

# Insulated Shaft Potentiometer 11mm Size Insulated Shaft Snap-in Type

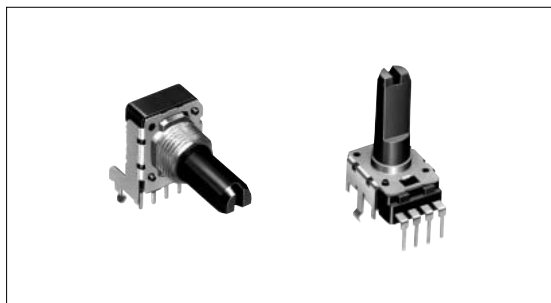
RK11K Series



A 11mm width potentiometer for audio, visual, electronic musical instruments and various applications.

Rotary  
Potentiometers

Slide  
Potentiometers



## Typical Specifications

| Items                       | Specifications    |
|-----------------------------|-------------------|
| Total resistance tolerance  | $\pm 20\%$        |
| Total rotational angle      | $300 \pm 5^\circ$ |
| Rotational torque           | 3 to 20mN·m       |
| Operating life              | 15,000cycles      |
| Operating temperature range | - 10 to + 70      |

Metal  
Shaft

Insulated  
Shaft

Knob  
Operating

## Product Line

| Number of resistor elements | Mounting direction | Bushing | Shaft type | Length of the shaft LM( mm ) | Center detent | Total resistance ( k $\Omega$ ) | Resistance taper | Minimum order unit ( pcs. ) | Products No. | Drawing No. |
|-----------------------------|--------------------|---------|------------|------------------------------|---------------|---------------------------------|------------------|-----------------------------|--------------|-------------|
| Single-unit ( 20V DC )      | Vertical type      | Without | Flat       | 15                           | Without       | 10                              | 1B               | 1,200                       | RK11K1130A2X | 2           |
|                             |                    |         |            | 20                           | With          |                                 |                  | 1,000                       | RK11K1130A0M |             |
|                             |                    |         |            |                              | 25            |                                 |                  | Without                     | 800          |             |
|                             |                    |         |            | 20                           | With          | 20                              |                  | RK11K1130A07                |              |             |
|                             |                    |         |            |                              | 22.5          | Without                         |                  | 10                          | 1,000        |             |
|                             |                    | 25      |            | Without                      | 10            |                                 |                  |                             |              | 800         |
|                             |                    | 27.5    |            |                              |               | Without                         |                  | 20                          | RK11K1140A9L |             |
|                             |                    | 30      |            | Without                      | 10            |                                 |                  |                             | RK11K1140A23 |             |
|                             |                    | 32.5    |            |                              |               | Without                         |                  | 10                          | RK11K114001Z |             |
|                             |                    | 25      |            | Without                      | 20            |                                 |                  |                             | RK11K1140A3L |             |
|                             | 22.5               | With    |            |                              |               | 20                              |                  | RK11K1140A4Q                |              |             |
|                             | Horizontal type    | Without |            | 27.5                         | Without       | 10                              |                  | RK11K1140A2S                | 1            |             |
|                             |                    |         |            | 25                           | Without       | 20                              |                  | RK11K1110A3D                |              |             |
|                             |                    | With    |            | 22.5                         | With          | 20                              |                  | 1,000                       | RK11K1120060 | 3           |
|                             |                    |         |            | 25                           | Without       | 10                              |                  | 800                         | RK11K1120A5T |             |
|                             |                    |         |            | 27.5                         | Without       | 20                              |                  | 15A                         | RK11K1120A31 |             |

## Notes

- Products other than those listed in above products are also available. Please contact us for details.
- Nut and washer are not attached. Please specify if required.

Refer to P.376 for product varieties.

