

Long Life 20mm Diameter, Single-Turn, Carbon Panel Controls



Features

- Long life 20mm diameter, single-turn industrial panel controls
- Carbon film element
- Single unit, single shaft
- Longer rotational life than RVQ20N series, up to 2,000,000 cycles
- Plastic bushing, metal shaft
- 6mm diameter shafts in slot or flat end styles
- Standard 15mm or 20mm shaft length
- Panel mount style
- Right angle ear-lug terminals
- Linear taper
- Independent linearity, $\pm 5\%$ max.

Specifications

Electrical

Standard Resistance Range	3k Ω , 5k Ω , 10k Ω , 20k Ω , 30k Ω
Resistance Tolerance	$\pm 20\%$ standard
End Resistance	3 Ω max.
Resistance Taper	B = linear
Independent Linearity	$\pm 5\%$ max.
Peak Noise (C.R.V.)	2% max.
Power Rating	0.5 watt at +40°C, 0 watt at +80°C
Maximum Input Voltage	250VDC or power rating, whichever is smaller
Insulation Resistance	100M Ω minimum at 500VDC
Dielectric Strength	500VAC, 1 minute
Adjustment Travel	220° $\pm$ 10°

Mechanical

Mechanical Travel	240° $\pm$ 10°
Shaft Torque	50 gf•cm (0.693 oz•in) max.
Stop Strength	9 kgf•cm (124.76 oz•in) min.
Shaft Strength (push)	29.4 N (3 kgf) min.
Shaft Strength (tensile)	29.4 N (3 kgf) min.
Shaft End Play	$\pm 0.4 \times$ (shaft length/30) mm max.
Mounting Nut Torque	5 kgf•cm (69.31 oz•in) min.
Solderability	235°C, 5 seconds
Marking	Model type, taper, resistance code, shaft type, terminal identification, date code

Environmental

Temperature Range	-10°C to +80°C
Temperature Characteristics	+80°C, 5 hours $\Delta T/R \leq \pm 10\%$
Temperature Cycle	-10°C, +80°C, 30 minutes each, 5 cycles $\Delta T/R \leq \pm 10\%$
Load Life	+40°C, 0.5 watt, 1,000 hours $\Delta T/R \leq \pm 10\%$
Moisture and Load Life	+40°C, 90-95% RH, 0.5 watt, 500 hours $\Delta T/R \leq \pm 10\%$
Vibration	10-55Hz, 1.5mm amplitude, 3 directions, 2 hours each $\Delta T/R \leq \pm 2.5\%$
Soldering Heat Resistance	350°C $\pm$ 5°C, 3 seconds $\Delta T/R \leq \pm 2\%$
Rotational Life	2,000,000 cycles without load $\Delta T/R \leq \pm 10\%$

$\Delta T/R$ = Total Resistance Change

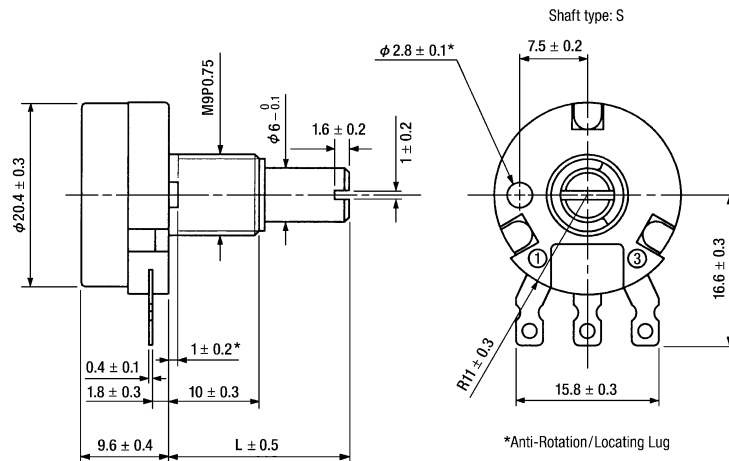
Note: A long life panel control should only be used in a circuit as a potentiometer (3-terminal voltage divider).

Dimensions

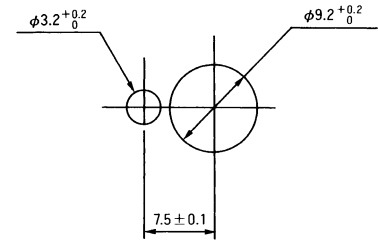
Unit: mm

RVQ20N2

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



Recommended Panel Mounting Holes



Part Numbering System

RV Q 20 N2 15 S B 502 M

NOTE: FMS = From Mounting Surface

Resistance Tolerance: M = $\pm 20\%$ (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., 500 = 50Ω; 501 = 500Ω; 502 = 5,000Ω; 503 = 50,000Ω). See table for standard resistance values.

Resistance Taper: B = Linear.

Shaft End Style: **S** = Slotted (standard for 15mm or 20mm shaft length).
F = Flatted (special order for 20mm shaft length only).

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

Style: N2 = Panel Mount, Single Unit, Single Shaft, Right Angle Ear-Lug Terminals.

Size: 20 = 20mm Diameter.

Rotational Life: Q = Long Life, 2,000,000 cycles.

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
3,000	302	10,000	103
5,000	502	20,000	203
		30,000	303

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.