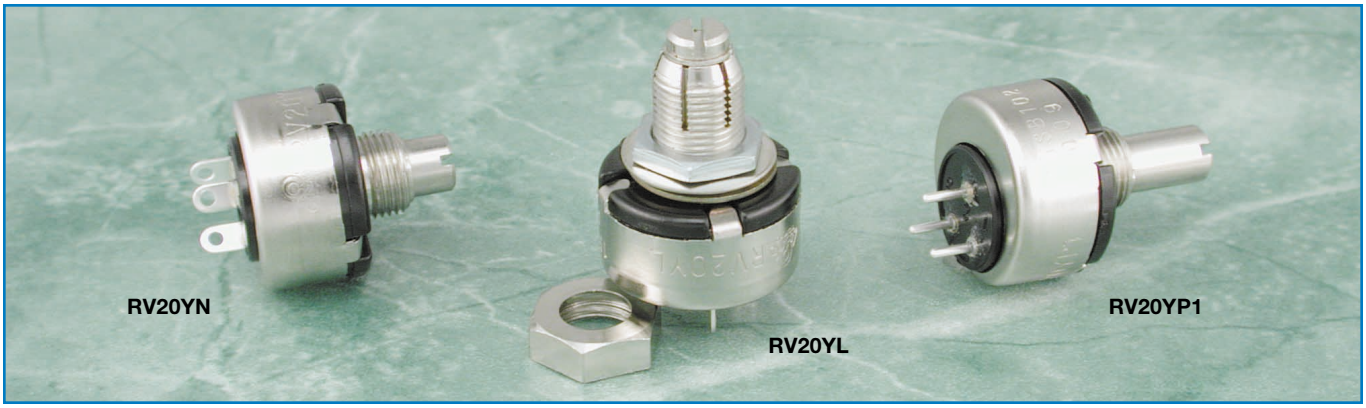
RV20 Series

TOCOS® PANEL CONTROLS

20mm Diameter, Single-Turn, Carbon Industrial Panel Controls



Features

■ 20mm diameter, single-turn industrial panel controls ■ Carbon film element ■ Single unit, single shaft
■ Linear or audio tapers ■ Metal shaft and bushing ■ Optional shaft lock models available
■ 6mm diameter metal shafts in slot, flat or round end styles ■ Standard 10mm, 15mm or 20mm shaft length
■ Panel or PC board mounting styles ■ Rear exit lug or pin terminals ■ Wide standard resistance range

Specifications

Electrical

Standard Resistance Range . . . . . B = 100Ω to 2MΩ
A,C = 2kΩ 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 . . . . . 250VDC or power rating,
whichever is smaller

Insulation Resistance . . . . . 100MΩ minimum at 500VDC

Dielectric Strength . . . . . 500VAC, 1 minute

Adjustment Travel . . . . . 230° ±10°

Mechanical

Mechanical Travel . . . . . 260° ±10°

Shaft Torque . . . . . 50 to 300 gf•cm (0.693 to 4.159 oz•in)

Stop Strength . . . . . 6 kgf•cm (83.176 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 . . . . . +80°C, 5 hours
without load
$R < 10k\Omega \rightarrow \Delta T/R \leqq \pm 6\%$
$10k\Omega \leqq R < 1M\Omega \rightarrow \Delta T/R \leqq \pm 10\%$
$R \geqq 1M\Omega \rightarrow \Delta T/R \leqq \pm 15\%$

Load Life . . . . . +40°C, 90 minutes on, 30 minutes off,
1,000 hours with rated load
$\Delta T/R \leqq \pm 10\%$

Moisture and Load Life . . . . . +40°C, 90-95%RH,
90 minutes on, 30 minutes off,
500 hours with rated load
$R < 100k\Omega \rightarrow \Delta T/R \leqq -10\% \sim +15\%$
$R \geqq 100k\Omega \rightarrow \Delta T/R \leqq -10\% \sim +20\%$

Soldering Heat Resistance . . . . . 350°C, 3 seconds
$\Delta T/R \leqq \pm 2\%$

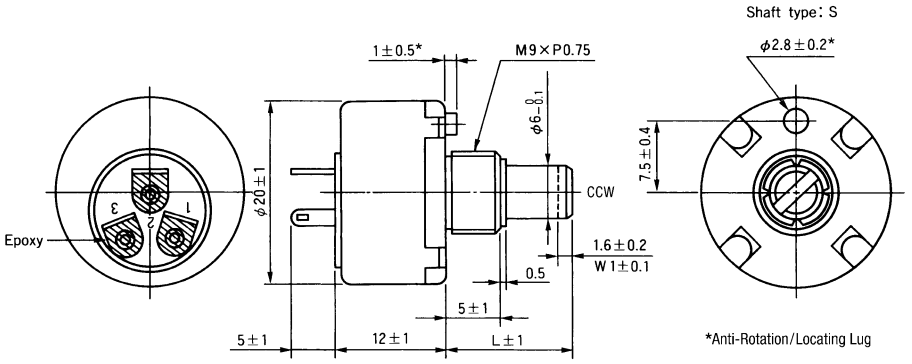
Rotational Life . . . . . 15,000 cycles without load
$\Delta T/R \leqq \pm 7\%$