■ Dimensions

Unit:mm

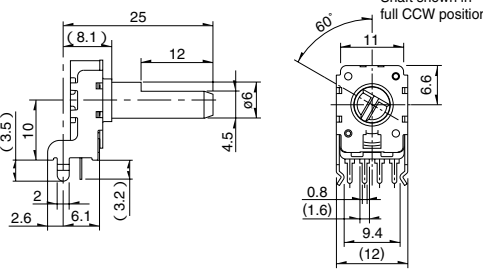
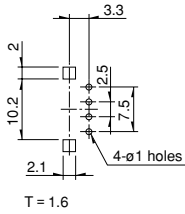
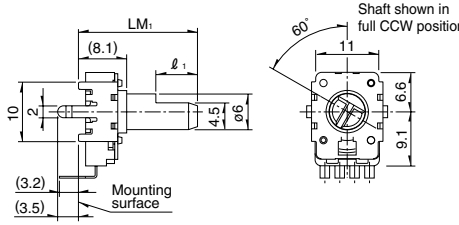
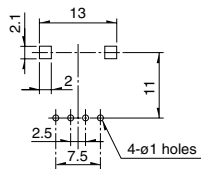
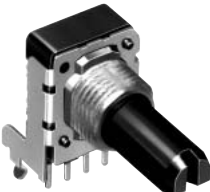
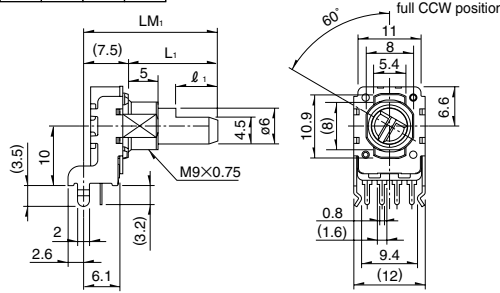
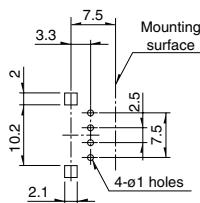
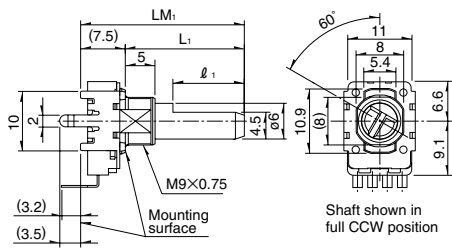
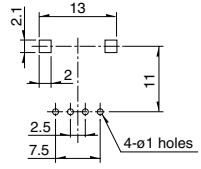
Rotary  
Potentiometers

