

25mm Diameter, Single-Turn, Wirewound Industrial Panel Controls



Features

- 25mm diameter, single-turn industrial panel controls
- Wirewound element
- Linear or audio tapers
- Single and tandem units, single shaft; dual unit, dual shaft
- Metal shaft and bushing
- Shaft lock models available
- Panel mounting styles only
- Right angle ear-lug terminals
- 6mm diameter shafts in slot, flat or round end styles
- Standard 15mm or 20mm shaft length
- Low operating temperature option of -10°C or -30°C , up to $+100^{\circ}\text{C}$

Specifications

Electrical

Standard Resistance Range B = 5Ω to $20\text{k}\Omega$
A, C = 100Ω to $5\text{k}\Omega$

Resistance Tolerance $\pm 10\%$ standard
($\pm 5\%$, $\pm 2\%$ or $\pm 1\%$ special order)

End Resistance $R < 500\Omega = 1\Omega$ max.
 $R \geq 500\Omega = 0.2\%$ max.

Resistance Taper B = linear; A = CW audio (logarithm);
C = CCW audio (logarithm); RA25YPR model is linear only.

Power Rating B = 1.2 watts; A, C = 0.6 watt, at $+40^{\circ}\text{C}$

Insulation Resistance $100\text{M}\Omega$ minimum at 500VDC

Dielectric Strength 500VAC, 1 minute

Theoretical Resolution

Resistance (Ω)	Resolution (%)	Resistance (Ω)	Resolution (%)
5	1.93	500	0.29
10	1.32	1,000	0.19
20	0.85	2,000	0.26
50	0.62	5,000	0.19
100	0.45	10,000	0.15
200	0.38	—	—

Mechanical

Mechanical Travel $300^{\circ} \pm 5^{\circ}$

Shaft Torque

Single Unit 71.4 to 306 gf•cm (0.99 to 4.242 oz•in)

Tandem Unit 71.4 to 714 gf•cm (0.987 to 9.899 oz•in)

Dual Unit 71.4 to 459 gf•cm (0.987 to 6.363 oz•in)

Stop Strength 10.2 kgf•cm (141.4 oz•in) max.

Mounting Nut Torque 15 kgf•cm (207.94 oz•in) max.

Solderability 235°C , 3 seconds

Marking Taper, resistance, resistance tolerance,
terminal identification, date code

Environmental

Temperature Range Y = -10°C to $+100^{\circ}\text{C}$
or X = -30°C to $+100^{\circ}\text{C}$

Temperature Characteristics $+85^{\circ}\text{C}$, 5 hours
without load
 $\Delta T/R \leq \pm 5\%$

Low Temperature Exposure -10°C (Y), -30°C (X)
1 hour without load
 $\Delta T/R \leq \pm 3\%$

Load Life $+40^{\circ}\text{C}$, 1,000 hours with rated load
 $\Delta T/R \leq \pm 3\%$

