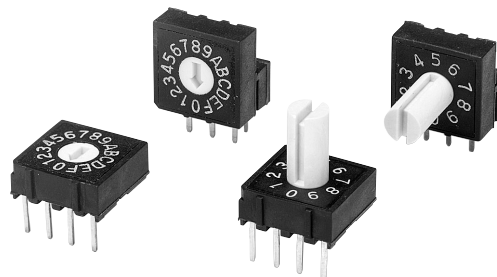


Rotary DIP Switch A6R/A6RV

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 of circuit design.



Ordering Information

List of Models

				Type	Top-actuated, flat	Top-actuated, extended shaft	Side-actuated, flat	Side-actuated, extended shaft
				Appearance				
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: Switches are delivered in units of 48. Order in multiples of 48.

Specifications

Ratings/Characteristics

Rating	25 mA at 24 VDC
Ambient operating temperature	-25° to 80°C (with no icing or condensation)
Ambient operating humidity	35% to 95%
Insulation resistance	100 MΩ min. (at 250 VDC)
Contact resistance	200 mΩ max. (initial value)
Dielectric strength	250 VAC for 1 minute between terminals of the same polarity
Vibration resistance	Malfunction: 10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Malfunction: Approx. 300 m/s ²
Electrical life expectancy	5,000 steps min.
Operating torque	1.96 × 10 ⁻² N·m max.
Weight	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 16-position Models

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

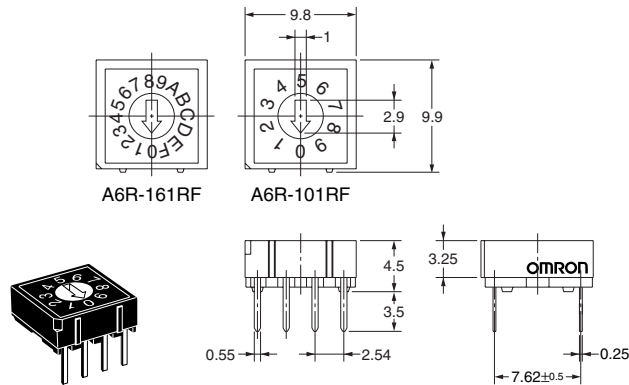
Note: "ON" indicates that the internal switch is ON.

Dimensions

Unit: mm

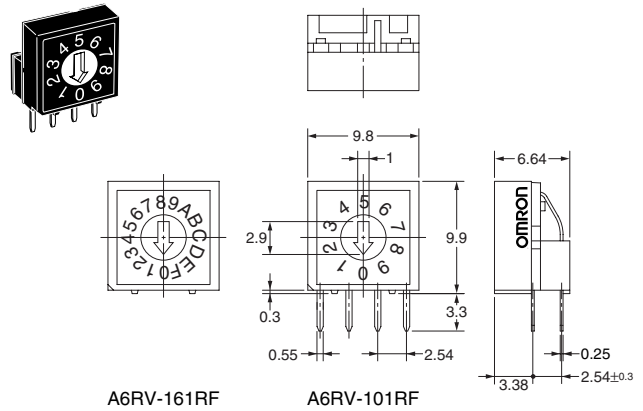
Top-Actuated Flat Models with 4x1 Terminal Arrangement

A6R-101RF
A6R-161RF



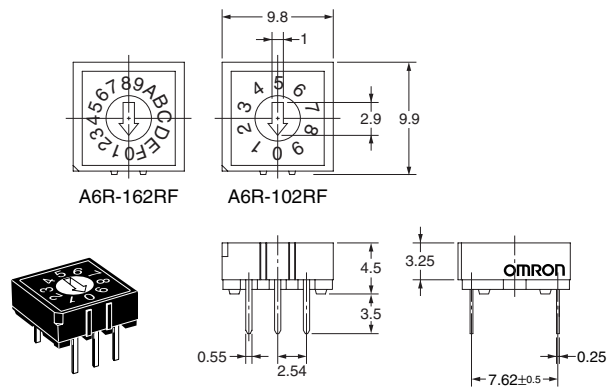
Side-Actuated Flat Models with 4x1 Terminal Arrangement