Slide  
Potentiometers

Metal  
Shaft

Insulated  
Shaft

Knob  
Operating

| No.             | Photo                                                                                                                                                    | Style                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PC board mounting hole dimensions<br>(Viewed from mounting side)                                                  |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------|------|------|----------------|-----|------|----------------|-------------------------------------------------------------------------------------------------|----|------|----|--------------------------------------------------------------------------------------------------|----|----------------|---|---|----|----|----|----|--------------------------------------------------------------------------------------------------|
| 1               | <div>Horizontal type without bushing<br/>RK11K111( Single-unit )</div>  | <div></div>                                                                                                                                                                                                                                                                                                                                                                              | <div></div> <div>T = 1.6</div> |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| 2               | <div>Vertical type without bushing<br/>RK11K113( Single-unit )</div>   | <div><table border="1" data-bbox="655 754 823 799"><tr><td>LM<sub>1</sub></td><td>15</td><td>20</td><td>25</td></tr><tr><td>ℓ<sub>1</sub></td><td>4.5</td><td>7</td><td>12</td></tr></table><br/></div>                                                                                                                                                                                 | LM <sub>1</sub>                                                                                                   | 15   | 20   | 25   | ℓ <sub>1</sub> | 4.5 | 7    | 12             | <div></div> |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| LM <sub>1</sub> | 15                                                                                                                                                       | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 25                                                                                                                |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| ℓ <sub>1</sub>  | 4.5                                                                                                                                                      | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12                                                                                                                |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| 3               | <div>Horizontal type with bushing<br/>RK11K112( Single-unit )</div>   | <div><table border="1" data-bbox="655 1151 823 1218"><tr><td>LM<sub>1</sub></td><td>22.5</td><td>25</td><td>27.5</td></tr><tr><td>L<sub>1</sub></td><td>15</td><td>17.5</td><td>20</td></tr><tr><td>ℓ<sub>1</sub></td><td>7</td><td>12</td><td>12</td></tr></table><br/></div>                                                                                                         | LM <sub>1</sub>                                                                                                   | 22.5 | 25   | 27.5 | L <sub>1</sub> | 15  | 17.5 | 20             | ℓ <sub>1</sub>                                                                                  | 7  | 12   | 12 | <div></div> |    |                |   |   |    |    |    |    |                                                                                                  |
| LM <sub>1</sub> | 22.5                                                                                                                                                     | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 27.5                                                                                                              |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| L <sub>1</sub>  | 15                                                                                                                                                       | 17.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20                                                                                                                |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| ℓ <sub>1</sub>  | 7                                                                                                                                                        | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 12                                                                                                                |      |      |      |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| 4               | <div>Vertical type with bushing<br/>RK11K114( Single-unit )</div>     | <div><table border="1" data-bbox="655 1538 948 1606"><tr><td>LM<sub>1</sub></td><td>20</td><td>22.5</td><td>25</td><td>27.5</td><td>30</td><td>32.5</td></tr><tr><td>L<sub>1</sub></td><td>12.5</td><td>15</td><td>17.5</td><td>20</td><td>22.5</td><td>25</td></tr><tr><td>ℓ<sub>1</sub></td><td>7</td><td>7</td><td>12</td><td>12</td><td>12</td><td>12</td></tr></table><br/></div> | LM <sub>1</sub>                                                                                                   | 20   | 22.5 | 25   | 27.5           | 30  | 32.5 | L <sub>1</sub> | 12.5                                                                                            | 15 | 17.5 | 20 | 22.5                                                                                             | 25 | ℓ <sub>1</sub> | 7 | 7 | 12 | 12 | 12 | 12 | <div></div> |
| LM <sub>1</sub> | 20                                                                                                                                                       | 22.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 25                                                                                                                | 27.5 | 30   | 32.5 |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| L <sub>1</sub>  | 12.5                                                                                                                                                     | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 17.5                                                                                                              | 20   | 22.5 | 25   |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |
| ℓ <sub>1</sub>  | 7                                                                                                                                                        | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12                                                                                                                | 12   | 12   | 12   |                |     |      |                |                                                                                                 |    |      |    |                                                                                                  |    |                |   |   |    |    |    |    |                                                                                                  |

Product Varieties

In addition to the recommended products, the following specifications can also be accommodated.

Total Resistance Variety

|                      |   |    |    |    |     |     |
|----------------------|---|----|----|----|-----|-----|
| Total resistance(kΩ) | 5 | 10 | 20 | 50 | 100 | 200 |
|----------------------|---|----|----|----|-----|-----|

Resistance Taper

|                  |     |    |    |     |
|------------------|-----|----|----|-----|
| Resistance taper | 15A | 1B | 3B | 15C |
|------------------|-----|----|----|-----|

Tapped Types are Also Available

RK11K( single-unit )is also available with tap.

Shaft Variety

Unit:mm

| Style                                                                |                 | Without bushing |    |               |    | With bushing    |      |      |               |      |      |
|----------------------------------------------------------------------|-----------------|-----------------|----|---------------|----|-----------------|------|------|---------------|------|------|
|                                                                      |                 | Horizontal type |    | Vertical type |    | Horizontal type |      |      | Vertical type |      |      |
|                                                                      |                 |                 |    |               |    |                 |      |      |               |      |      |
| Shaft variety                                                        | LM <sub>1</sub> | 15              | 20 | 25            | 30 | 20              | 22.5 | 25   | 27.5          | 30   | 32.5 |
|                                                                      | L <sub>1</sub>  | —               | —  | —             | —  | 12.5            | 15   | 17.5 | 20            | 22.5 | 25   |
|                                                                      | l <sub>1</sub>  | 4.5             | 7  | 12            | 12 | 7               | 7    | 12   | 12            | 12   | 12   |
|                                                                      | LB              | —               | —  | —             | —  | 5               | 5    | 5    | 5             | 5    | 5    |
| <b>Detail dimensions</b><br><br>LM <sub>1</sub> =15 only application |                 |                 |    |               |    |                 |      |      |               |      |      |

