RV24 Series

24mm Diameter, Single-Turn, Carbon Industrial Panel Controls

Features

- 24mm diameter, single-turn industrial panel controls
- Carbon film element
- Linear or audio tapers
- Single, tandem and triple units, single shaft; dual unit, dual shaft
- SPST or SPDT switch with 1A or 3A rating
- Shaft lock and center tap models
- Metal shaft and bushing
- Panel mount only
- Right angle ear-lug terminals
- 6mm diameter shafts in slot, flat or round end styles
- Standard 15mm or 20mm shaft length

Specifications

Electrical

- Standard Resistance Range: B = 50Ω to 2MΩ, A,C = 1kΩ to 2MΩ
- Resistance Tolerance: ±10% standard
- End Resistance: 3Ω max.
- Resistance Taper: B = linear; A = CW audio (logarithm); C = CCW audio (logarithm)
- Peak Noise (C.R.V.): 3% or 3Ω, whichever is greater
- Power Rating: B = 0.25 watt; A,C = 0.125 watt at +40°C, 0 watt at +85°C
- Maximum Input Voltage: B = 315VDC; A,C = 200VDC or power rating, whichever is smaller
- Insulation Resistance: 100MΩ minimum at 1,000VDC
- Dielectric Strength: 1,000VAC, 1 minute
- Adjustment Travel: 280°±10°

Mechanical

- Mechanical Travel: 300°±5°
- Shaft Torque: Single Unit = 51 to 306 gf·cm (0.707 to 4.242 oz·in); Other Units = 51 to 510 gf·cm (0.707 to 7.070 oz·in)
- Stop Strength: 9.18 kgf·cm (127.26 oz·in) max.
- Mounting Nut Torque: 15 kgf·cm (207.94 oz·in) max.
- Solderability: 235°C, 5 seconds
- Marking: Model type, taper, resistance code, shaft type, terminal identification, date code

Environmental

- Temperature Range: −10°C to +85°C
- Temperature Characteristics: +85°C, 30 minutes without load
- Load Life: +40°C, 1,000 hours with rated load
- Moisture and Load Life: +40°C, 90-95%RH, 500 hours with rated load
- Thermal Shock: −10°C to +85°C, 5 cycles without load
- Vibration: 10-55Hz, 1.5mm amplitude, 3 directions, 2 hours each
- Soldering Heat Resistance: 350°C, 3 seconds
- Rotational Life: 15,000 cycles (500 cycles for shaft lock models only) without load

Standard Rotary Switches

- Switch Rating: 110VAC, 1A or 3A, SPDT or SPST
- Contact Resistance: 0.05Ω max.
- Operating Torque: 1,530 gf·cm (21.21 oz·in) max.
- Operating Life: 10,000 cycles without load

R = Total Resistance Value; ΔT/R = Total Resistance Change
**RV24 Series**

**Dimensions**

**RV24YN**
Panel Mount, Single Unit, Single Shaft, Right Angle Ear-Lug Terminals
RV24YNHT High Torque, RVB24YN Low Torque, and RV24YS Panel Seal Models available as Special Order.

**RV24YL**
Panel Mount, Single Unit, Single Shaft with Shaft Lock
Right Angle Ear-Lug Terminals

**RV24YNSE & RV24YNSF**
Panel Mount, Single Unit with Switch, Single Shaft
Right Angle Ear-Lug Terminals, Rear Exit Lug Terminals for 1A or 3A SPST Switch
### RV24 Series

#### RV24YNME & RV24YNMF
**Panel Mount, Single Unit with Switch, Single Shaft**
**Right Angle Ear-Lug Terminals, Rear Exit Lug Terminals for 1A or 3A SPDT Switch**

![Diagram](image1)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft type</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>M9 × P0.75</td>
<td></td>
<td>2 ± 0.5*</td>
</tr>
<tr>
<td>φ 2.8 ± 0.2*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>φ 6.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td></td>
<td>10 ± 0.4</td>
</tr>
<tr>
<td>19 ± 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.6 ± 0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L1 ± 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.5 ± 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Anti-Rotation/Locating Lug

#### RV24YN
**Panel Mount, Single Unit with Center Tap, Single Shaft**
**Right Angle Ear-Lug Terminals, Tap Lug Terminal 180° from Terminal #2**

![Diagram](image2)

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<tr>
<td>L1 ± 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.5 ± 1</td>
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</tr>
</tbody>
</table>

*Anti-Rotation/Locating Lug

#### RV24YG
**Panel Mount, Ganged Tandem Unit, Single Shaft**
**Right Angle Ear-Lug Terminals on Each Unit**

![Diagram](image3)

<table>
<thead>
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<tr>
<td>Shaft type</td>
<td>S</td>
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<tr>
<td>M9 × P0.75</td>
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<tr>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>18.5 ± 1</td>
<td></td>
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</tbody>
</table>

*Anti-Rotation/Locating Lug

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36 Route 10, East Hanover, NJ 07936  Phone: (800) 631-8083 or (973) 887-2550  FAX: (973) 887-1940
Internet: www.state-elec.com or www.potentiometers.com  e-Mail: sales@state-elec.com
RV24 Series

Dimensions

**RV24YGL**
Panel Mount, Ganged Tandem Unit, Single Shaft with Shaft Lock
Right Angle Ear-Lug Terminals on Each Unit

**RVT24YG**
Panel Mount, Ganged Tandem Unit with Center Tap, Single Shaft
Right Angle Ear-Lug Terminals, Tap Lug Terminal 180° from Terminal #2 on Each Unit

