	24	24	24	24	32	32	44	44
<b>B</b> ±0.15	7.5	11.5	11.5	11.5	11.5	14.2	14.2	20.2	20.2
<b>C</b>	6.6	9.1	11.6	14.2	16.7	19.2	21.7	24.3	26.8
<b>D</b>	(22)	(30)	(30)	(30)	(30)	(38)	(38)	(50)	(50)
<b>E</b>	---	---	---	---	---	28.4	28.4	40.4	40.4

• A6H models with embossed tapping specifications are shown below.



<b>Applicable models</b>	A6H-□102-P
<b>Standard</b>	Conforms to JEITA.
<b>Package quantity</b>	4,000 per reel

<b>Applicable models</b>	A6H-□10□-PM
<b>Standard</b>	Conforms to JEITA.
<b>Package quantity</b>	500 per reel

No. of poles	2	4	6	8	10
<b>A</b> <sup>+0.3</sup> <sub>-0.1</sub>	12	12	24	24	24
<b>B</b> ±0.13	5.5	5.5	11.5	11.5	11.5
<b>C</b>	(4.2)	(6.6)	(9.2)	(11.7)	(14.4)
<b>D</b>	(18)	(18)	(30)	(30)	(30)

## RoHS Compliant

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RoHS Compliant
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The "RoHS Compliant" designation indicates that the listed models do not contain the six hazardous substances covered by the RoHS Directive.

Reference: The following standards are used to determine compliance for the six substances.

- Lead: 1,000 ppm max.
- Mercury: 1,000 ppm max.
- Cadmium: 100 ppm max.
- Hexavalent chromium: 1,000 ppm max.
- PBB: 1,000 ppm max.
- PBDE: 1,000 ppm max.

### Ultra-low Profile, Half-pitch, DIP Switch for High-density Mounting

- Industry's lowest-class profile of 1.55 mm.
- Half-pitch (1.27-mm) design allows greater compactness and reduces mounting space by 63% (compared with conventional models).
- Washable, seal tape models available.
- Embossed taping models available for automatic mounting. (SQ reel (small reel) also available)



RoHS Compliant (Refer to page 8 for details.)

## Ordering Information

Type and color of actuator		Flat (white)					
		Standard models			Models with seal tape		
Packaging							
No. of poles	Quantity per package	Stick models	Embossed taping		Stick models	Embossed taping	
			Standard reel (units of 4,000)	Small reel (units of 500)		Standard reel (units of 4,000)	Small reel (units of 500)
2	125	A6H-2101	A6H-2101-P	A6H-2101-PM	A6H-2102	A6H-2102-P	A6H-2102-PM
4	75	A6H-4101	A6H-4101-P	A6H-4101-PM	A6H-4102	A6H-4102-P	A6H-4102-PM
6	54	A6H-6101	A6H-6101-P	A6H-6101-PM	A6H-6102	A6H-6102-P	A6H-6102-PM
8	40	A6H-8101	A6H-8101-P	A6H-8101-PM	A6H-8102	A6H-8102-P	A6H-8102-PM
10	33	A6H-0101	A6H-0101-P	A6H-0101-PM	A6H-0102	A6H-0102-P	A6H-0102-PM

**Note:** Orders must be made in integral multiples of the quantities given.

## Specifications

### ■ Ratings/Characteristics

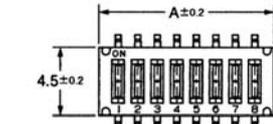
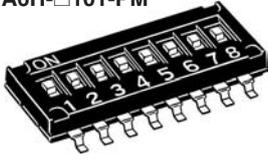
<b>Switching capacity</b>	25 mA at 24 VDC 10 $\mu$ A (minimum current) at 3.5 VDC
<b>Ambient operating temperature</b>	-20 to 70°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35% to 90% (at 5 to 35°C)
<b>Insulation resistance</b>	100 M $\Omega$ min. (at 250 VDC)
<b>Contact resistance</b>	200 m $\Omega$ max. (initial value)
<b>Dielectric strength</b>	300 VAC for 1 min between terminals of the same polarity, and between terminals of different polarity
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
<b>Shock resistance</b>	Malfunction: 300 m/s <sup>2</sup> min.
<b>Life expectancy</b>	Mechanical: 1,000 operations min. Electrical: 1,000 operations min.
<b>Operating force</b>	0.29 to 4.9 N {30 to 500 gf}
<b>Enclosure rating</b>	Equivalent to IP40
<b>Weight</b>	0.06 g (2 poles) 0.09 g (4 poles) 0.12 g (6 poles) 0.15 g (8 poles) 0.18 g (10 poles)

# Dimensions

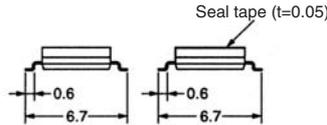
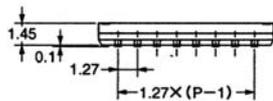
- Note:** 1. All units are in millimeters unless otherwise indicated.  
 2. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

## Standard

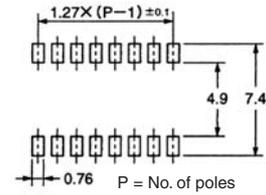
- A6H-□101
- A6H-□101-P
- A6H-□101-PM



Standard With seal tape

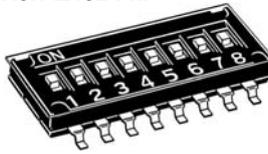


## Dimensions of PCB pad (Top View)



## With Seal Tape

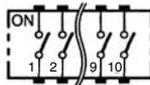
- A6H-□102
- A6H-□102-P
- A6H-□102-PM



No. of poles	Model		Dimension A
2	A6H-2101	A6H-2102	3.77
4	A6H-4101	A6H-4102	6.31
6	A6H-6101	A6H-6102	8.85
8	A6H-8101	A6H-8102	11.39
10	A6H-0101	A6H-0102	13.93

# Installation

## Internal Connections (Top View)



# Precautions

Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

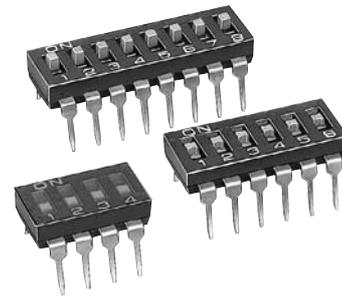
**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

## DIP Switch (Slide Type)

## A6T

### DIP Switch with PCB Terminals in a Wide Assortment of Pole Configurations

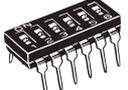
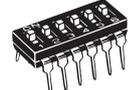
- Gold-plated twin contacts and a slide-type, self-cleaning mechanism ensure high reliability.
- Washable models with seal tape available.
- The wide product line extends from models with 1 to 10 poles to meet a wide range of needs..



RoHS Compliant (Refer to page 8 for details.)

## Ordering Information

### ■ Models in Stick Packages

Type and color of actuator		Flat (orange)		Raised (orange)
		Standard	With seal tape	
No. of poles	Quantity per package			
1	130	A6T-1101	A6T-1102	A6T-1104
2	76	A6T-2101	A6T-2102	A6T-2104
3	55	A6T-3101	A6T-3102	A6T-3104
4	42	A6T-4101	A6T-4102	A6T-4104
5	35	A6T-5101	A6T-5102	A6T-5104
6	28	A6T-6101	A6T-6102	A6T-6104
7	25	A6T-7101	A6T-7102	A6T-7104
8	22	A6T-8101	A6T-8102	A6T-8104
9	20	A6T-9101	A6T-9102	A6T-9104
10	18	A6T-0101	A6T-0102	A6T-0104

**Note:** Orders must be made in integral multiples of the quantities given for each stick.

## Specifications

### ■ Ratings/Characteristics

<b>Switching capacity</b>	25 mA at 24 VDC 10 $\mu$ A (minimum current) at 3.5 VDC
<b>Ambient operating temperature</b>	-20°C to 70°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35% to 90% (at 5 to 35°C)
<b>Insulation resistance</b>	100 M $\Omega$ min. (at 250 VDC)
<b>Contact resistance</b>	200 m $\Omega$ max. (initial value)
<b>Dielectric strength</b>	500 VAC for 1 min between terminals of the same polarity, and between terminals of different polarity
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
<b>Shock resistance</b>	Malfunction: 300 m/s <sup>2</sup> min.
<b>Life expectancy</b>	Mechanical: 1,000 operations min. Electrical: 1,000 operations min.
<b>Operating force</b>	Flat/raised type 0.29 N min. {30 gf}
<b>Weight</b>	0.26 g (2 poles), 0.44 g (4 poles), 0.62 g (6 poles), 0.79 g (8 poles), 0.96 g (10 poles)

