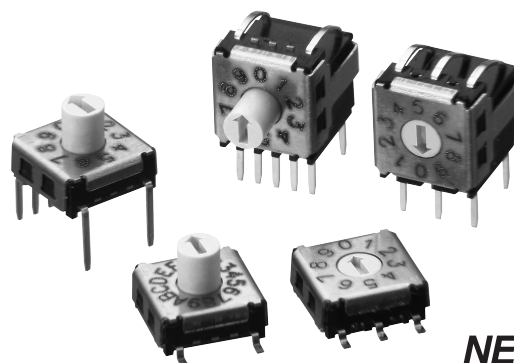


# Miniature Rotary DIP Switch A6K/A6KS

## Miniature (7.2 × 7.2mm size) Rotary DIP Switch

- Mounting space reduced by 50%.  
(compared with conventional models)
- SMT and through hole type Available.  
Side-actuated type available.
- Gold-plated contacts ensure high reliability.
- RoHS Compliant

**NEW**

## Ordering Information

### ■ Through hole type

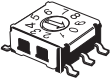
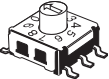
| 3 × 3 Terminal, tube packaging |                  |                   | Top-actuated flat | Top-actuated extended shaft | Side-actuated flat | Side-actuated extended shaft |
|--------------------------------|------------------|-------------------|-------------------|-----------------------------|--------------------|------------------------------|
|                                |                  |                   |                   |                             |                    |                              |
| Output code                    | No. of positions | Quantity per tube |                   |                             |                    |                              |
| BCD 1-2-4-8                    | 10               | Top: 63           | A6K-102RF         | A6K-102RS                   | A6KV-102RF         | A6KV-102RS                   |
| BCD Hexadecimal 1-2-4-8        | 16               | Side: 60          | A6K-162RF         | A6K-162RS                   | A6KV-162RF         | A6KV-162RS                   |

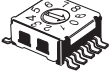
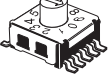
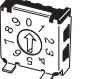
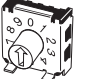
| 5 × 2 Terminal, tube packaging |                  |                   | Top-actuated flat | Top-actuated extended shaft | Side-actuated flat | Side-actuated extended shaft |
|--------------------------------|------------------|-------------------|-------------------|-----------------------------|--------------------|------------------------------|
|                                |                  |                   |                   |                             |                    |                              |
| Output code                    | No. of positions | Quantity per tube |                   |                             |                    |                              |
| BCD 1-2-4-8                    | 10               | Top: 63           | A6K-104RF         | A6K-104RS                   | A6KV-104RF         | A6KV-104RS                   |
| BCD Hexadecimal 1-2-4-8        | 16               | Side: 60          | A6K-164RF         | A6K-164RS                   | A6KV-164RF         | A6KV-164RS                   |

### ■ SMT type

| 3 × 3 Terminal, tube packaging |                  |                   | Top-actuated flat | Top-actuated extended shaft |
|--------------------------------|------------------|-------------------|-------------------|-----------------------------|
|                                |                  |                   |                   |                             |
| Output code                    | No. of positions | Quantity per tube |                   |                             |
| BCD 1-2-4-8                    | 10               | 63                | A6KS-102RF        | A6KS-102RS                  |
| BCD Hexadecimal 1-2-4-8        | 16               |                   | A6KS-162RF        | A6KS-162RS                  |

| 5 × 2 Terminal, tube packaging |                  |                   | Top-actuated flat | Top-actuated extended shaft | Side-actuated flat | Side-actuated extended shaft |
|--------------------------------|------------------|-------------------|-------------------|-----------------------------|--------------------|------------------------------|
|                                |                  |                   |                   |                             |                    |                              |
| Output code                    | No. of positions | Quantity per tube |                   |                             |                    |                              |
| BCD 1-2-4-8                    | 10               | 63                | A6KS-104RF        | A6KS-104RS                  | A6KSV-104RF        | A6KSV-104RS                  |
| BCD Hexadecimal 1-2-4-8        | 16               |                   | A6KS-164RF        | A6KS-164RS                  | A6KSV-164RF        | A6KSV-164RS                  |