A6RV-101RF
A6RV-161RF



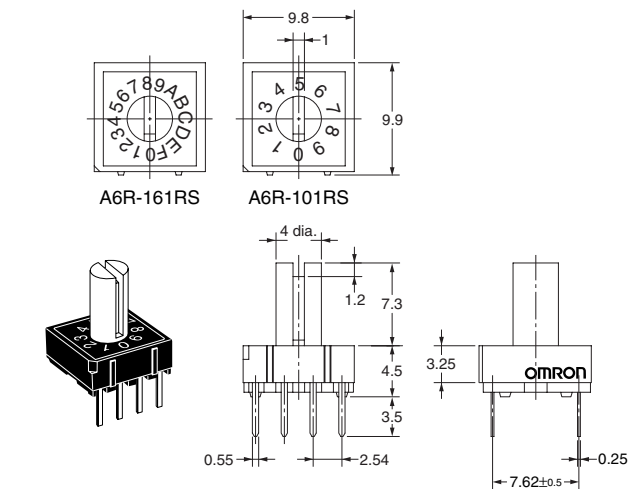
Top-Actuated Flat Models with 3x3 Terminal Arrangement

A6R-102RF
A6R-162RF



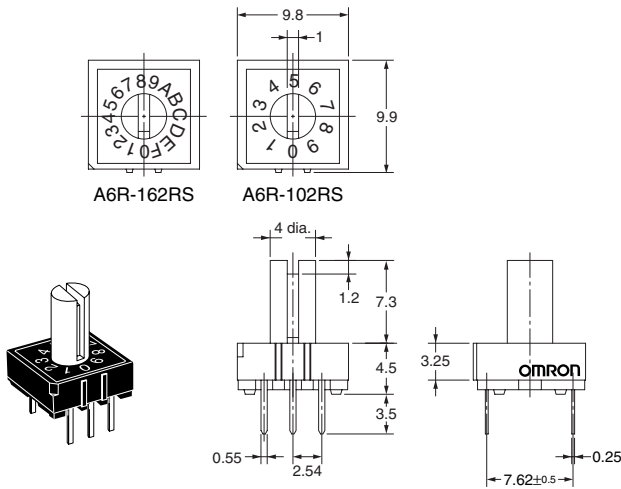
Top-Actuated Extended-Shaft Models with 4x1 Terminal Arrangement

A6R-101RS
A6R-161RS



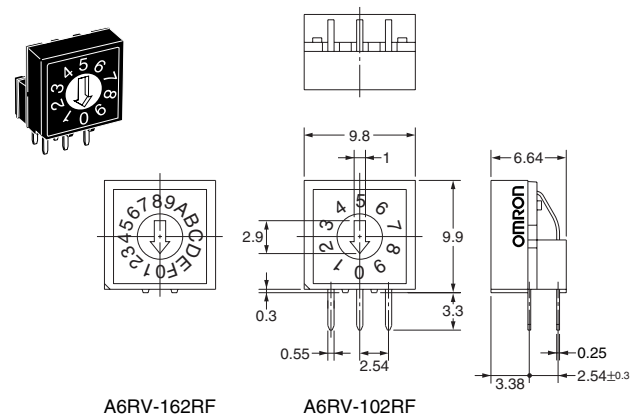
Top-Actuated Extended-Shaft Models with 3x3 Terminal Arrangement

**A6R-102RS
A6R-162RS**



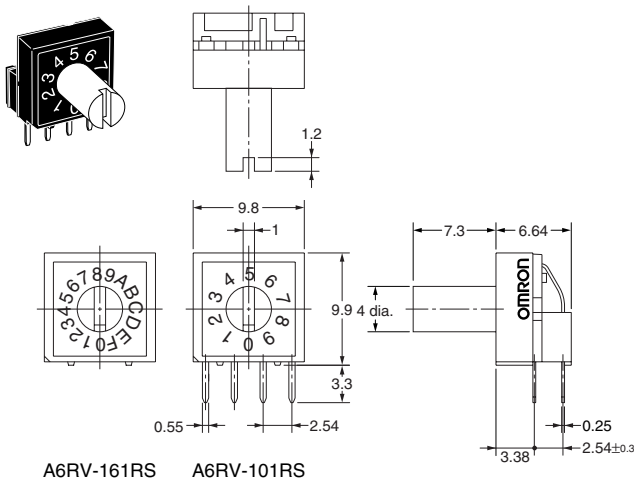
Side-Actuated Flat Models with 3x3 Terminal Arrangement