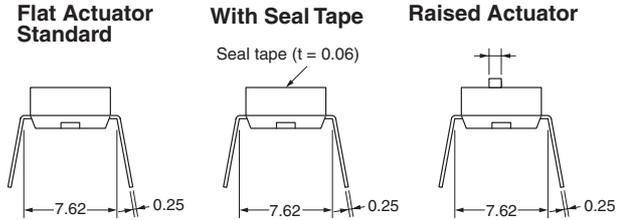
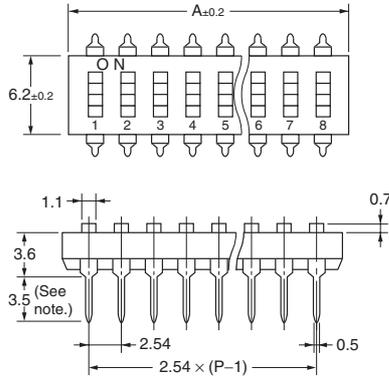
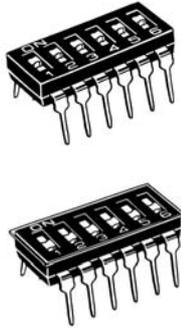
# Dimensions

- Note: 1. All units are in millimeters unless otherwise indicated.  
 2. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

## Flat Actuator with DIP Terminal Standard/With Seal Tape

A6T-□101  
 A6T-□102

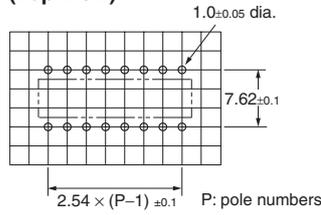
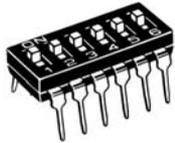
Note: Terminal length decreased from 4.3 mm to 3.5 mm as of May 2003.



## Raised Actuator with DIP Terminal

A6T-□104

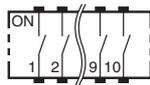
### PCB Dimensions (Top View)



No. of poles	Model			Dimension A
	A6T-1101	A6T-1102	A6T-1104	
1	A6T-2101	A6T-2102	A6T-2104	3.48
2	A6T-3101	A6T-3102	A6T-3104	6.02
3	A6T-4101	A6T-4102	A6T-4104	8.56
4	A6T-5101	A6T-5102	A6T-5104	11.10
5	A6T-6101	A6T-6102	A6T-6104	13.64
6	A6T-7101	A6T-7102	A6T-7104	16.18
7	A6T-8101	A6T-8102	A6T-8104	18.72
8	A6T-9101	A6T-9102	A6T-9104	21.26
9	A6T-0101	A6T-0102	A6T-0104	23.80
10	A6T-0101	A6T-0102	A6T-0104	26.34

# Installation

## Internal Connections (Top View)



# Precautions

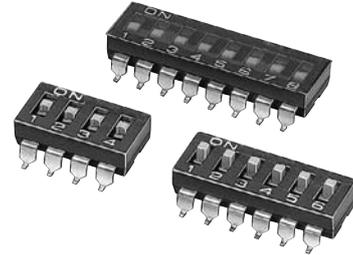
Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

### Previous (A6S) Model Upgraded to Surface-mounting Type with Increased Solder Heat Resistance

- Designed to enable replacement of previous (A6S) model, featuring the same dimensions and improved solder heat resistance (peak solder temperature: 260°C).
- Gold-plated twin contacts and a slide-type, self-cleaning mechanism ensure high reliability.
- Washable models with seal tape available.

Embossed taping models available for automatic mounting. (SQ reel (small reel) also available.)



RoHS Compliant (Refer to page 8 for details.)

## Ordering Information

### ■ Models in Stick Packages

Type and color of actuator		Flat (white)		Raised (white)
		Standard	With seal tape	
No. of poles	Quantity per stick			
1	130	A6S-1101-H	A6S-1102-H	A6S-1104-H
2	76	A6S-2101-H	A6S-2102-H	A6S-2104-H
3	55	A6S-3101-H	A6S-3102-H	A6S-3104-H
4	42	A6S-4101-H	A6S-4102-H	A6S-4104-H
5	35	A6S-5101-H	A6S-5102-H	A6S-5104-H
6	28	A6S-6101-H	A6S-6102-H	A6S-6104-H
7	25	A6S-7101-H	A6S-7102-H	A6S-7104-H
8	22	A6S-8101-H	A6S-8102-H	A6S-8104-H
9	20	A6S-9101-H	A6S-9102-H	A6S-9104-H
10	18	A6S-0101-H	A6S-0102-H	A6S-0104-H

**Note:** Orders must be made in integral multiples of the quantities given for each stick.

## ■ Models in Embossed Taping Packages (Standard Packing)

Type and color of actuator	Flat (white)				Raised (white)			
	Standard		With seal tape					
								
No. of poles		Quantity per package		Quantity per package	Quantity per package			
1	A6S-1101-PH	800	A6S-1102-PH	800	A6S-1104-PH	800		
2	A6S-2101-PH	900	A6S-2102-PH	900	A6S-2104-PH	700		
3	A6S-3101-PH		A6S-3102-PH		---	(See note 2.)	---	
4	A6S-4101-PH		A6S-4102-PH		A6S-4104-PH	700		
5	---		(See note 2.)		A6S-5102-PH	A6S-5104-PH	800	
6	---		(See note 2.)		A6S-6102-PH	A6S-6104-PH	700	
7	A6S-7101-PH		A6S-7102-PH		---	(See note 2.)	---	
8	A6S-8101-PH		A6S-8102-PH		A6S-8104-PH	700		
9	---		(See note 2.)		A6S-9102-PH	---	(See note 2.)	---
10	---		(See note 2.)		A6S-0102-PH	---	(See note 2.)	---

**Note:** 1. Orders must be made in integral multiples of the quantities given for each package. Switches are not sold individually.

2. Models with a different number of poles than those listed here can also be ordered. For details, consult your OMRON sales representative.

## ■ Models in Embossed Taping Packages (SQ Reel)

Type and color of actuator	Flat (white)				Raised (white)			
	Standard		With seal tape					
								
No. of poles		Quantity per package		Quantity per package	Quantity per package			
2	---	400	A6S-2102-PMH	400	---	400		
3	A6S-3101-PMH		---		(See note 2.)		---	(See note 2.)
4	A6S-4101-PMH		A6S-4102-PMH		A6S-4104-PMH			
6	A6S-6101-PMH		A6S-6102-PMH		A6S-6104-PMH			
8	A6S-8101-PMH		A6S-8102-PMH		A6S-8104-PMH			
10	A6S-0101-PMH		A6S-0102-PMH		A6S-0104-PMH			

**Note:** 1. Orders must be made in integral multiples of the quantities given for each package. Switches are not sold individually.

2. Models with a different number of poles than those listed here can also be ordered. For details, consult your OMRON sales representative.