Terminal Layout/Circuit Diagram

|                        |                     |
|------------------------|---------------------|
| <b>Without tap</b><br> | <b>With tap</b><br> |
|------------------------|---------------------|

Note

marked are specifications recommended by ALPS.

Refer to P.377, 502 for resistance taper.

## Orders other than recommended products

When ordering product varieties that are not listed in the Product Line, please specify by referring to the below example.

### Sample Part Number

**R K 1 1 K 1 1 4 0** — **F 2 2** — **C 0** — **B 1 0 3**

#### Model type

| Code | Model type                      |
|------|---------------------------------|
| 1    | Horizontal type without bushing |
| 2    | Horizontal type with bushing    |
| 3    | Vertical type without bushing   |
| 4    | Vertical type with bushing      |

#### Shaft type

| Code | Shaft type |
|------|------------|
| F    | Flat       |

\* Only available in flat format.

#### Length of the shaft (LM, X mm)

| Code | Length of the shaft | Code | Length of the shaft |
|------|---------------------|------|---------------------|
| 15   | 15                  | 25   | 25                  |
| 20   | 20                  | 30   | 30                  |
| 22   | 22.5                | 32   | 32.5                |
| 27   | 27.5                |      |                     |

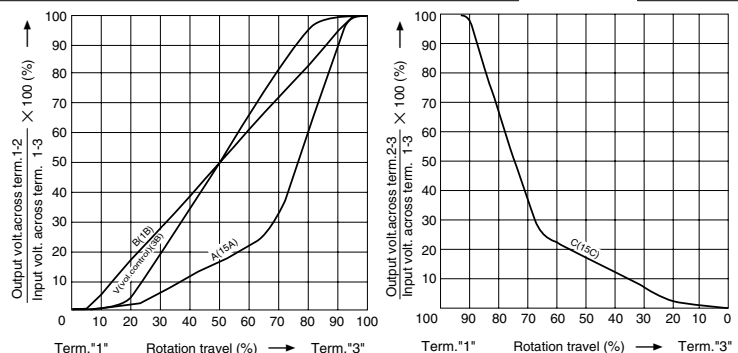
#### Detent

| Code | Center detent |
|------|---------------|
| C0   | Without       |
| C1   | With          |

#### Resistance taper

| Code | Resistance taper | Code | Resistance taper |
|------|------------------|------|------------------|
| A    | 15A              | C    | 15C              |
| B    | 1B               | V    | 3B               |

B: For tone & general  
V: For vol.



#### Total resistance

| Code | Total resistance (kΩ) | Code | Total resistance (kΩ) |
|------|-----------------------|------|-----------------------|
| 502  | 5                     | 503  | 50                    |
| 103  | 10                    | 104  | 100                   |
| 203  | 20                    | 204  | 200                   |

#### Note

marked are specifications recommended by ALPS.

