

**Series 50**  
**1 1/8 in. Diameter, 4 Watt**  
**Wirewound Potentiometers**



## Description

### Series 50

1 1/8 in. dia., 4 watt, wirewound potentiometers

## Also Available...

### Series 48

2 watt power rating version of the 48 series

### Series A48

Pick-A-Shaft version of the 48 series

### RA20

Military version of the 48 series meeting strict military standard MIL-R-19

## Features

- *Economical*
- *Versatile - various mounts, terminal & shaft configurations*
- *High torque available*
- *Shaft & mounting seals available*
- *Multiple gangs available*
- *Concentric shafts available*
- *Printed circuit terminals*
- *High voltage standoffs*
- *Non-metallic shaft*
- *Backlash construction*

## Series 50 Electrical Specifications

### *Resistance Range*

1 ohms to 50Kohm. Linear taper standard - log, reverse log available

### *Resistance Tolerance*

+/-10% standard; +/-5% and +/-1% available

### *Power Rating*

Single section: 4Watts @ 40°C; 0 @ 135°C

Additional sections: 3Watts @40°C; 0 @ 135°C

### *Watts/Degree*

.014 watt per degree of effective rotation maximum

### *Effective Rotation*

280° +/-5° without switch; less than 280°, special;

260° +/- with switch

### *Electrical Rotation*

300° +/-5° with or without switch

### *Tapers*

90 ohms per degree maximum

### *Independent Linearity*

+/-5% standard; +/-1 available

### *End Resistance*

1 to 50 ohms - 0.3 ohms; 51 to 100 ohms - 0.5 ohms.  
Over 100 ohms - 0.2% of total or 1 ohm, whichever is greater.

### *Dielectric Withstanding Voltage*

1000 Vac for 60 seconds @ ATM.

450 Vac for 60 seconds @ 3.4 in. Hg.

### *Working Voltage (Max.)*

350 Volts maximum

### *Switches*

S.P.S.T., S.P.D.T., D.P.S.T. rotary

### *Location of tap and Tolerance*

One available any position of effective rotation; tap tolerance +/- of total resistance. Specify electrical or angular position and limits.

### *Insulation Resistance*

100 Megohms minimum

### *Operating Temperature Range*

-55 °C to 105 °C

## Series 50 Mechanical Specifications

### Mechanical Rotation

300° +/-5° with or without switch; 360° available

### Stop Torque

8 lbs. in. maximum

### Torque Range

0.5 to 6 oz in.; 15 oz. in. increase for switch actuation.  
Locking type bushing: 25 oz. in. minimum with jam nut tightened to 10 lb. in.

### Maximum Number of Sections

Two recommended, three available.

### Weight

Single .077 lb. without switch.  
Additional section 0.041 lb.; 0.87 lb with switch.

### Hardware

- Hex mounting nut, 3/8 in. (9.53mm) x 32 thread  
1/2 in.(12.7mm) across flats, 3/32 in (2.38mm) thick.
- Internal tooth lockwasher 11/16 in. (17.46mm) O.D.  
x 0.22 in (0.56mm) thick.
- Jam hex nut 1/2 in. (12.7mm) across flats, 7/32 in.  
(5.56mm) thick, supplied on locking type bushing.

### Marking

Will appear on rear surface without switch. On periphery when switch is used. Unless otherwise specified, marking will consist of

- Customer part number or Clarostat part number
- EIA source and date code

### Switch Options

Switch Type	Switch	Variations	Term Position	Torque Oz. In.
B-10	SPST	1A, 250V; 3A125V (ac or dc)	1-2	12
B-11	SPST	1A, 250V, 3A125V with bussing terminal (ac or dc)	1-2-4	12
B-13	SPST	15A. 10Vdc	1-4	16
B-20	DPST	1A, 250V, 3A125V (ac or dc)	1-2-3-4	16
B-21	DP	1 pole on, 1 pole off 1A, 250V, 3A125V	1-2-3-4	16
B-23	DPST	15A. 10Vdc	1-2-3-4	16
B-24	DPST	1A, 250V, 3A125V (ac or dc) Reverse Action	1-2-3-4	16
B-25	DPST	250ma, 24Vdc (dry circuit)	1-2-3-4	12
B-30	SPDT	1A, 250V; 3A125V (ac or dc)	2-3-4	16