## Specifications

### ■ Ratings/Characteristics

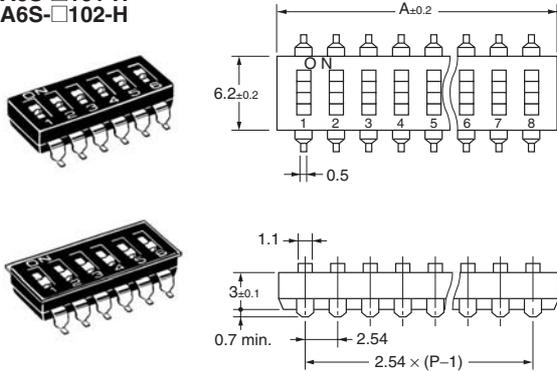
Switching capacity	25 mA at 24 VDC 10 $\mu$ A (minimum current) at 3.5 VDC
Ambient operating temperature	-20°C to 70°C at 60% max. (with no icing or condensation)
Ambient operating humidity	35% to 90% (at 5 to 35°C)
Insulation resistance	100 M $\Omega$ min. (at 250 VDC)
Contact resistance	200 m $\Omega$ max. (initial value)
Dielectric strength	500 VAC for 1 min between terminals of the same polarity, and between terminals of different polarity
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: 300 m/s <sup>2</sup> min.
Life expectancy	Mechanical: 1,000 operations min. Electrical: 1,000 operations min.
Operating force	Flat/raised type 0.29 N min. {30 gf}
Weight	0.25 g (2 poles), 0.41 g (4 poles), 0.58 g (6 poles), 0.73 g (8 poles), 0.87 g (10 poles)

# Dimensions

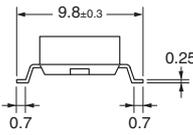
Note: 1. All units are in millimeters unless otherwise indicated.  
 2. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

## Flat Actuator with SMT Terminal Standard/With Seal Tape

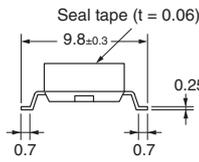
A6S-□101-H  
 A6S-□102-H



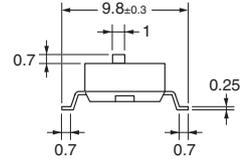
Flat Actuator  
Standard



With Seal Tape

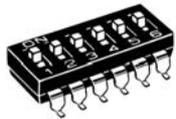


Raised Actuator

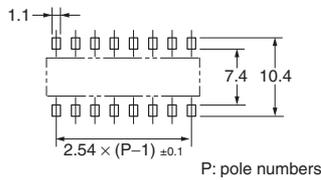


## Raised Actuator with SMT Terminal

A6S-□104-H



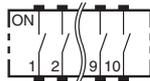
### PCB Dimensions (Top View)



No. of poles	Model			Dimension A
	A6S-1101-H	A6S-1102-H	A6S-1104-H	
1	A6S-1101-H	A6S-1102-H	A6S-1104-H	3.48
2	A6S-2101-H	A6S-2102-H	A6S-2104-H	6.02
3	A6S-3101-H	A6S-3102-H	A6S-3104-H	8.56
4	A6S-4101-H	A6S-4102-H	A6S-4104-H	11.10
5	A6S-5101-H	A6S-5102-H	A6S-5104-H	13.64
6	A6S-6101-H	A6S-6102-H	A6S-6104-H	16.18
7	A6S-7101-H	A6S-7102-H	A6S-7104-H	18.72
8	A6S-8101-H	A6S-8102-H	A6S-8104-H	21.26
9	A6S-9101-H	A6S-9102-H	A6S-9104-H	23.80
10	A6S-0101-H	A6S-0102-H	A6S-0104-H	26.34

# Installation

## Internal Connections (Top View)



# Precautions

Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
 To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

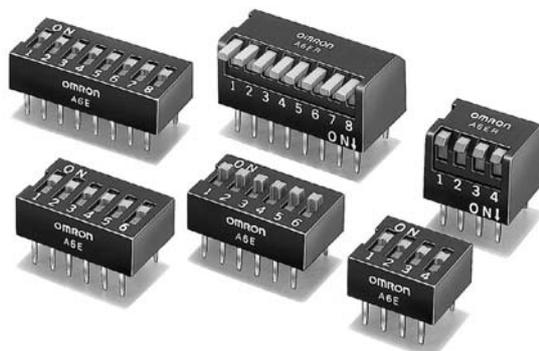
## DIP Switch (Slide Type)

A6E/A6ER

### Box-shaped DIP Switch with PCB Terminals

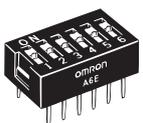
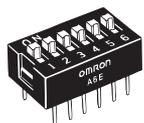
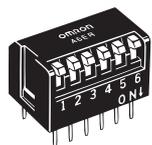
- The bottom is sealed with resin to prevent flux penetration.
- Piano-type models feature short or long actuators (levers).
- Gold-plated contacts ensure high reliability

RoHS Compliant (Refer to page 8 for details.)



## Ordering Information

### ■ Models in Stick Packages

Type and color of actuator		Flat (orange)	Raised (orange)	Type and color of actuator	Piano type (short-lever, orange)	Piano type (long-lever, orange)
No. of poles	Quantity per stick				Quantity per stick	
2	73	A6E-2101	A6E-2104	70	A6ER-2101	A6ER-2104
3	52	A6E-3101	A6E-3104	50	A6ER-3101	A6ER-3104
4	40	A6E-4101	A6E-4104	39	A6ER-4101	A6ER-4104
5	33	A6E-5101	A6E-5104	32	A6ER-5101	A6ER-5104
6	28	A6E-6101	A6E-6104	27	A6ER-6101	A6ER-6104
7	24	A6E-7101	A6E-7104	24	A6ER-7101	A6ER-7104
8	21	A6E-8101	A6E-8104	21	A6ER-8101	A6ER-8104
9	19	A6E-9101	A6E-9104	19	A6ER-9101	A6ER-9104
10	17	A6E-0101	A6E-0104	17	A6ER-0101	A6ER-0104

**Note:** Orders must be made in integral multiples of the quantities given for each stick.

# Specifications

## ■ Ratings/Characteristics

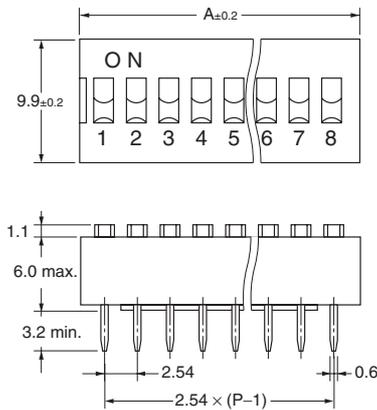
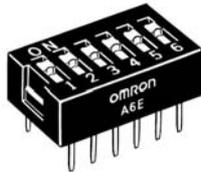
<b>Switching capacity</b>	25 mA at 24 VDC, 10 $\mu$ A (minimum current) at 3.5 VDC
<b>Ambient operating temperature</b>	-20°C to 70°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35% to 90% (at 5 to 35°C)
<b>Insulation resistance</b>	100 M $\Omega$ min. (at 250 VDC)
<b>Contact resistance</b>	200 m $\Omega$ max. (initial value)
<b>Dielectric strength</b>	500 VAC for 1 min between terminals of the same polarity, and between terminals of different polarity
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
<b>Shock resistance</b>	Malfunction: 300 m/s <sup>2</sup> min.
<b>Life expectancy</b>	Mechanical: 1,000 operations min. Electrical: 1,000 operations min.
<b>Operating force</b>	0.29 N min. {30 gf} for models with flat, raised, or piano-type actuator
<b>Weight</b>	A6E: 0.66 g (2 poles), 1.00 g (4 poles), 1.32 g (6 poles), 1.65 g (8 poles), 1.98 g (10 poles) A6ER: 1.01 g (2 poles), 1.51 g (4 poles), 2.00 g (6 poles), 2.51 g (8 poles), 3.02 g (10 poles)

## Dimensions

- Note:**
- All units are in millimeters unless otherwise indicated.
  - Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

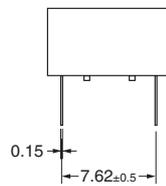
### Flat Actuator with DIP Terminal

A6E-□101

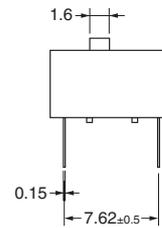


P: Pole numbers

### Flat Actuator

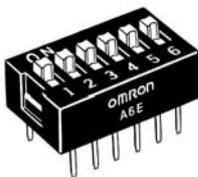


### Raised Actuator

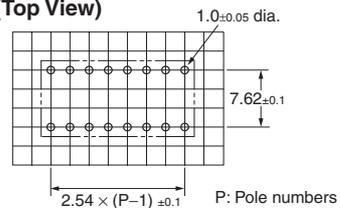


### Raised Actuator with DIP Terminal

A6E-□104



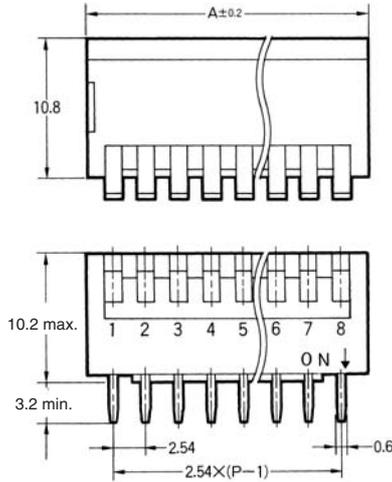
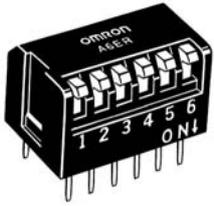
### PCB Dimensions (Top View)