Rotary  
Potentiometers  
Slide  
Potentiometers

Metal  
Shaft  
Insulated  
Shaft  
Knob  
Operating

# List of Varieties

| Items                            |                              |                    | Type                                                                                                                                 | 9mm Size Insulated Shaft Snap-in |                                                                                   | 11mm Size Insulated Shaft Snap-in                                                   | 12mmSize Insulated Shaft Snap-in                                                    | 14mm Size Insulated Shaft Snap-in                                                   | 9mm Size Insulated shaft Long-life |
|----------------------------------|------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|
|                                  |                              |                    | Model                                                                                                                                | RK09K11 □<br>RK09D11 □           | RK09K12 □                                                                         | RK11K11 □                                                                           | RK12L12 □                                                                           | RK14K12 □                                                                           | RK09Y11L                           |
|                                  |                              |                    |                                                                                                                                      | Single-unit                      | Dual-unit                                                                         | Single-unit                                                                         | Dual-unit                                                                           |                                                                                     | Single-unit                        |
| Photo                            |                              |                    |                                                     |                                  |  |  |  |  |                                    |
| Bushing                          |                              |                    | Without                                                                                                                              |                                  | With/Without                                                                      | Without                                                                             | With/Without                                                                        | Without                                                                             |                                    |
| Electrical performanceElectrical | Total resistance tolerance   |                    | ± 20%                                                                                                                                | ± 30%                            | ± 20%                                                                             |                                                                                     |                                                                                     | ± 30%                                                                               |                                    |
|                                  | Maximum operating voltage    |                    | 50V AC<br>20V DC                                                                                                                     | 50V AC<br>For AC only            | 50V AC<br>20V DC                                                                  | 50V AC For AC only                                                                  |                                                                                     | 50V AC<br>5V DC                                                                     |                                    |
|                                  | Insulation resistance        |                    | 100MΩ min. 250V DC                                                                                                                   |                                  | 100MΩ min.<br>500V DC                                                             | 100MΩ min. 250V DC                                                                  |                                                                                     |                                                                                     |                                    |
|                                  | Voltage proof                |                    | 250V AC for 1minute                                                                                                                  |                                  | 500V AC<br>for 1minute                                                            | 300V AC for 1minute                                                                 |                                                                                     | 250V AC<br>for 1minute                                                              |                                    |
|                                  | Gang error                   |                    | —                                                                                                                                    | - 40dB to 0dB<br>3dB max.        | —                                                                                 | Volume control<br>-40dB to 0dB 3dB max.<br>For tone control<br>within 2dB at center |                                                                                     | —                                                                                   |                                    |
| Mechanical performance           | Strength of the actuator     | Stopper strength   | 0.3N・m                                                                                                                               |                                  | Without bushing<br>0.5N・m<br>With bushing<br>0.6N・m                               | 0.5N・m                                                                              | 0.6N・m                                                                              | —                                                                                   |                                    |
|                                  |                              | Push-pull strength | 50N max.                                                                                                                             |                                  | 80N max.                                                                          |                                                                                     |                                                                                     | 30N max.                                                                            |                                    |
|                                  | Vibration                    |                    | 10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z and for 2 hours respectively |                                  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                    |
|                                  | Resistance to soldering heat | Manual soldering   | 350    max. 3s max.                                                                                                                  |                                  |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                    |
|                                  |                              | Dip Soldering      | —                                                                                                                                    |                                  |                                                                                   | 260    max.<br>5s max.                                                              | —                                                                                   |                                                                                     |                                    |
| Environmental performance        | Cold                         |                    | - 30 ± 2    for 96h                                                                                                                  |                                  |                                                                                   |                                                                                     |                                                                                     | - 30 ± 2<br>for 240h                                                                |                                    |
|                                  | Dry heat                     |                    | 70 ± 2    for 96h                                                                                                                    |                                  |                                                                                   | 70 ± 2<br>for 240h                                                                  | 70 ± 2<br>for 96h                                                                   | 70 ± 2<br>for 240h                                                                  |                                    |
|                                  | Damp heat                    |                    | 40 ± 2    , 90 to 95% RH for 96h                                                                                                     |                                  |                                                                                   |                                                                                     |                                                                                     | 40    , 90 to 95%<br>RH for 240h                                                    |                                    |
| Page                             |                              |                    | 368                                                                                                                                  |                                  | 374                                                                               | 378                                                                                 | 381                                                                                 | 385                                                                                 |                                    |

Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

- Insulated Shaft Potentiometers Cautions .....386, 387