



**THE DATASHEET OF  
535B1502JC**





# 7/8" (22.2 mm) Multi Turn Wirewound Potentiometer - 533: 3 Turns / 534: 10 Turns / 535: 5 Turns



### DESIGN SUPPORT TOOLS

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### FEATURES

- Bushing and servo mount designs available
- Linearity  $\pm 0.25\%$ , down to  $0.05\%$  on request
- Special resistance tolerances to  $1\%$
- Rear shaft extensions and support bearing
- Metric shaft available
- Dual gang configuration and concentric shafts
- High torque, center tap, slipping clutch on request
- Special markings and front shaft extensions
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS  
COMPLIANT

QUICK REFERENCE DATA	
Sensor type	ROTATIONAL, multi turn wirewound
Output type	Output by turrets
Market appliance	Industrial
Dimensions	7/8" (22.2 mm)

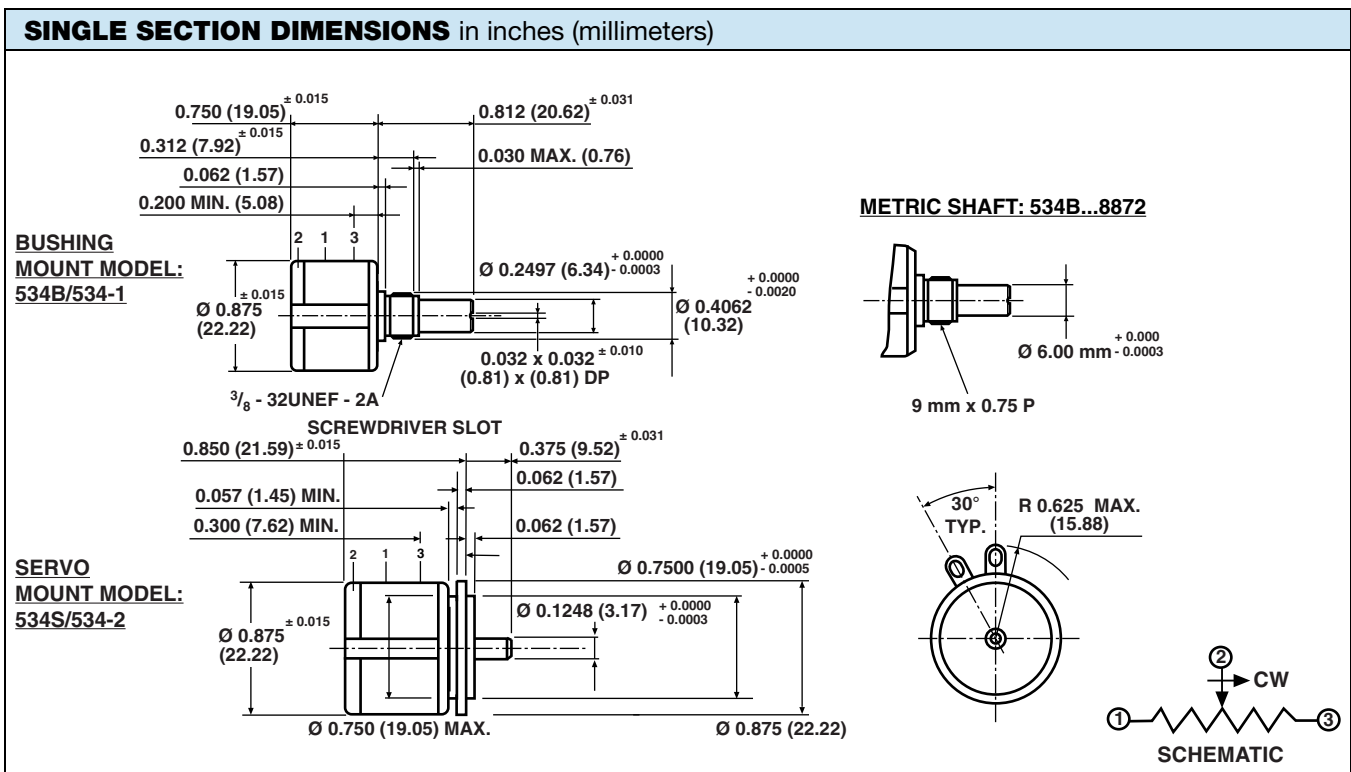
ELECTRICAL SPECIFICATIONS			
PARAMETER	MODEL 533	MODEL 534	MODEL 535
Resistance range - standard values	50 $\Omega$ to 20 k $\Omega$	100 $\Omega$ to 100 k $\Omega$	50 $\Omega$ to 50 k $\Omega$
Capability range	5 $\Omega$ to 60 k $\Omega$	10 $\Omega$ to 200 k $\Omega$	5 $\Omega$ to 100 k $\Omega$
Standard tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Linearity (independent)	$\pm 0.25\%$	$\pm 0.25\%$	$\pm 0.25\%$
Noise	100 $\Omega$ ENR	100 $\Omega$ ENR	100 $\Omega$ ENR
Rotation (electrical and mechanical)	1080° $^{+10^{\circ}}$ $^{-0^{\circ}}$	3600° $^{+10^{\circ}}$ $^{-0^{\circ}}$	1800° $^{+10^{\circ}}$ $^{-0^{\circ}}$
Power rating (at 70 °C)	1.0 W	2.0 W	1.5 W
Insulation resistance	1000 M $\Omega$ minimum 500 V <sub>DC</sub>		
Dielectric strength	1000 V <sub>RMS</sub> minimum 60 Hz		
Absolute minimum resistance	Not to exceed linearity x total resistance or 1 $\Omega$ , whichever is greater		
Temperature coefficient	20 ppm/°C (standard values, wire only)		
End voltage	0.25 % of total applied voltage, maximum		
Phasing	CCW end points - section 2 phased to section 1 within $\pm 2^{\circ}$		
Taps	Center tap only		