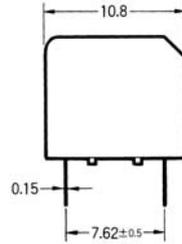
P: Pole numbers

No. of poles	Model		Dimension A
2	A6E-2101	A6E-2104	6.64
3	A6E-3101	A6E-3104	9.18
4	A6E-4101	A6E-4104	11.72
5	A6E-5101	A6E-5104	14.26
6	A6E-6101	A6E-6104	16.80
7	A6E-7101	A6E-7104	19.34
8	A6E-8101	A6E-8104	21.88
9	A6E-9101	A6E-9104	24.42
10	A6E-0101	A6E-0104	26.96

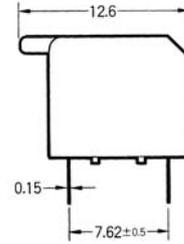
**DIP Terminal  
Piano type (short-lever)  
A6ER-□101**



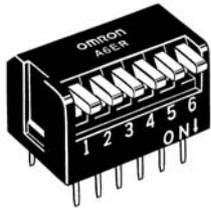
**Side Actuator  
(short-lever)**



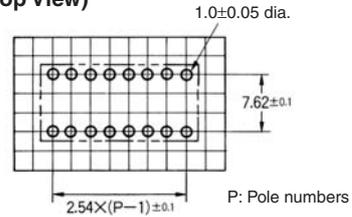
**Side Actuator  
(long-lever)**



**Piano type (long-lever)  
A6ER-□104**



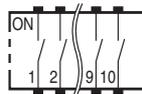
**PCB Dimensions  
(Top View)**



No. of poles	Model		Dimension A
2	A6ER-2101	A6ER-2104	6.64
3	A6ER-3101	A6ER-3104	9.18
4	A6ER-4101	A6ER-4104	11.72
5	A6ER-5101	A6ER-5104	14.26
6	A6ER-6101	A6ER-6104	16.80
7	A6ER-7101	A6ER-7104	19.34
8	A6ER-8101	A6ER-8104	21.88
9	A6ER-9101	A6ER-9104	24.42
10	A6ER-0101	A6ER-0104	26.96

## Installation

### ■ Internal Connections (Top View)



## Precautions

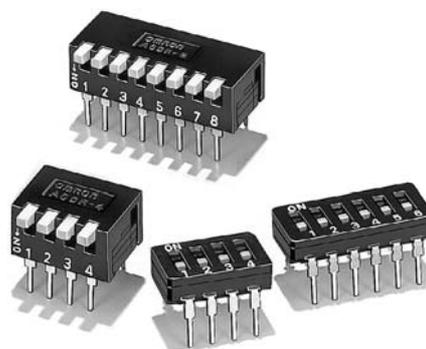
Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

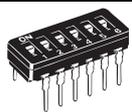
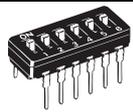
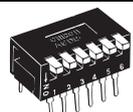
### DIP Switches with Sealed Construction for High Reliability

- Sealed construction equivalent to IP64 (IEC 60529) prevents flux penetration and provides high contact reliability even in dusty locations and locations where water is used.
- Smooth, sure switching action enables comfortable operation.
- Gold-plated twin contacts and a slide-type, self-cleaning mechanism ensure high reliability.

RoHS Compliant (Refer to page 8 for details.)



### Ordering Information

Type and color of actuator		Flat (orange)		Raised (orange)		Piano-type (orange)	
							
No. of poles	Packaging	Stick	Quantity per stick	Stick	Quantity per stick	Unit box	Quantity per box
2		A6D-2100	73	A6D-2103	73	A6DR-2100	100
4		A6D-4100	43	A6D-4103	43	A6DR-4100	50
6		A6D-6100	30	A6D-6103	30	A6DR-6100	
8		A6D-8100	23	A6D-8103	23	A6DR-8100	
10		A6D-0100	19	A6D-0103	19	A6DR-0100	

- Note:**
1. Orders must be made in integral multiples of the quantities given for each stick.
  2. Contact your OMRON sales representatives to request special markings or designations.

### Specifications

#### ■ Ratings/Characteristics

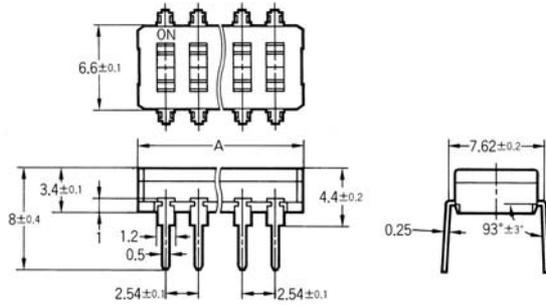
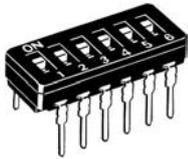
<b>Switching capacity</b>	100 mA at 5 VDC and 30 mA at 30 VDC (switching current) 10 $\mu$ A at 3.5 VDC (minimum current)
<b>Ambient operating temperature</b>	-20 to 70°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35 to 90% (at 5 to 35°C)
<b>Insulation resistance</b>	100 m $\Omega$ min. (at 250 VDC)
<b>Contact resistance</b>	100 m $\Omega$ max. (initial value)
<b>Dielectric strength</b>	500 VAC for 1 minute between terminals of the same polarity, and between terminals of different polarity
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5 mm double amplitude
<b>Shock resistance</b>	Malfunction: 300 m/s <sup>2</sup> min.
<b>Life expectancy</b>	Mechanical: 5,000 operations min. Electrical: 2,000 operations min.
<b>Operating force</b>	4.90 N max. {500 gf}
<b>Weight</b>	Flat and raised actuators: 0.28g (2 poles), 0.45 g (4 poles), 0.65 g (6 poles), 0.80 g (8 poles), 1.0 g (10 poles) Piano type: 0.53g (2 poles), 0.8 g (4 poles), 1.2 g (6 poles), 1.7 g (8 poles), 2.2 g (10 poles)

# Dimensions

**Note:** 1. All units are in millimeters unless otherwise indicated.  
 2. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all the dimensions.

## Flat Actuator

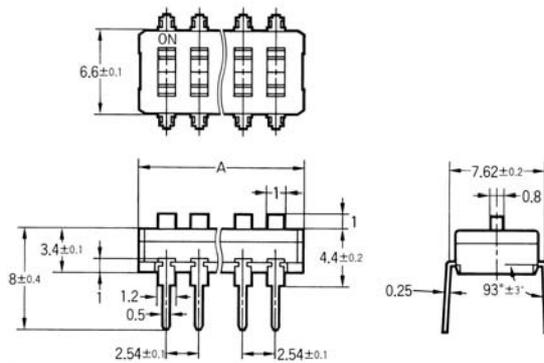
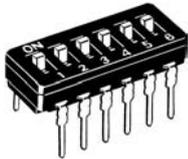
A6D-□100



Model	Dimension A $\pm 0.2$
A6D-2100	7.1
A6D-4100	12.2
A6D-6100	17.3
A6D-8100	22.4
A6D-0100	27.4

## Raised Actuator

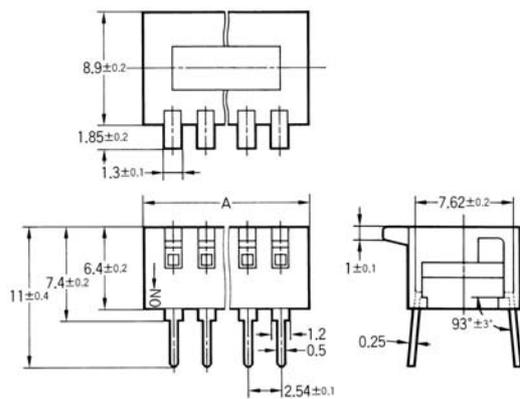
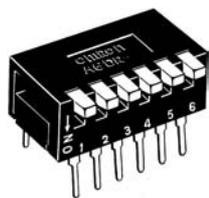
A6D-□103



