

RA30 Series

TOCOS[®]
PANEL CONTROLS

30mm Diameter, Single-Turn, Wirewound Industrial Panel Controls



Features

- 30mm diameter, single-turn industrial panel controls
- Wirewound 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
- Temperature range of -10°C or -30°C , up to $+100^{\circ}\text{C}$
- Panel mount only
- 6mm diameter shafts in slot, flat or round end styles
- Standard 15mm or 20mm shaft length

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)

Power Rating B = 2.5 watts; A, C = 1.25 watts, 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 | 1.62 | 500 | 0.23 |
| 10 | 0.81 | 1,000 | 0.19 |
| 20 | 0.67 | 2,000 | 0.15 |
| 50 | 0.45 | 5,000 | 0.14 |
| 100 | 0.44 | 10,000 | 0.12 |
| 200 | 0.32 | 20,000 | 0.10 |

Mechanical

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

Shaft Torque

Single Unit 70.1 to $306\text{ gf}\cdot\text{cm}$ (0.972 to $4.242\text{ oz}\cdot\text{in}$)
Tandem Unit 70 to $701\text{ gf}\cdot\text{cm}$ (0.97 to $9.718\text{ oz}\cdot\text{in}$)
Other Units 70 to $450\text{ gf}\cdot\text{cm}$ (0.97 to $6.238\text{ oz}\cdot\text{in}$)

Stop Strength $10.2\text{ kgf}\cdot\text{cm}$ ($141.4\text{ oz}\cdot\text{in}$) max.

Mounting Nut Torque $15\text{ kgf}\cdot\text{cm}$ ($207.94\text{ oz}\cdot\text{in}$) 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
 $\Delta T/R \leq \pm 3\%$

Standard Rotary Switches

Switch Rating 110VAC, 1A or 3A, SPDT or SPST

Contact Resistance 0.05Ω max.

Operating Torque $1,500\text{ gf}\cdot\text{cm}$ ($20.79\text{ oz}\cdot\text{in}$) max.

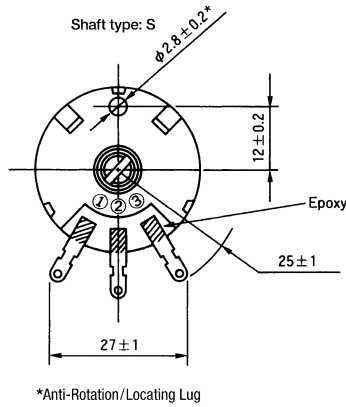
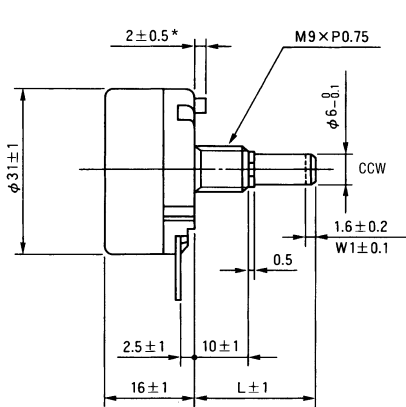
Operating Life 10,000 cycles without load

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

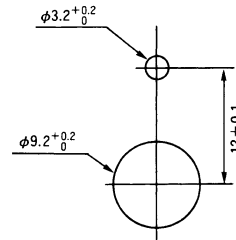
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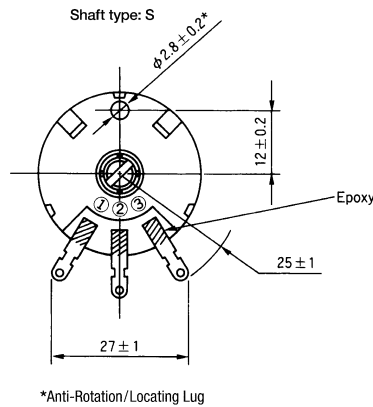
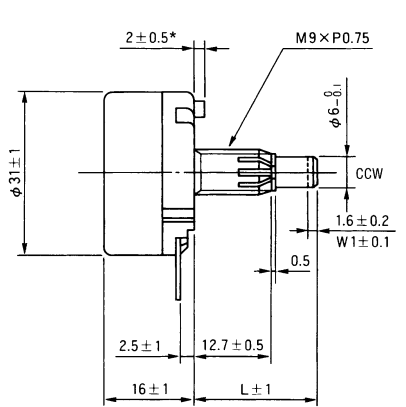
RA30Y & RA30X
Panel Mount, Single Unit, Single Shaft
Right Angle Ear-Lug Terminals



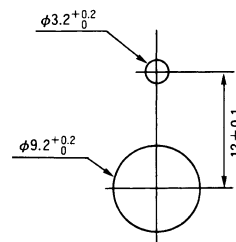
Recommended Panel Mounting Holes



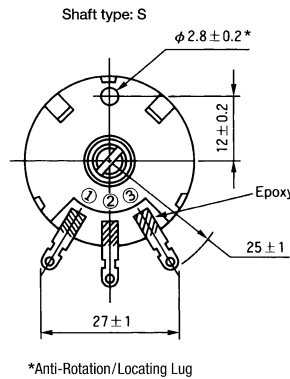
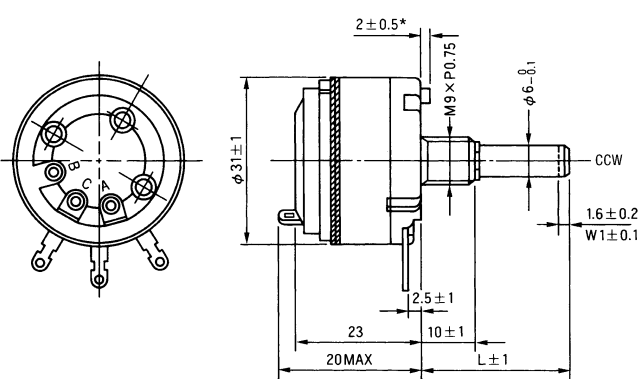
RA30YL & RA30XL
Panel Mount, Single Unit, Single Shaft with Shaft Lock
Right Angle Ear-Lug Terminals



Recommended Panel Mounting Holes



RA30YME, RA30YMF, RA30YSE, RA30YSF
RA30XME, RA30XMF, RA30XSE, RA30XSF
Panel Mount, Single Unit with Switch, Single Shaft
Right Angle Ear-Lug Terminals, Rear Exit Lug Terminals for 1A or 3A SPST or SPDT Switch



Recommended Panel Mounting Holes