| 3 × 3 Terminal Embossed taping Packages |                  | Top-actuated flat |                                                                                   | Top-actuated extended shaft |                                                                                   |
|-----------------------------------------|------------------|-------------------|-----------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|
| Output code                             | No. of positions | Quantity per reel |  | Quantity per reel           |  |
| BCD 1-2-4-8                             | 10               | 1450              | A6KS-102RF-P                                                                      | 850                         | A6KS-102RS-P                                                                      |
| BCD Hexadecimal 1-2-4-8                 | 16               |                   | A6KS-162RF-P                                                                      |                             | A6KS-162RS-P                                                                      |

| 5 × 2 Terminal Embossed taping Packages |                  | Top-actuated flat |                                                                                   | Top-actuated extended shaft |                                                                                   | Side-actuated flat |                                                                                     | Side-actuated extended shaft |                                                                                     |
|-----------------------------------------|------------------|-------------------|-----------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|
| Output code                             | No. of positions | Quantity per reel |  | Quantity per reel           |  | Quantity per reel  |  | Quantity per reel            |  |
| BCD 1-2-4-8                             | 10               | 1450              | A6KS-104RF-P                                                                      | 850                         | A6KS-104RS-P                                                                      | 750                | A6KSV-104RF-P                                                                       | 750                          | A6KSV-104RS-P                                                                       |
| BCD Hexadecimal 1-2-4-8                 | 16               |                   | A6KS-164RF-P                                                                      |                             | A6KS-164RS-P                                                                      |                    | A6KSV-164RF-P                                                                       |                              | A6KSV-164RS-P                                                                       |

## Specifications

### ■ Characteristics

|                               |                        |                                                                       |
|-------------------------------|------------------------|-----------------------------------------------------------------------|
| Switching capacity            |                        | 25 mA at 24 VDC                                                       |
| Minimum permissible load      |                        | 10 $\mu$ A at 3.5 VDC                                                 |
| Contact resistance            |                        | 200 m $\Omega$ max.                                                   |
| Insulation resistance         |                        | 100 M $\Omega$ min. (at 250 VDC)                                      |
| Dielectric strength           |                        | 250 VAC for 1 min between terminals                                   |
| Operating torque              |                        | 200 g-cm max. (1.96 $\times$ 10 <sup>-2</sup> N-m max.)               |
| Vibration resistance          | Malfunction durability | 10 to 55 Hz, 1.5-mm double amplitude                                  |
| Shock resistance              | Malfunction durability | 300 m/s <sup>2</sup> min.                                             |
| Ambient operating temperature |                        | -30 to 80°C at 60% max. (with no icing or condensation)               |
| Ambient operating humidity    |                        | 35% to 95% (at 5 to 35°C)                                             |
| Electrical service life       |                        | 20,000 steps min.                                                     |
| Weight (See note 2.)          | Through hole terminal  | Top-actuated, flat: Approx. 0.4 g, Side-actuated, flat: Approx. 0.7 g |
|                               | SMT terminal           | Top-actuated, flat: Approx. 0.4 g, Side-actuated, flat: Approx. 0.4 g |

Note: 1. Data shown are of initial value.  
2. Add 0.03 g for the extended-shaft version of each model.

### ■ Output Codes

#### 10-position Models

| Type | BCD 1-2-4-8 |   |   |   |
|------|-------------|---|---|---|
|      | 1           | 2 | 4 | 8 |
| 0    |             |   |   |   |
| 1    | ●           |   |   |   |
| 2    |             | ● |   |   |
| 3    | ●           | ● |   |   |
| 4    |             |   | ● |   |
| 5    | ●           |   | ● |   |
| 6    |             | ● | ● |   |
| 7    | ●           | ● | ● |   |
| 8    |             |   |   | ● |
| 9    | ●           |   |   | ● |

#### 16-position Models

| Type | BCD/hexadecimal 1-2-4-8 |   |   |   |
|------|-------------------------|---|---|---|
|      | 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.