MARKING	
Unit identification	Manufacturer's name and model number, resistance value and tolerance, linearity specification date code and terminal identification. Example of a marking for a standard part: 534-11103

RESISTANCE VALUES	
533 ( $\Omega$ )	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K
534 ( $\Omega$ )	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K
535 ( $\Omega$ )	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K

ORDERING INFORMATION															
5	3	4	B	2	1	0	3	2	0	3	J	C	4	7	0
MODEL	STYLE	GANGS	OHMIC VALUE GANGS N° 1		OHMIC VALUE GANGS N° 2		TOLERANCE ON OHMIC VALUE		LINEARITY		SPECIAL REQUEST				
533 534 535	B: bushing S: servo	1 2	470 = 47 Ω 222 = 2.200 Ω 103 = 10 kΩ For ohmic value range see electrical specification		470 = 47 Ω 222 = 2.200 Ω 103 = 10 kΩ For ohmic value range see electrical specification		J = ± 5 % F = ± 1 %		C = ± 0.25 % L = ± 0.2 %		Special code xxxx				

PART NUMBER DESCRIPTION (for information only)					
534-	1	2	103	203	xxxx
MODEL	STYLE	GANGS	OHMIC VALUE GANGS N° 1	OHMIC VALUE GANGS N° 2	SPECIAL
	B: 1 S: 2				

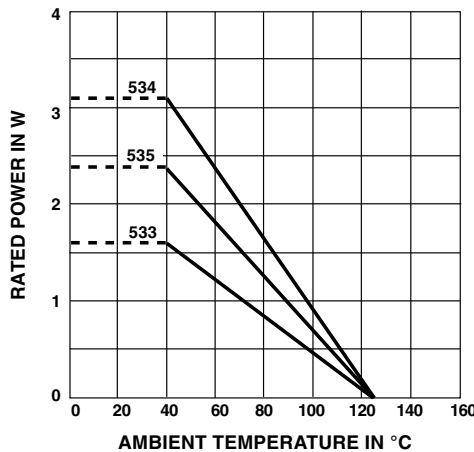


Mounting hardware, washer and panel nut, nickel plated



MECHANICAL SPECIFICATIONS		
PARAMETER		
Bearing type	Bushing: sleeve bearing	Servo: ball bearing
Torque (maximums): starting Section 1 Section 2	<b>534</b> 0.5 oz.-in (36 g-cm) 0.9 oz.-in (65 g-cm)	<b>533/535</b> 0.7 oz.-in (50 g-cm) 1.1 oz.-in (79 g-cm)
Torque (maximums): running Section 1 Section 2	<b>534</b> 0.4 oz.-in (28.80 g-cm) 0.7 oz.-in (50.40 g-cm)	<b>533/535</b> 0.6 oz.-in (43.20 g-cm) 0.9 oz.-in (64.8 g-cm)
Weight (maximums) Section 1 Section 2	0.75 oz. (21.26 g) 1.25 oz. (35.44 g)	
Stop strength	75 oz.-in (static) (5.4 kg-cm)	
Ganging	2 sections maximum	

**POWER RATING CHART**



ENVIRONMENTAL SPECIFICATIONS	
Vibration	15 g thru 2000 Hz
Shock	50 g
Rotational life (shaft revolution)	
533	300 000
534	1 000 000
534 (servo)	> 1 000 000
535	500 000
Load life	900 h
Temperature range	-55 °C to +125 °C

**Note**

- Nothing stated herein shall be construed as a guarantee of quality or durability

RESISTANCE ELEMENT DATA														
RESISTANCE VALUE (Ω)			RESOLUTION (%)			OHMS PER TURN			MAXIMUM CURRENT AT 70 °C AMBIENT (mA)			MAXIMUM VOLTAGE ACROSS COIL (V)		
533	534	535	533	534	535	533	534	535	533	534	535	533	534	535
50	-	50	0.149	-	0.120	0.0746	-	0.0603	141.0	-	173.0	7.07	-	8.66
100	100	100	0.111	0.060	0.075	0.1114	0.0603	0.0746	100.0	141.0	122.0	10.0	14.1	12.2
200	200	200	0.097	0.037	0.061	0.1954	0.0746	0.1220	70.7	100.0	86.6	14.1	20.0	17.3
500	500	500	0.069	0.031	0.049	0.3424	0.1520	0.2459	44.7	63.2	54.7	22.4	31.6	27.4
1K	1K	1K	0.063	0.025	0.041	0.6331	0.2459	0.4113	31.6	44.7	38.7	31.6	44.7	38.7
2K	2K	2K	0.041	0.021	0.031	0.8206	0.4113	0.6331	22.4	31.6	27.4	44.7	63.2	54.8
5K	5K	5K	0.044	0.016	0.034	2.2330	0.8206	1.7230	14.1	20.0	17.3	70.7	100.0	86.6
10K	10K	10K	0.034	0.017	0.030	3.4510	1.7230	3.0160	10.0	14.1	12.2	100.0	141.0	122.0
20K	20K	20K	0.031	0.015	0.020	6.1790	3.0160	3.9910	7.07	10.0	8.66	141.0	200.0	173.0
-	50K	50K	-	0.009	0.015	-	4.6690	7.4560	-	6.32	5.47	-	316.0	274.0
-	100K	-	-	0.007	-	-	7.4560	-	-	4.47	-	-	447.0	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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