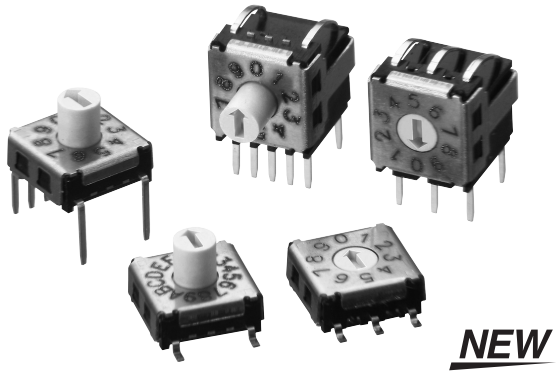
# Miniature Rotary DIP Switch
# A6K/A6KS

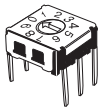
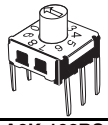
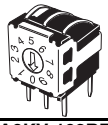
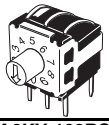
**Miniature (7.2 × 7.2mm size) Rotary DIP Switch**

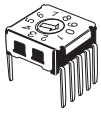
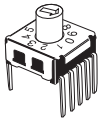
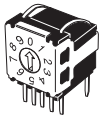
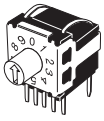
- Mounting space reduced by 50%. (compared with conventional models)
- SMT and through hole type Available. Side-actuated type available.
- Gold-plated contacts ensure high reliability.
- RoHS Compliant



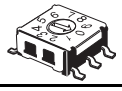
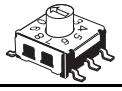

## Ordering Information

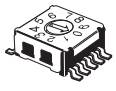
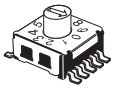
### ■ Through hole type

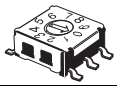
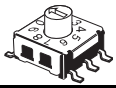
| 3 × 3 Terminal, tube packaging | | | Top-actuated flat | Top-actuated extended shaft | Side-actuated flat | Side-actuated extended shaft |
|---|---|---|---|---|---|---|
| Output code | No. of positions | Quantity per tube |  |  |  |  |
| BCD 1-2-4-8 | 10 | Top: 63 Side: 60 | A6K-102RF | A6K-102RS |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

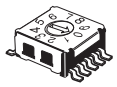
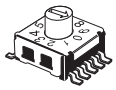
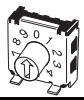
| 5 × 2 Terminal, tube packaging | | | Top-actuated flat | Top-actuated extended shaft | Side-actuated flat | Side-actuated extended shaft |
|---|---|---|---|---|---|---|
| Output code | No. of positions | Quantity per tube |  |  |  |  |
| BCD 1-2-4-8 | 10 | Top: 63 Side: 60 | A6K-104RF | A6K-104RS | A6KV-104RF | A6KV-104RS |
| BCD Hexadecimal 1-2-4-8 | 16 | | 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 μA at 3.5 VDC |
| **Contact resistance** | | 200 mΩ max. |
| **Insulation resistance** | | 100 MΩ min. (at 250 VDC) |
| **Dielectric strength** | | 250 VAC for 1 min between terminals |
| **Operating torque** | | 200 g-cm max. ($1.96 \times 10^{-2}$ N·m max.) |
| **Vibration resistance** | **Malfunction durability** | 10 to 55 Hz, 1.5-mm double amplitude |
| **Shock resistance** | **Malfunction durability** | 300 m/s$^2$ 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 | | | |
|---|---|---|---|---|
| Terminal No. / Position | 1 | 2 | 4 | 8 |
| 0 | | | | |
| 1 | ● | | | |
| 2 | | ● | | |
| 3 | ● | ● | | |
| 4 | | | ● | |
| 5 | ● | | ● | |
| 6 | | ● | ● | |
| 7 | ● | ● | ● | |
| 8 | | | | ● |
| 9 | ● | | | ● |

**16-position Models**

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

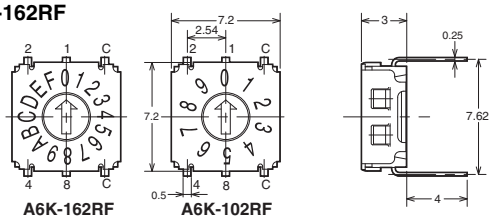
**Note:** "●" indicates that the internal switch is ON.