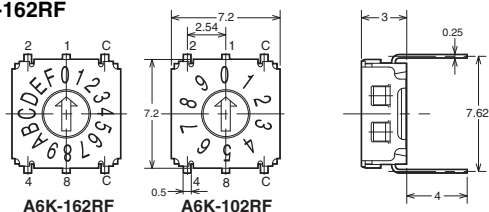
2. Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

## Through hole type

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

A6K-102RF

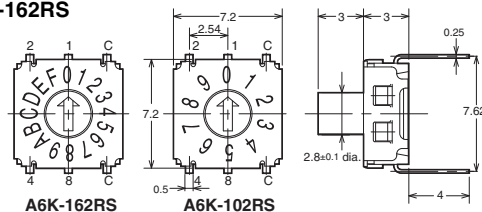
A6K-162RF



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

A6K-102RS

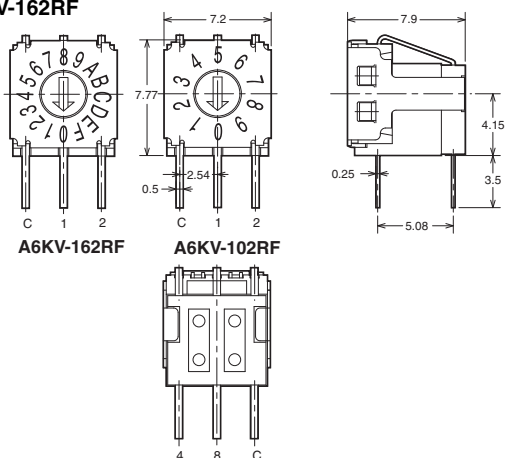
A6K-162RS



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

A6KV-102RF

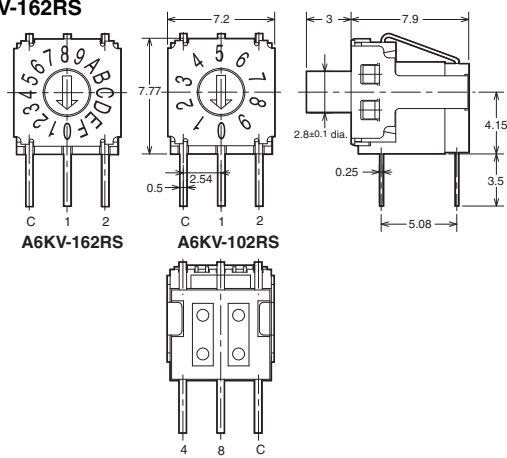
A6KV-162RF



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

A6KV-102RS

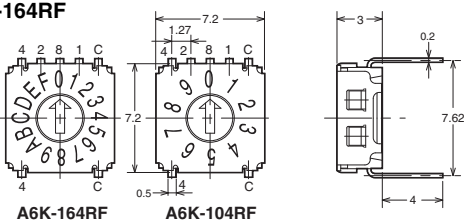
A6KV-162RS



### Top-actuated Flat Models with 5x2 Terminal Arrangement

A6K-104RF

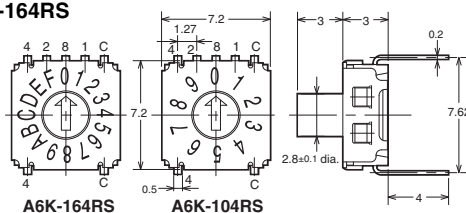
A6K-164RF



### Top-actuated Extended shaft Models with 5x2 Terminal Arrangement

A6K-104RS