**RV24YGSE**
Panel Mount, Ganged Tandem Unit with Switch, Single Shaft
Right Angle Ear-Lug Terminals on Each Unit, Rear Exit Lug Terminals for 1A SPST Switch
**RV24 Series**

**Dimensions**

**RV24YGME**
Panel Mount, Ganged Tandem Unit with Switch, Single Shaft  
Right Angle Ear-Lug Terminals on Each Unit, Rear Exit Lug Terminals for 1A SPDT Switch

![Diagram of RV24YGME with dimensions and notes]

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**RV24YT**
Panel Mount, Triple Unit, Single Shaft  
Right Angle Ear-Lug Terminals on Each Unit

![Diagram of RV24YT with dimensions and notes]

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**RV24YD**
Panel Mount, Dual Unit, Dual Concentric Shaft  
Right Angle Ear-Lug Terminals on Each Unit

![Diagram of RV24YD with dimensions and notes]
RV24 Series

Dimensions

RV24DME
Panel Mount, Dual Unit with Rear Unit Switch, Dual Concentric Shaft
Right Angle Ear-Lug Terminals on Each Unit, Rear Exit Lug Terminals for 1A SPDT Switch

Unit: mm

Recommended Panel Mounting Holes

*Anti-Rotation/Locating Lug
## Part Numbering System

**RV24 Series**

### Resistance (Ω)

<table>
<thead>
<tr>
<th>Value</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>500</td>
</tr>
<tr>
<td>1.00</td>
<td>102</td>
</tr>
<tr>
<td>2.00</td>
<td>202</td>
</tr>
<tr>
<td>5.00</td>
<td>502</td>
</tr>
<tr>
<td>10.00</td>
<td>103</td>
</tr>
<tr>
<td>20.00</td>
<td>203</td>
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<td>50.00</td>
<td>503</td>
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<td>100.00</td>
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<tr>
<td>200.00</td>
<td>204</td>
</tr>
<tr>
<td>500.00</td>
<td>504</td>
</tr>
</tbody>
</table>

### Resistance Tolerance: K = ±10% (standard).

### Resistance Code: Expressed in ohms. A three digit code where the first two digits are significant figures, and the third digit indicates the number of zeros that follow these figures (i.e., 100 = 10Ω; 101 = 100Ω; 102 = 1,000Ω; 103 = 10,000Ω; 105 = 1,000,000Ω). See table for standard resistance values.

### For Single Unit:
Specify taper and resistance code as shown.

### For Ganged Tandem Unit or Dual Unit:
Specify a taper code and resistance code for each unit starting with the front unit followed by the rear unit. If both units have the same taper and resistance codes, add “X2” suffix per example below. Examples: B103A503 or if both units are the same: B103X2

### For Triple Unit:
Specify a taper code and resistance code for each unit starting with the front unit followed by the middle and rear units. If all units have the same taper and resistance codes, add “X3” suffix per example below. Examples: B103A503B104 or if all units are the same: B103X3

### Resistance Taper: B = Linear.
A = CW Audio (logarithm).
C = CCW Audio (logarithm).

### Shaft End Style: S = Slotted; F = Flattened; R = Round.

### For Single Shaft:
Specify the shaft length (FMS) and shaft end style as shown.

### For Dual Concentric Shaft:
Specify the shaft length (FMS) and shaft end style for the inner shaft followed by the shaft length (FMS) and shaft end style for the outer shaft. Use a dash (‐) to separate the code groups for the inner and outer shaft specifications. Example: 30R-20R

### Standard Shaft Length: 15 = 15mm FMS.
20 = 20mm FMS.
Up to 50mm shaft length available (special order).

### Switch Type: ME = SPDT, 110VAC, 1A, Rear Exit Lug Terminals.
MF = SPDT, 110VAC, 3A, Rear Exit Lug Terminals.
SE = SPST, 110VAC, 1A, Rear Exit Lug Terminals.
SF = SPST, 110VAC, 3A, Rear Exit Lug Terminals.
Blank = No Switch.

### Style: N = Panel Mount, Single Unit, Single Shaft, Right Angle Ear-Lug Terminals.
G = Panel Mount, Ganged Tandem Unit, Single Shaft, Right Angle Ear-Lug Terminals on Each Unit.
GL = Panel Mount, Ganged Tandem Unit, Single Shaft with Shaft Lock, Right Angle Ear-Lug Terminals on Each Unit.
T = Panel Mount, Triple Unit, Single Shaft, Right Angle Ear-Lug Terminals on Each Unit.
D = Panel Mount, Dual Unit, Dual Concentric Shaft, Right Angle Ear-Lug Terminals on Each Unit.

### Operating Temperature Range: Y = −10°C to +85°C.

### Size: 24 = 24mm Diameter.

### Center Tap: T = With Tap; Blank = Without Tap.

### TOCOS Series Name: RV = Carbon Film Element.

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**Standard Nominal Total Resistance Values and Part Numbering Codes**

<table>
<thead>
<tr>
<th>Resistance (Ω)</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>500</td>
</tr>
<tr>
<td>100</td>
<td>101</td>
</tr>
<tr>
<td>200</td>
<td>201</td>
</tr>
<tr>
<td>500</td>
<td>501</td>
</tr>
</tbody>
</table>

Refer to Shaft End Styles Specifications and Hardware Specifications for details and availability. For additional information, refer to Guidelines and Precautions for Using Panel Controls.