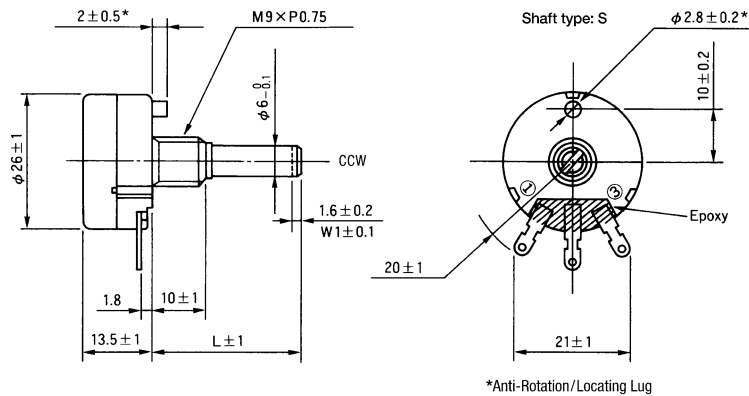
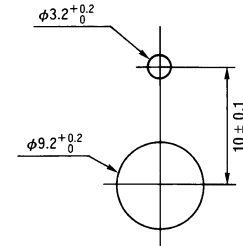
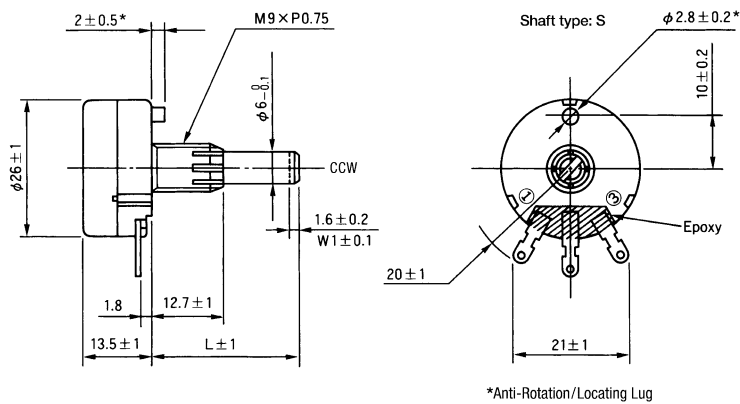
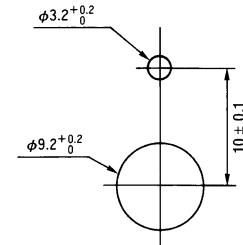
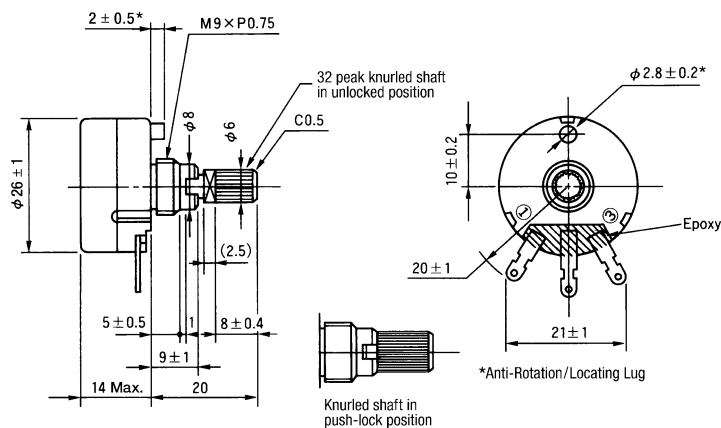
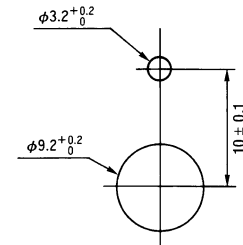
Moisture and Load Life $+40^{\circ}\text{C}$, 90-95% RH,
500 hours with 1/10 rated load
 $\Delta T/R \leq \pm 5\%$

Vibration 10-55Hz, 1.5mm amplitude,
2 directions, 2 hours each
 $\Delta T/R \leq \pm 1\%$

Soldering Heat Resistance 350°C , 3.5 seconds;
 $\Delta T/R \leq \pm 2\%$

Rotational Life 15,000 cycles (500 cycles for shaft lock
models only) with 1/2 rated load
 $\Delta T/R \leq \pm 3\%$

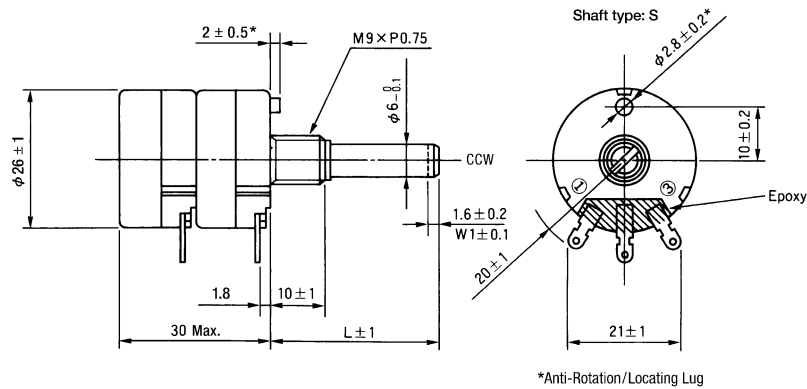
R = Total Resistance Value; $\Delta T/R$ = Total Resistance Change

RA25Y & RA25X
**Panel Mount, Single Unit, Single Shaft
Right Angle Ear-Lug Terminals**

**Recommended
Panel Mounting Holes**

RA25YL & RA25XL
**Panel Mount, Single Unit, Single Shaft with Shaft Lock
Right Angle Ear-Lug Terminals**

**Recommended
Panel Mounting Holes**

RA25YPR
**Panel Mount, Single Unit, Single Knurled Shaft with Push-Lock
Right Angle Ear-Lug Terminals**