**A6RV-102RF
A6RV-162RF**

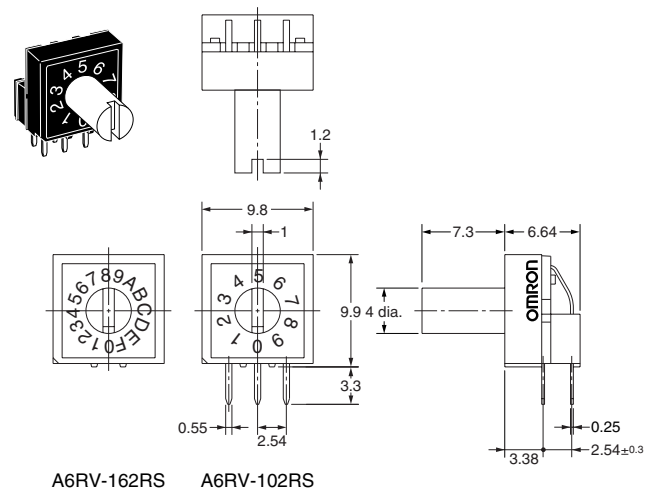


Side-Actuated Extended-Shaft Models with 4x1 Terminal Arrangement

**A6RV-101RS
A6RV-161RS**



**A6RV-102RS
A6RV-162RS**

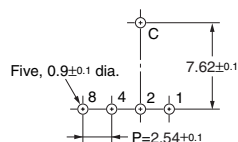


Note: A tolerance of ± 0.4 mm applies to the above dimensions unless otherwise specified.

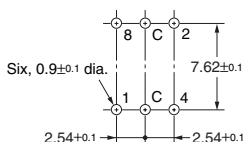
■ PCB Cutout Dimensions

Top-Actuated Models

4×1 Terminal Arrangement

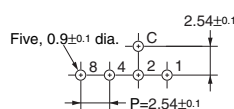


3×3 Terminal Arrangement

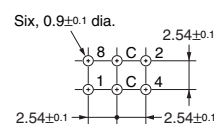


Side-Actuated Models

4×1 Terminal Arrangement



3×3 Terminal Arrangement



Precautions

■ Cautions

Circuit Design

Use the switch within the rated voltage and current ranges, or the switch may have a shortened life expectancy, radiate heat, or burn out. Use circuit constants that ensure operation within the rated ranges. This particularly applies to the instantaneous voltages and currents when switching.

The reliability and lifetime of the switch may vary with the type of load and other conditions. It is recommended that the switch is used in actual applications only after correct operation is confirmed under the conditions in which it will be used.

Mounting

Usually, the switch is set to 0. Do not change this setting throughout the mounting and soldering procedures.

Soldering

Observe the following conditions when soldering the switch.

Automatic Soldering Bath (Flow Soldering Bath)

Soldering temperature: 260°C max.
Soldering time: 5 s max. for a 1.6-mm thick, single-side PCB

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, the flux may have an adverse effect on the switch if it enters the switch interior.

Manual Soldering

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

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

Before soldering the switch on a multilayer PCB, carry out a test to confirm that soldering can be performed properly. The switch may be deformed by the soldering heat on the pattern or land of the multilayer PCB.

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

Washing

The switch cannot be washed.

Wipe dirt off the switch surface using alcohol.

Handling

Do not apply excessive operating force to the switch, or the switch may be damaged or deformed, thus causing the switch mechanism to malfunction as a result. Apply an operating force not exceeding 200% of the maximum rated operating force to the switch.

Set the switch with a flat-blade screwdriver that fits into the screwdriver groove. Using a flat-blade screwdriver of inappropriate dimensions, or using a tool other than a flat-blade screwdriver may cause damage to the groove, and it may become impossible to operate the switch.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters into inches, divide by 25.4

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