# Dimensions

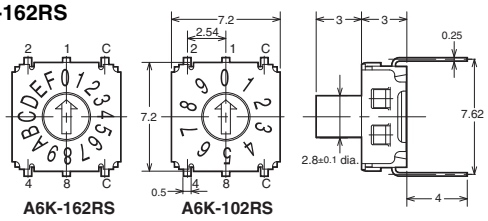
**Note: 1.** All units are in millimeters unless otherwise indicated.
**2.** Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

## ■ Through hole type

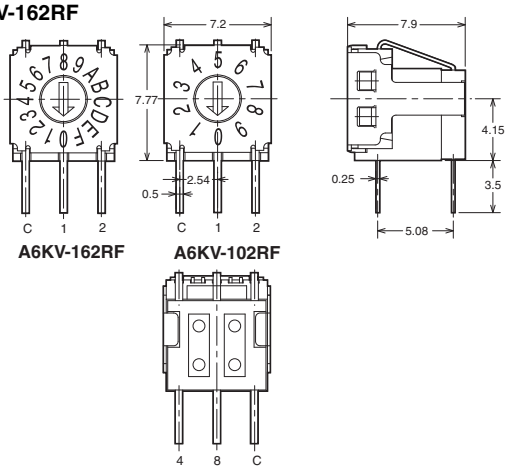
**Top-actuated Flat Models with 3×3 Terminal Arrangement**
**A6K-102RF**
**A6K-162RF**