Model	Dimension A $\pm 0.2$
A6D-2103	7.1
A6D-4103	12.2
A6D-6103	17.3
A6D-8103	22.4
A6D-0103	27.4

## Piano type

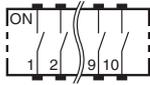
A6DR-□100



Model	Dimension A $\pm 0.2$
A6DR-2100	7.1
A6DR-4100	12.2
A6DR-6100	17.3
A6DR-8100	22.4
A6DR-0100	27.4

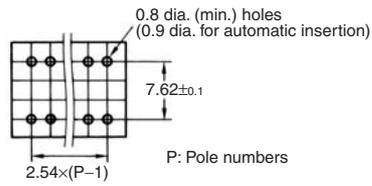
# Installation

## Internal connections (top view)



## Mounting holes (top view)

(Single-sided PCB,  $t=1.2$  to  $1.6$ )



# Precautions

Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

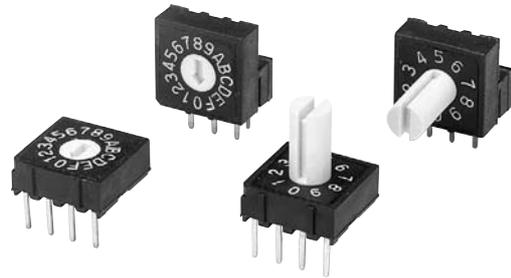
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

## Rotary DIP Switch

### A6R/A6RV

### Low-cost Rotary DIP Switches

- Series includes top-actuated, side-actuated, flat, and extended-shaft models.
- The rotor has an O-ring sealed construction that prevents the ingress of dirt and dust.
- Two different types of terminal arrangement are available for each model to allow flexibility in the circuit design.



RoHS Compliant (Refer to page 8 for details.)

## Ordering Information

### List of Models

Type and color of rotor				Top-actuated, flat (white)	Top-actuated, extended shaft (white)	Side-actuated, flat (white)	Side-actuated, extended shaft (white)
Number of positions	Quantity per stick	Terminal arrangement	Output code				
10	48	4 × 1	Real code	A6R-101RF	A6R-101RS	A6RV-101RF	A6RV-101RS
		3 × 3	Real code	A6R-102RF	A6R-102RS	A6RV-102RF	A6RV-102RS
16	48	4 × 1	Real code	A6R-161RF	A6R-161RS	A6RV-161RF	A6RV-161RS
		3 × 3	Real code	A6R-162RF	A6R-162RS	A6RV-162RF	A6RV-162RS

**Note:** Orders must be made in integral multiples of the quantities given for each stick.

## Specifications

### Ratings/Characteristics

<b>Rating</b>	25 mA at 24 VDC
<b>Ambient operating temperature</b>	-25 to 80°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35% to 95% (at 5 to 35°C)
<b>Insulation resistance</b>	100 MΩ min. (at 250 VDC)
<b>Contact resistance</b>	200 mΩ max. (initial value)
<b>Dielectric strength</b>	250 VAC for 1 minute between terminals of the same polarity
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
<b>Shock resistance</b>	Malfunction: Approx. 300 m/s <sup>2</sup>
<b>Electrical life expectancy</b>	5,000 steps min.
<b>Operating torque</b>	1.96 × 10 <sup>-2</sup> N·m max.
<b>Weight</b>	4×1, top-actuated: 0.64 g 3×3, top-actuated: 0.62 g 4×1, side-actuated: 0.8 g 3×3, side-actuated: 0.83 g (Add 0.13 g for the extended-shaft version of each model.)

### Output Codes

#### 10-position Models

Code Position	Real code			
	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●

#### 16-position Models

Code Position	Real code			
	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●		●	
6		●	●	
7	●	●	●	
8				●
9	●			●
A		●		●
B	●	●		●
C			●	●
D	●		●	●
E		●	●	●
F	●	●	●	●

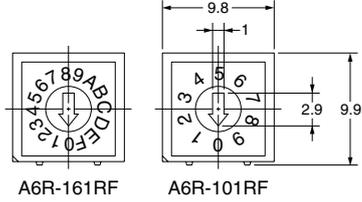
**Note:** "●" indicates that the internal switch is ON.

# Dimensions

- Note:** 1. All units are in millimeters unless otherwise indicated.  
 2. A tolerance of  $\pm 0.4$  mm applies to the above dimensions unless otherwise specified.

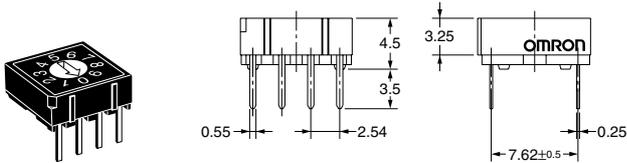
## Top-actuated Flat Models with 4x1 Terminal Arrangement

A6R-101RF  
 A6R-161RF



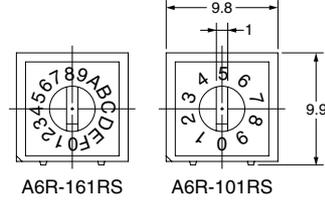
A6R-161RF

A6R-101RF



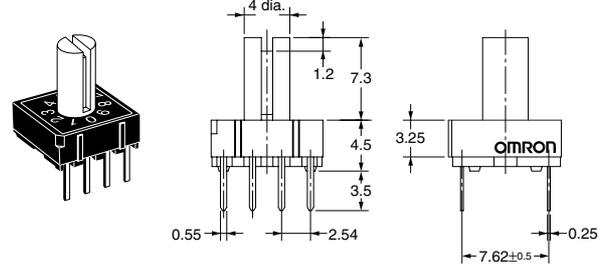
## Top-actuated Extended-shaft Models with 4x1 Terminal Arrangement

A6R-101RS  
 A6R-161RS



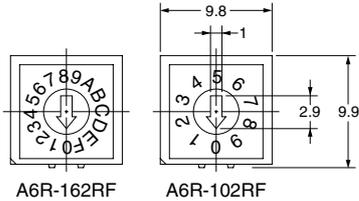
A6R-161RS

A6R-101RS



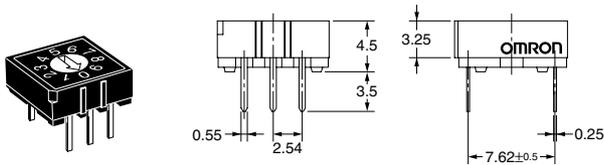
## Top-actuated Flat Models with 3x3 Terminal Arrangement

A6R-102RF  
 A6R-162RF



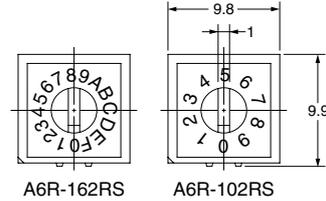
A6R-162RF

A6R-102RF



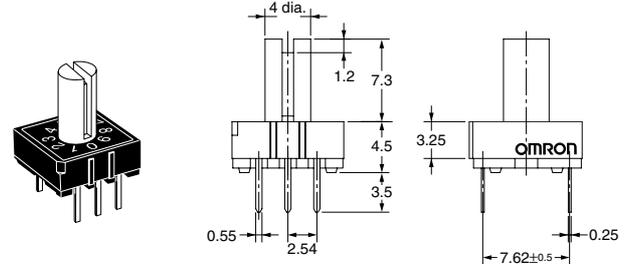
## Top-actuated Extended-shaft Models with 3x3 Terminal Arrangement