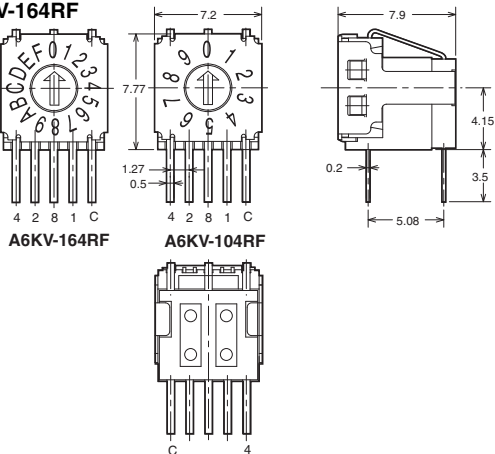
A6K-164RS



### Side-actuated Flat Models with 5x2 Terminal Arrangement

A6KV-104RF

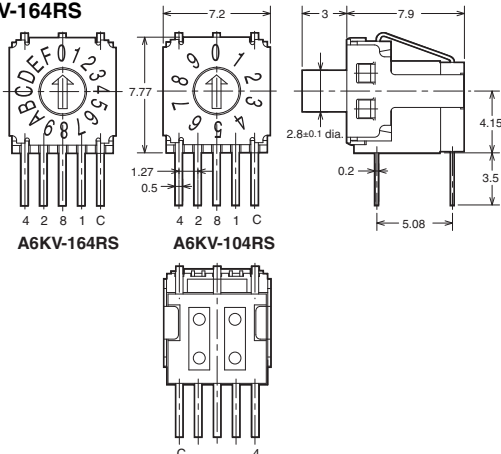
A6KV-164RF



### Side-actuated Extended-shaft Models with 5x2 Terminal Arrangement

A6KV-104RS

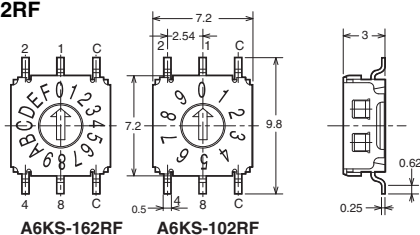
A6KV-164RS



## ■ SMT type

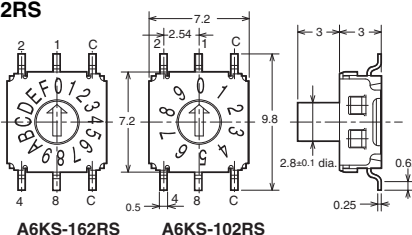
### Top-actuated Flat Models with 3x3 Terminal Arrangement

A6KS-102RF  
A6KS-162RF



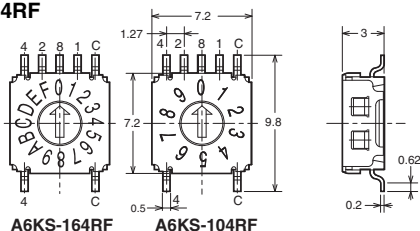
### Top-actuated Extended shaft Models with 3x3 Terminal Arrangement

A6KS-102RS  
A6KS-162RS



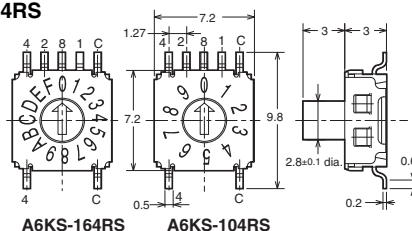
### Top-actuated Flat Models With 5x2 Terminal Arrangement

A6KS-104RF  
A6KS-164RF



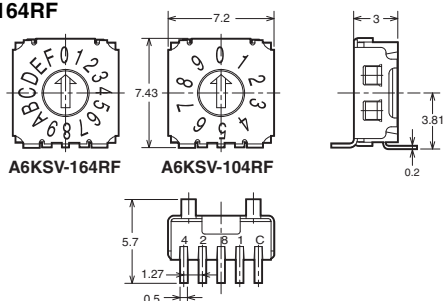
### Top-actuated Extended shaft Models with 5x2 Terminal Arrangement