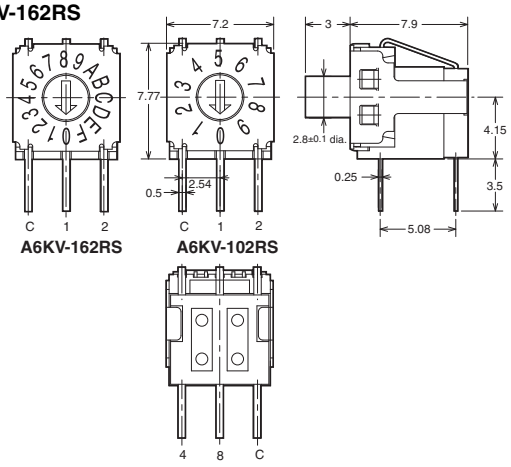

**Top-actuated Extended shaft Models with 3×3 Terminal Arrangement**
**A6K-102RS**
**A6K-162RS**



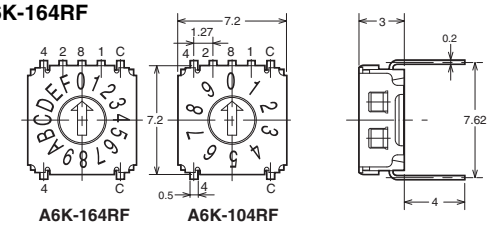

**Side-actuated Flat Models with 3×3 Terminal Arrangement**
**A6KV-102RF**
**A6KV-162RF**



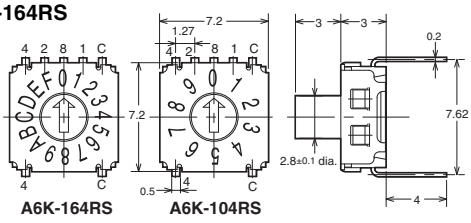

**Side-actuated Extended-shaft Models with 3×3 Terminal Arrangement**
**A6KV-102RS**
**A6KV-162RS**



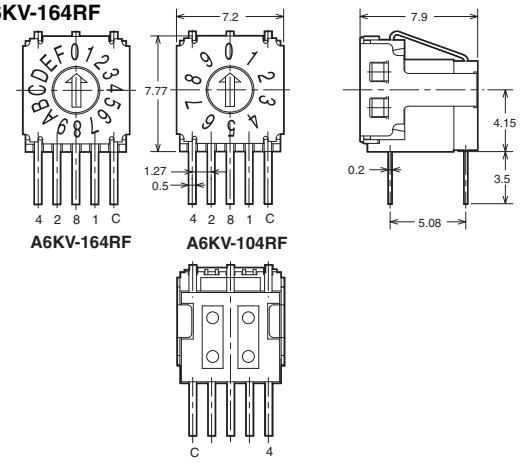

**Top-actuated Flat Models with 5×2 Terminal Arrangement**
**A6K-104RF**
**A6K-164RF**



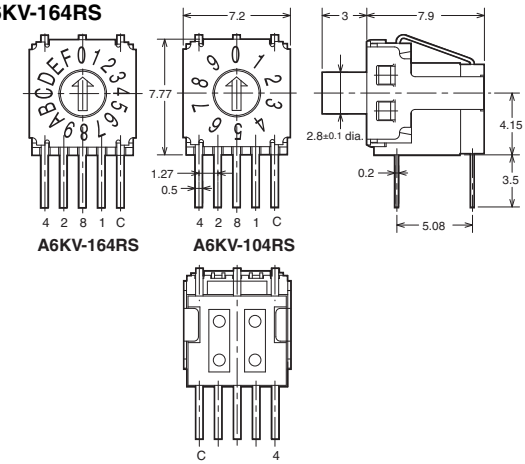

**Top-actuated Extended shaft Models with 5×2 Terminal Arrangement**
**A6K-104RS**
**A6K-164RS**




**Side-actuated Flat Models with 5×2 Terminal Arrangement**
**A6KV-104RF**
**A6KV-164RF**

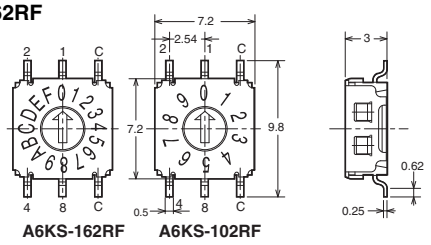



**Side-actuated Extended-shaft Models with 5×2 Terminal Arrangement**
**A6KV-104RS**
**A6KV-164RS**

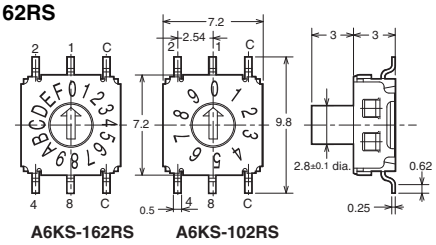


## ■ SMT type

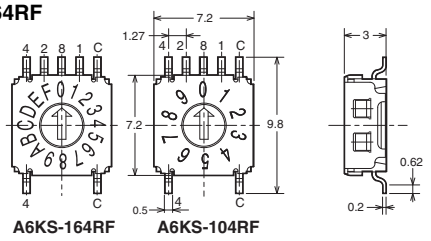
**Top-actuated Flat Models with 3×3 Terminal Arrangement**
**A6KS-102RF**
**A6KS-162RF**