A6R-102RS  
 A6R-162RS



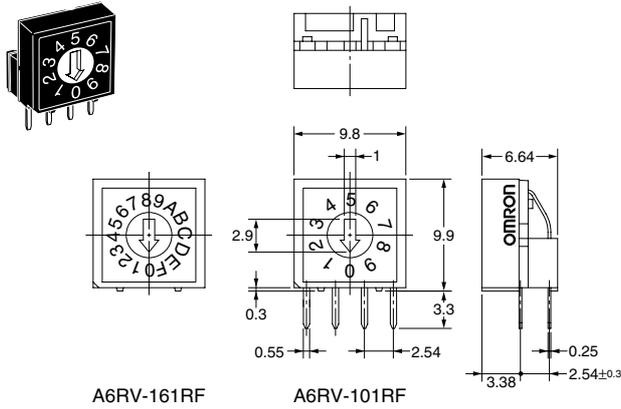
A6R-162RS

A6R-102RS



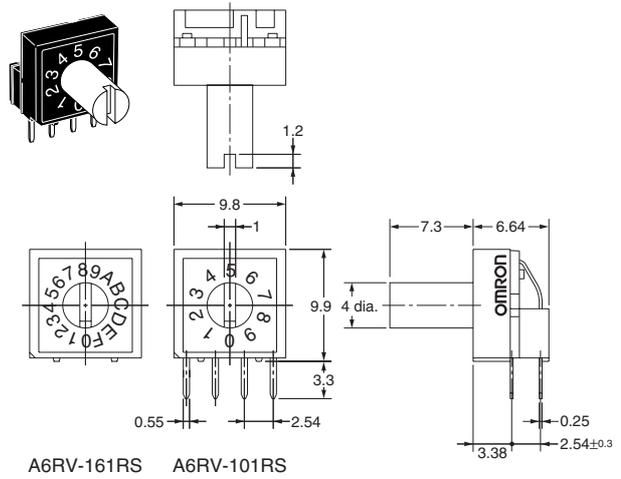
**Side-actuated Flat Models with 4×1 Terminal Arrangement**

A6RV-101RF  
A6RV-161RF



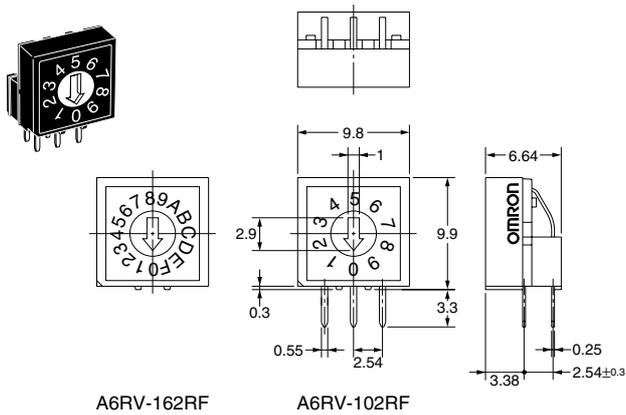
**Side-actuated Extended-shaft Models with 4×1 Terminal Arrangement**

A6RV-101RS  
A6RV-161RS



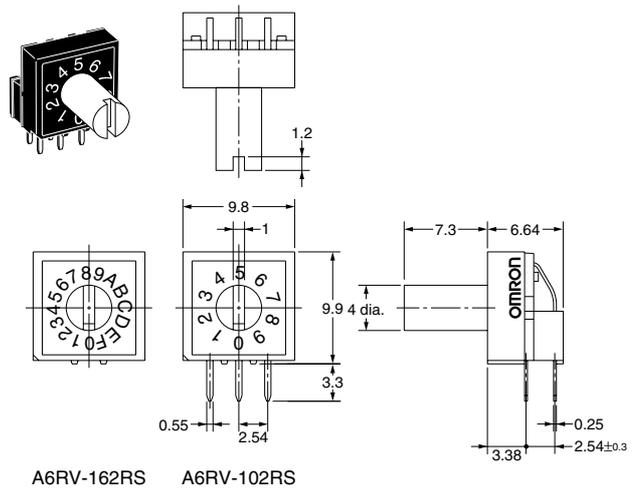
**Side-actuated Flat Models with 3×3 Terminal Arrangement**

A6RV-102RF  
A6RV-162RF



**Side-actuated Extended-shaft Models with 3×3 Terminal Arrangement**

A6RV-102RS  
A6RV-162RS

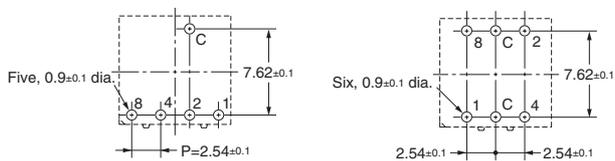


**PCB Cutout Dimensions**

**Top-actuated Models**

4×1 Terminal Arrangement

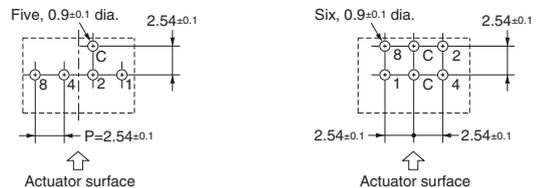
3×3 Terminal Arrangement



**Side-actuated Models**

4×1 Terminal Arrangement

3×3 Terminal Arrangement



## Precautions

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Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

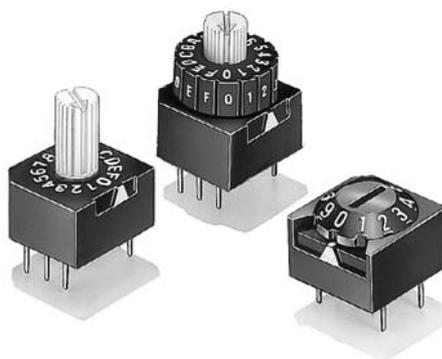
**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

## Sealed Rotary DIP Switch

## A6A

### Sealed Rotary DIP Switch with a Wide Selection to Match the Type of Operation

- Series includes a standard type that can be operated from the top or side, an extended shaft type that can be operated while mounted on a panel, and a flat type.
- A slider lock and rotating PCB system achieve stable contact reliability.
- Sealed construction equivalent to IP64 (IEC 60529) prevents flux penetration and provides high contact reliability even in dusty locations and locations where water is used.



RoHS Compliant (Refer to page 8 for details.)

### Ordering Information

Type and color of rotor		Standard (black)	Flat (white)	Extended shaft (white)	Thumbwheel (white, wheel: black)
No. of switching positions	Output code				
10	BCD/hexadecimal 1-2-4-8 code	A6A-10R	A6A-10RF	A6A-10RS	A6A-10RW
	BCD/hexadecimal 1-2-4-8 complement code	A6A-10C	A6A-10CF	A6A-10CS	A6A-10CW
16	BCD/hexadecimal 1-2-4-8 code	A6A-16R	A6A-16RF	A6A-16RS	A6A-16RW
	BCD/hexadecimal 1-2-4-8 complement code	A6A-16C	A6A-16CF	A6A-16CS	A6A-16CW

- Note:**
1. Contact your OMRON sales representative to request special markings or designations.
  2. The standard packing configuration is units of 100 per box. Orders must be made in integral multiples of 100-unit boxes.

# Specifications

## ■ Ratings/Characteristics

<b>Switching capacity</b>	1 mA to 0.1 A at 5 to 28 VDC (switching current)
<b>Ambient operating temperature</b>	−10 to 70°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	85% max. (at 5 to 35°C)
<b>Insulation resistance</b>	10 MΩ min. (at 250 VDC)
<b>Contact resistance</b>	200 mΩ max. (initial value)
<b>Dielectric strength</b>	500 VAC at 50/60 Hz for 1 min between ground and the charging plate 250 VAC at 50/60 Hz for 1 min between terminals of the same polarity
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5 mm double amplitude
<b>Shock resistance</b>	Malfunction: 300 m/s <sup>2</sup> min.
<b>Life expectancy</b>	Mechanical: 10,000 operations min. Electrical: 2,000 operations min.
<b>Operating force</b>	1.18 to 2.45 × 10 <sup>−2</sup> N·m
<b>Weight</b>	Approx. 0.75g for the A6A-10R

### 10-position Models

Type	BCD/hexadecimal 1-2-4-8 code				BCD/hexadecimal 1-2-4-8 complement code			
	1	2	4	8	1	2	4	8
Terminal No. Position								
0					•	•	•	•
1	•					•	•	•
2		•			•		•	•
3	•	•					•	•
4			•		•	•		•
5	•		•			•		•
6		•	•		•			•
7	•	•	•					•
8				•	•	•	•	
9	•			•		•	•	