**Recommended
Panel Mounting Holes**


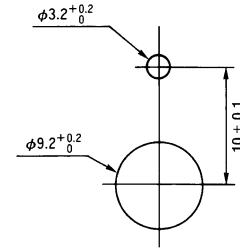
Unit: mm

RA25YG

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

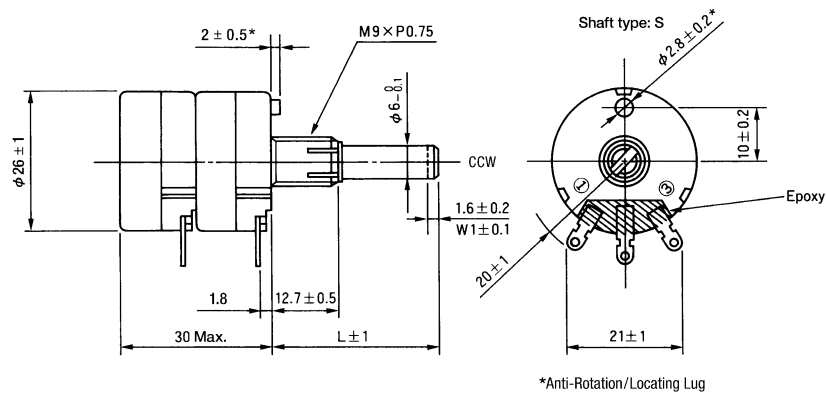


Recommended Panel Mounting Holes

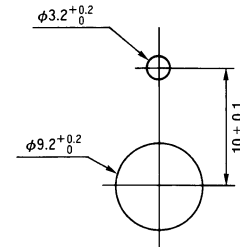


RA25YGL

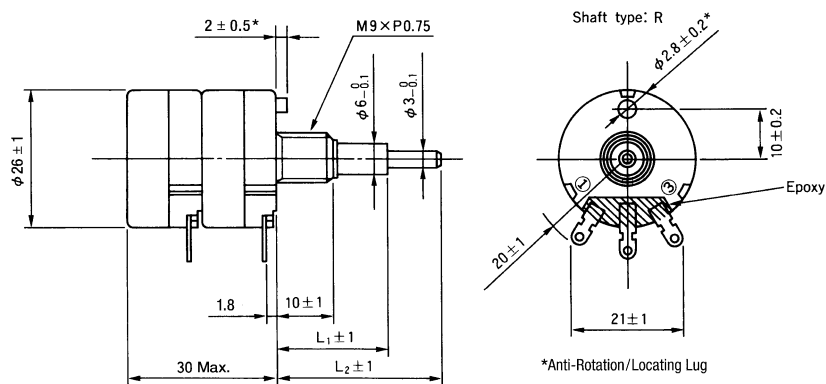
**Panel Mount, Ganged Tandem Unit, Single Shaft with Shaft Lock
Right Angle Ear-Lug Terminals on Each Unit**



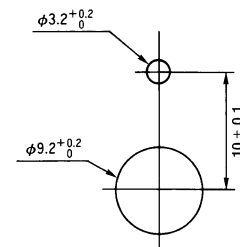
Recommended Panel Mounting Holes

**RA25YD**

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



Recommended Panel Mounting Holes



RA 25 Y L 20 S B 103 K

NOTE: FMS = From Mounting Surface

Resistance Tolerance: K = $\pm 10\%$ (standard).
J = $\pm 5\%$ (special order).
G = $\pm 2\%$ (special order).
F = $\pm 1\%$ (special order).

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. R indicates decimal point for resistance less than 10Ω (i.e., 5R0 = 5Ω ; 100 = 10Ω ; 101 = 100Ω ; 102 = $1,000\Omega$; 103 = $10,000\Omega$). 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

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

Shaft End Style: S = Slotted.
F = Flatted.
R = Round (RA25YPR model has knurled end style.)

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).

Style: Blank = Panel Mount, Single Unit, Single Shaft, Right Angle Ear-Lug Terminals.
L = Panel Mount, Single Unit, Single Shaft with Shaft Lock, Right Angle Ear-Lug Terminals.
PR = Panel Mount, Single Unit, Single Knurled Shaft with Shaft Lock, 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.
D = Panel Mount, Dual Unit, Dual Concentric Shaft, Right Angle Ear-Lug Terminals on Each Unit.

Operating Temperature Range: Y = -10°C to $+100^{\circ}\text{C}$.
X = -30°C to $+100^{\circ}\text{C}$.

Size: 25 = 25mm Diameter.

TOCOS Series Name: RA = Wirewound Element.

Standard Resistance Values and Part Numbering Codes

Standard Nominal Total Resistance Values and Part Numbering Codes

Resistance (Ω)	Code	Resistance (Ω)	Code	Resistance (Ω)	Code	Resistance (Ω)	Code
5	5R0	100	101	1,000	102	10,000	103
10	100	200	201	2,000	202	20,000	203
20	200	500	501	5,000	502		
50	500						

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.