A6KS-104RS  
A6KS-164RS



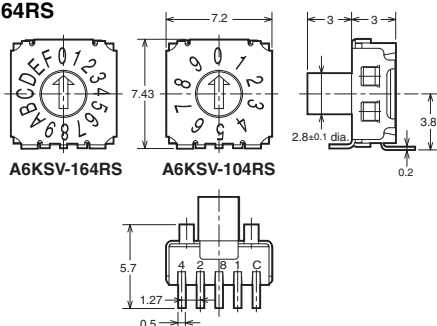
### Side-actuated Flat Models with 5x2 Terminal Arrangement

A6KSV-104RF  
A6KSV-164RF



### Side-actuated Extended-shaft Models with 5x2 Terminal Arrangement

A6KSV-104RS  
A6KSV-164RS



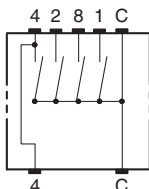
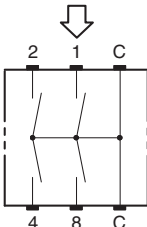
## ■ Internal Connections

### Top-actuated

#### 3x3 Terminal Arrangement 5x2 Terminal Arrangement

Through hole type and SMT type Through hole type and SMT type

Actuator surface



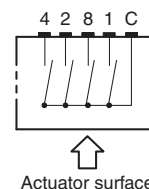
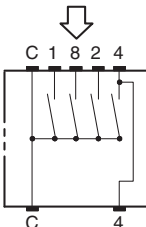
Note: 3x3 internal diagram applies to both top and side actuated models

### Side-actuated

#### 5x2 Terminal Arrangement 5x2 Terminal Arrangement

Through hole type SMT type

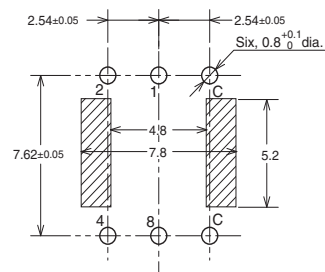
Actuator surface



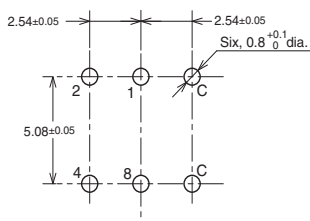
# ■ PCB Cutout Dimensions (Top View)

## 3×3 Terminal Arrangement

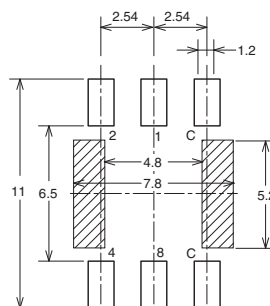
Through hole  
(Top-actuated Models)



Through hole  
(Side-actuated Models)

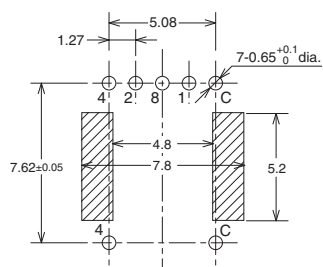


SMT  
(Top-actuated Models)

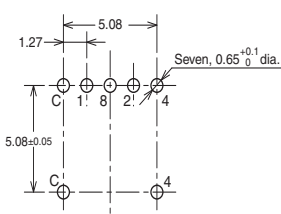


## 5×2 Terminal Arrangement

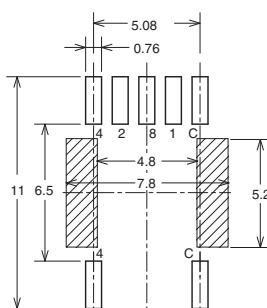
Through hole  
(Top-actuated Models)



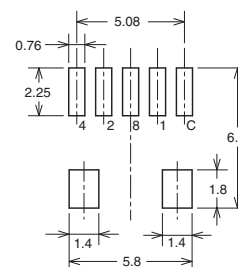
Through hole  
(Side-actuated Models)



SMT  
(Top-actuated Models)



SMT  
(Side-actuated Models)



 Through hole: Pattern prohibited area

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**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**

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

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