R = Total Resistance Value; ΔT/R = Total Resistance Change

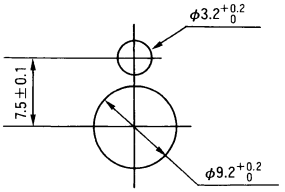
Unit: mm

RV20YN

Panel Mount, Single Unit, Single Shaft
Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern

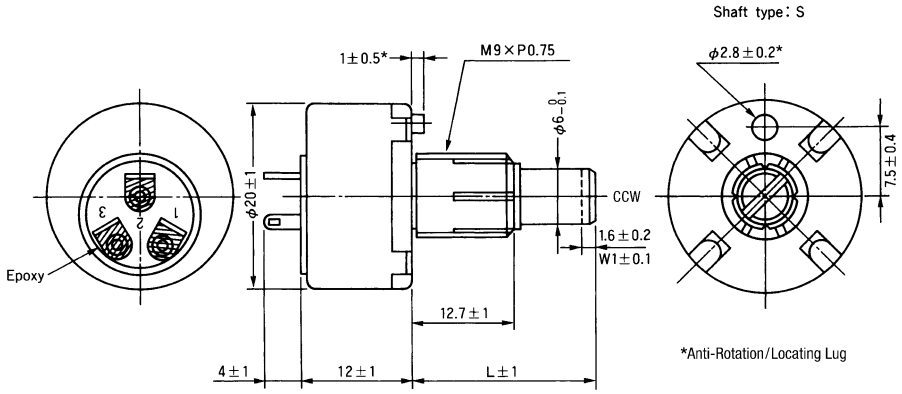


Recommended Panel Mounting Holes

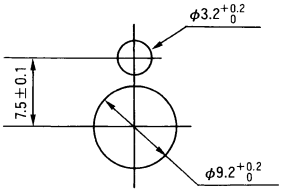


RV20YL

Panel Mount, Single Unit, Single Shaft with Shaft Lock
Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern

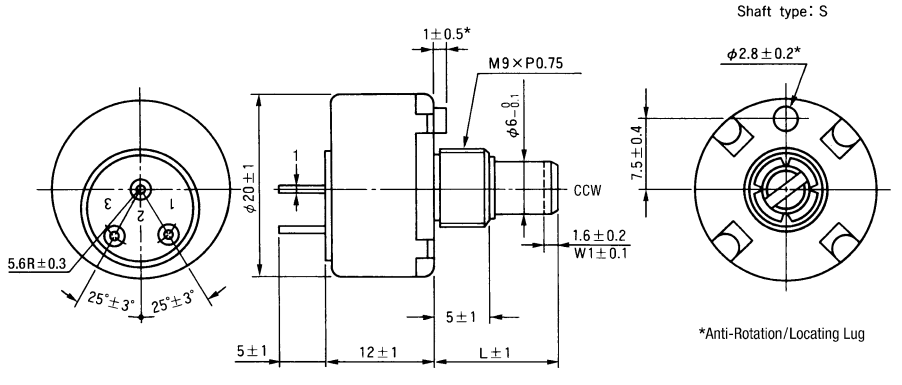


Recommended Panel Mounting Holes

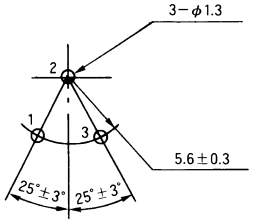


RV20YP1

PCB Mount, Single Unit, Single Shaft
Rear Exit Vertical Mount Pin Terminals, 3-Pin Triangular Pattern



Recommended PCB Mounting Holes



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RV20 Series Part Numbering System

RV 20 Y N 20 S B 103 K

NOTE: FMS = From Mounting Surface

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.*

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

Shaft End Style: S = Slotted.
F = Flatted.
R = Round.

Standard Shaft Length: 10 = 10mm FMS.
15 = 15mm FMS.
20 = 20mm FMS.
Up to 30mm shaft length available (special order).

Style: N = Panel Mount, Single Unit, Single Shaft, Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern.
L = Panel Mount, Single Unit, Single Shaft with Shaft Lock, Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern.
P1 = PCB Mount, Single Unit, Single Shaft, Rear Exit Vertical Mount Pin Terminals, 3-Pin Triangular Pattern.

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

Size: 20 = 20mm Diameter.

TOCOS Series Name: RV = Carbon Film 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	Resistance (Ω)	Code
100	101	1,000	102	10,000	103	100,000	104	1,000,000	105
200	201	2,000	202	20,000	203	200,000	204	2,000,000	205
500	501	5,000	502	50,000	503	500,000	504		

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.