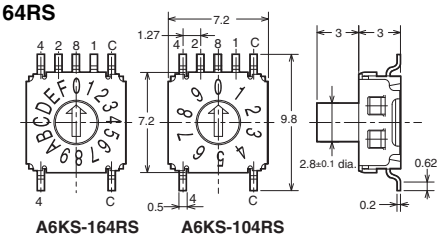

**Top-actuated Extended shaft Models with 3×3 Terminal Arrangement**
**A6KS-102RS**
**A6KS-162RS**



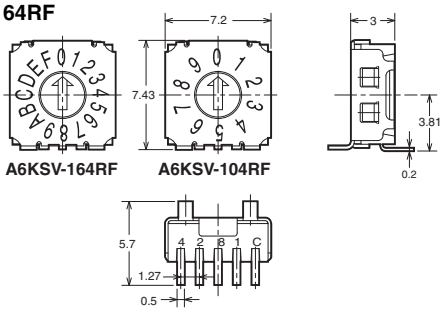

**Top-actuated Flat Models With 5×2 Terminal Arrangement**
**A6KS-104RF**
**A6KS-164RF**



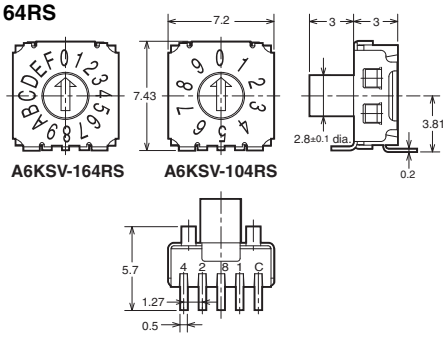

**Top-actuated Extended shaft Models with 5×2 Terminal Arrangement**
**A6KS-104RS**
**A6KS-164RS**




**Side-actuated Flat Models with 5×2 Terminal Arrangement**
**A6KSV-104RF**
**A6KSV-164RF**



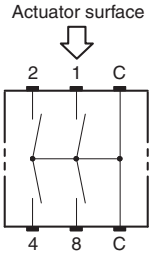

**Side-actuated Extended-shaft Models with 5×2 Terminal Arrangement**
**A6KSV-104RS**
**A6KSV-164RS**



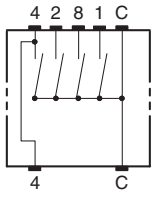

## ■ Internal Connections

**Top-actuated**

**3x3 Terminal Arrangement**
**Through hole type and SMT type**



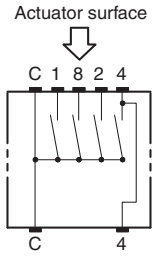

**5x2 Terminal Arrangement**
**Through hole type and SMT type**



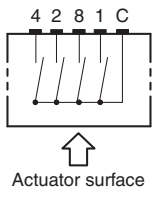

**Note:** 3x3 internal diagram applies to both top and side actuated models

**Side-actuated**

**5x2 Terminal Arrangement**
**Through hole type**



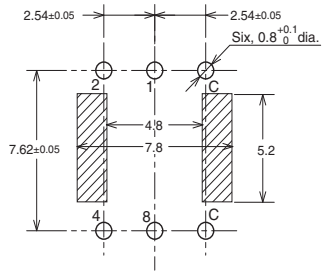

**5x2 Terminal Arrangement**
**SMT type**



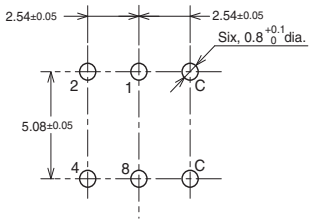
# ■ PCB Cutout Dimensions (Top View)

## 3×3 Terminal Arrangement

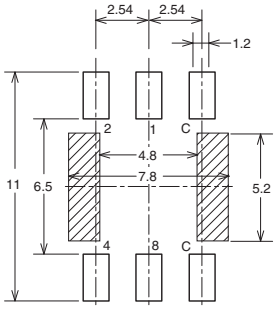
**Through hole (Top-actuated Models)**




**Through hole (Side-actuated Models)**

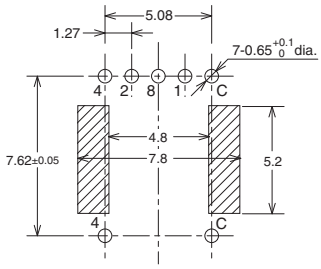



**SMT (Top-actuated Models)**

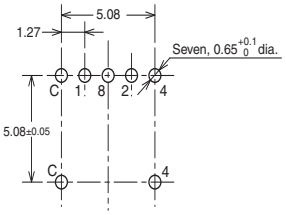



## 5×2 Terminal Arrangement

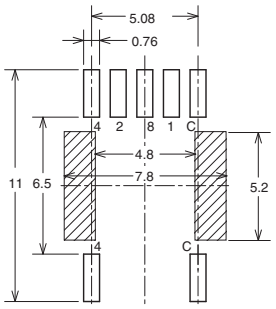
**Through hole (Top-actuated Models)**



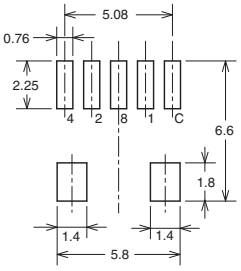

**Through hole (Side-actuated Models)**




**SMT (Top-actuated Models)**




**SMT (Side-actuated Models)**




Through hole: Pattern prohibited area

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