### 16-position Models

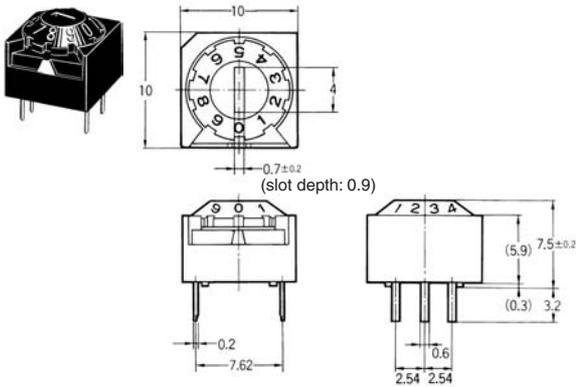
Type	BCD/hexadecimal 1-2-4-8 code				BCD/hexadecimal 1-2-4-8 complement code			
	1	2	4	8	1	2	4	8
Terminal No. Position								
0					•	•	•	•
1	•					•	•	•
2		•			•		•	•
3	•	•					•	•
4			•		•	•		•
5	•		•			•		•
6		•	•		•			•
7	•	•	•					•
8				•	•	•	•	
9	•			•		•	•	
A		•		•	•		•	
B	•	•		•			•	
C			•	•	•	•		
D	•		•	•		•		
E		•	•	•	•			
F	•	•	•	•				

**Note:** “•” indicates that the internal switch is ON.

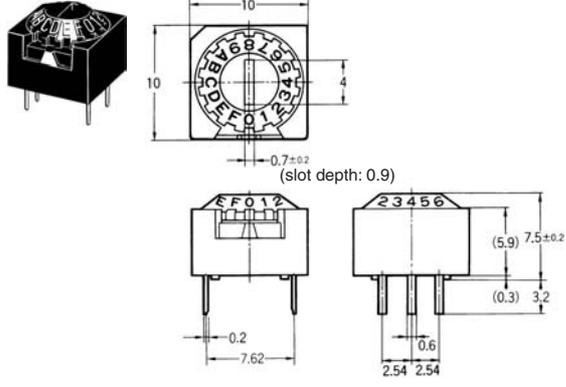
# Dimensions

- Note:** 1. All units are in millimeters unless otherwise indicated.  
 2. A tolerance of  $\pm 0.4$  mm applies to the above dimensions unless otherwise specified.

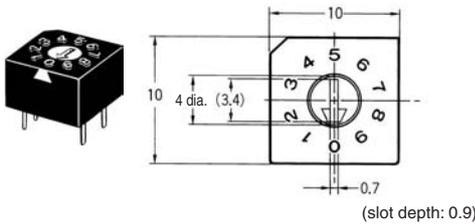
## Standard Type, 10 Positions A6A-10R, A6A-10C



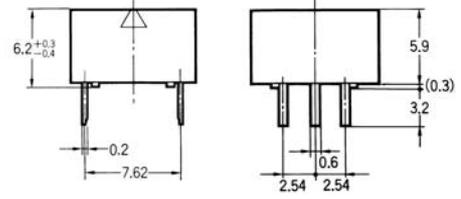
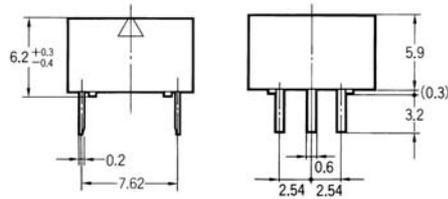
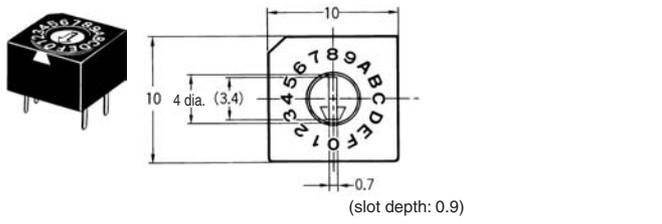
## Standard Type, 16 Positions A6A-16R, A6A-16C



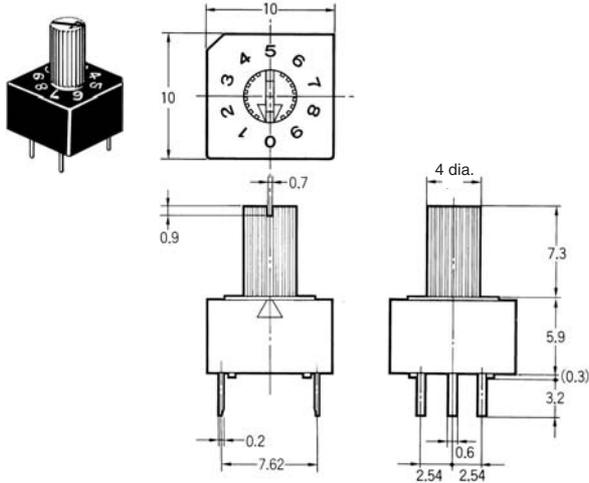
## Flat Type, 10 Positions A6A-10RF, A6A-10CF



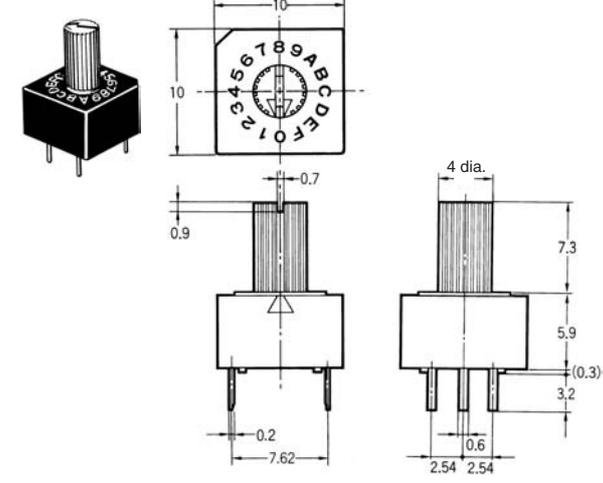
## Flat Type, 16 Positions A6A-16RF, A6A-16CF



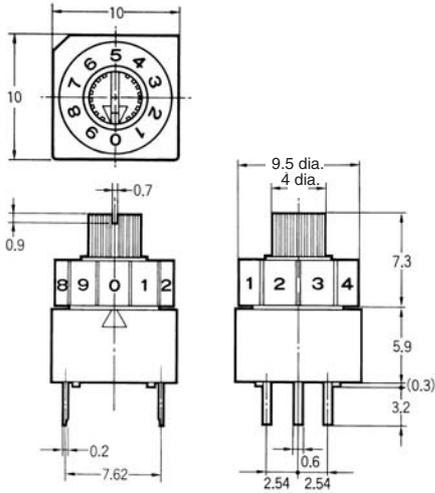
## Extended Shaft Type, 10 Positions A6A-10RS, A6A-10CS



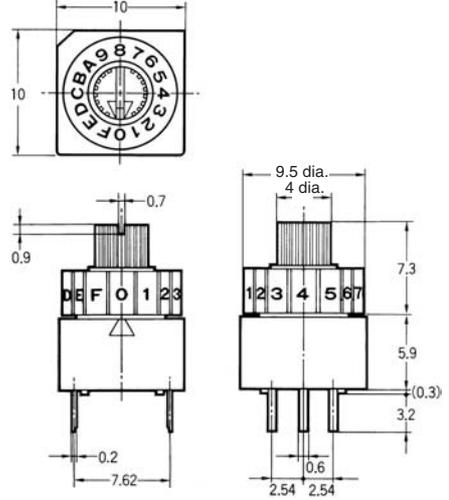
## Extended Shaft Type, 16 Positions A6A-16RS, A6A-16CS



**Thumbwheel Type, 10 Positions**  
A6A-10RW, A6A-10CW

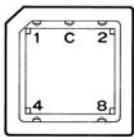


**Thumbwheel Type, 16 Positions**  
A6A-16RW, A6A-16CW

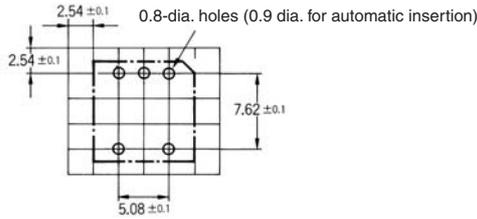


## Installation

**Terminal arrangement (bottom view)**



**Mounting holes (top view)**



## Precautions

Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

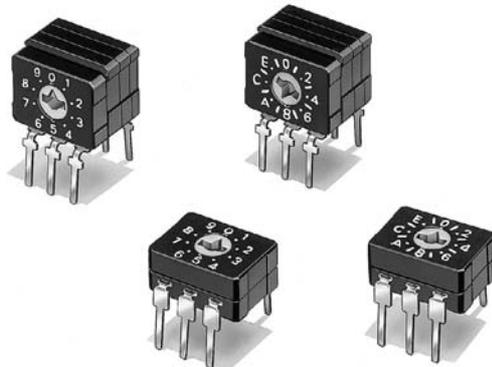
**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

## Sealed Rotary DIP Switch

### A6C/A6CV

### DIL-IC Type Rotary DIP Switch with Sealed Construction

- A precise rotary cam and contact driving mechanism achieve compactness for high-precision mounting.
- Top-actuated and side-actuated models included in series.
- Insert-molded terminals and an O-ring sealed rotor combine to form a sealed construction equivalent to IP64 (IEC 60529) that prevents flux penetration and provides high contact reliability even in dusty locations and locations where water is used.
- Offset between terminal pins and side of case allows simple circuit inspection.



RoHS Compliant (Refer to page 8 for details.)

## Ordering Information

Type and color of rotor		Top actuated (orange)		Side actuated (orange)	
					
No. of switching positions	Packaging Output code	Stick	Quantity per stick	Unit box	Quantity per box
10	BCD/hexadecimal 1-2-4-8	A6C-10R (N)	55	A6CV-10R	100
16	BCD/hexadecimal 1-2-4-8	A6C-16R (N)		A6CV-16R	

**Note:** A6Cs are packaged 55 units to a stick. A6CVs are packaged 100 to a box.

## Specifications

### ■ Ratings/Characteristics

<b>Switching capacity</b>	1 mA to 0.1 A (switching capacity) at 5 to 30 VDC Minimum permissible load of 10 $\mu$ A (resistor load) at 3.5 VDC
<b>Ambient operating temperature</b>	-20 to 70°C at 60% max. (with no icing or condensation)
<b>Ambient operating humidity</b>	35 to 95% (at 5 to 35°C)
<b>Insulation resistance</b>	100 M $\Omega$ min. (at 250 VDC)
<b>Contact resistance</b>	200 m $\Omega$ max.
<b>Dielectric strength</b>	250 VAC for 1 minute between terminals of the same pole
<b>Vibration resistance</b>	Malfunction: 10 to 55 Hz, 1.5 mm double amplitude
<b>Shock resistance</b>	Malfunction: Approx. 300 m/s <sup>2</sup>
<b>Life expectancy</b>	Mechanical: 10,000 operations min. Electrical: 2,000 operations min.
<b>Operating torque</b>	0.98 $\times$ 10 <sup>-2</sup> N·m max.
<b>Weight</b>	A6C-10R (N): approx. 0.4 g A6CV-10R: approx. 0.7 g

# Output Code Tables

## 10-position Models

Type Code	A6C-10R, A6CV-10R			
	BCD/hexadecimal 1-2-4-8 code			
Position	1	2	4	8
0				
1	•			
2		•		
3	•	•		
4			•	
5	•		•	
6		•	•	
7	•	•	•	
8				•
9	•			•

## 16-position Models

Type Code	A6C-16R, A6CV-16R			
	BCD/hexadecimal 1-2-4-8 code			
Position	1	2	4	8
0				
1	•			
2		•		
3	•	•		
4			•	
5	•		•	
6		•	•	
7	•	•	•	
8				•
9	•			•
A		•		•
B	•	•		•
C			•	•
D	•		•	•
E		•	•	•
F	•	•	•	•

Note: “•” indicates that the internal switch is ON.

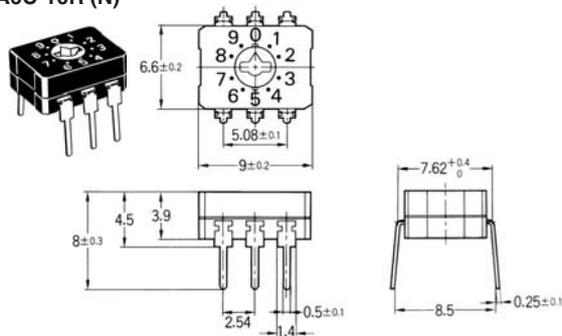
## Dimensions

Note: 1. All units are in millimeters unless otherwise indicated.

2. A tolerance of  $\pm 0.4$  mm applies to the above dimensions unless otherwise specified.

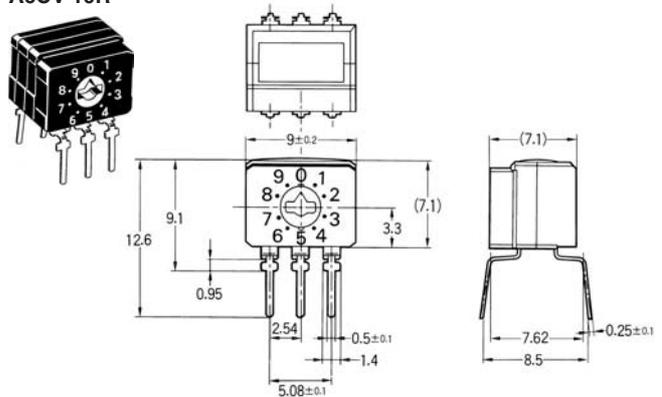
### Top Actuated, 10 Positions

A6C-10R (N)



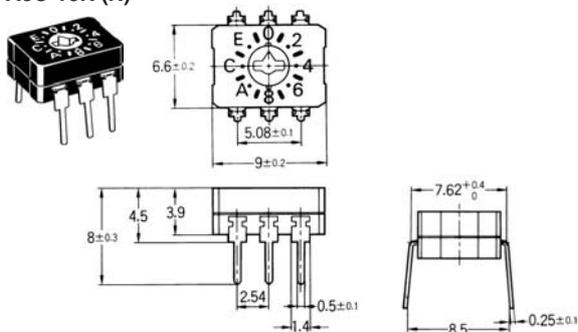
### Side Actuated, 10 Positions

A6CV-10R



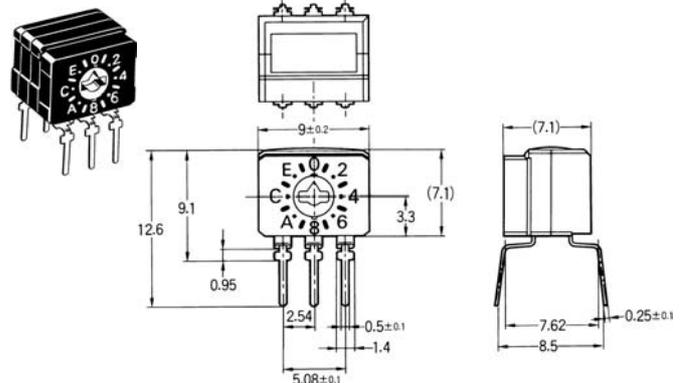
### Top Actuated, 16 Positions

A6C-16R (N)



### Side Actuated, 16 Positions

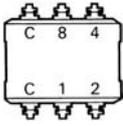
A6CV-16R



## Terminal Arrangement

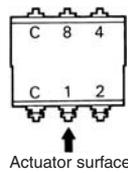
### Top Actuated Models

Terminal arrangement (top view)



### Side Actuated Models

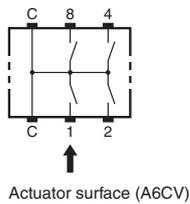
Terminal arrangement (top view)



## Installation

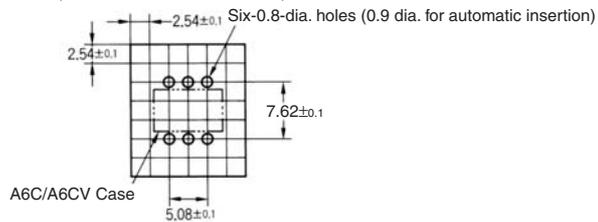
**Note:** All units are in millimeters unless otherwise indicated.

### Internal connections (top view)



### Mounting holes (top view)

(One-sided PCB,  $t = 1.2$  to  $1.6$ )



## Precautions

Be sure to refer to General Precautions on pages 5 to 7 for details on proper use.

**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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