Figure 1. Power Derating Graph for Series 50

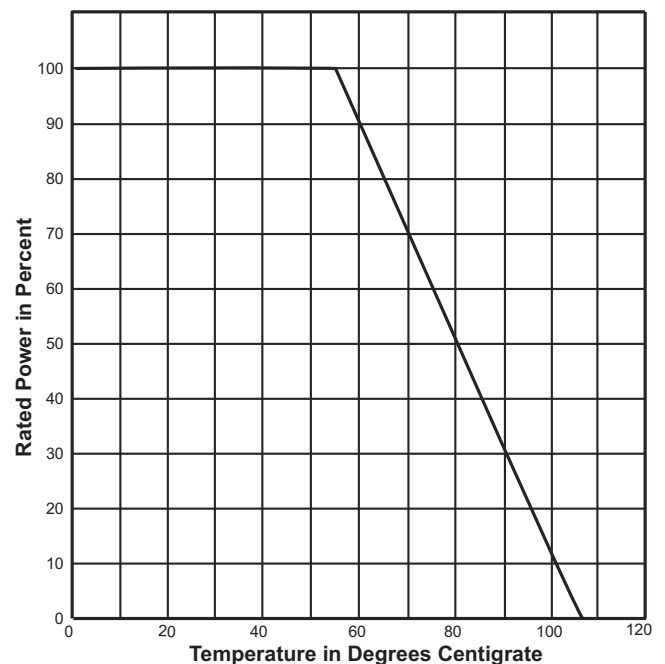


Figure 2. Resolution Graph

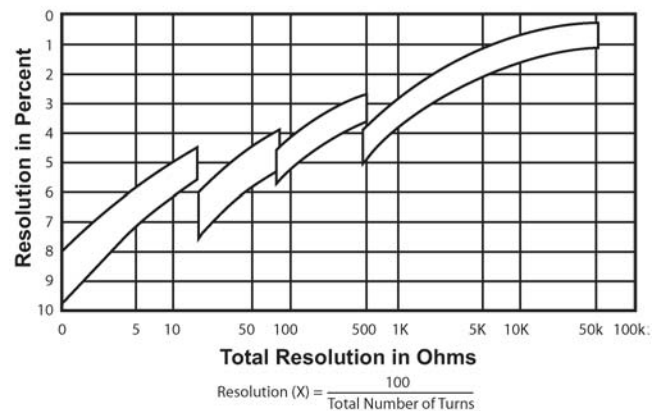
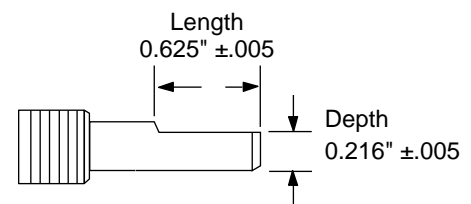
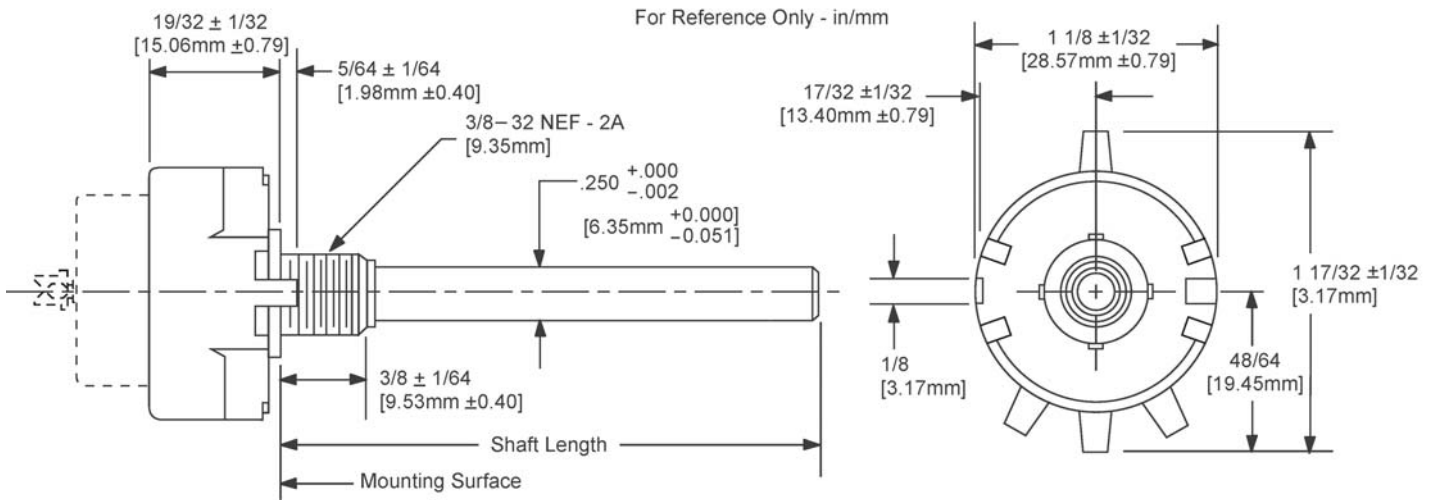


Figure 3. Flatted Shaft Option

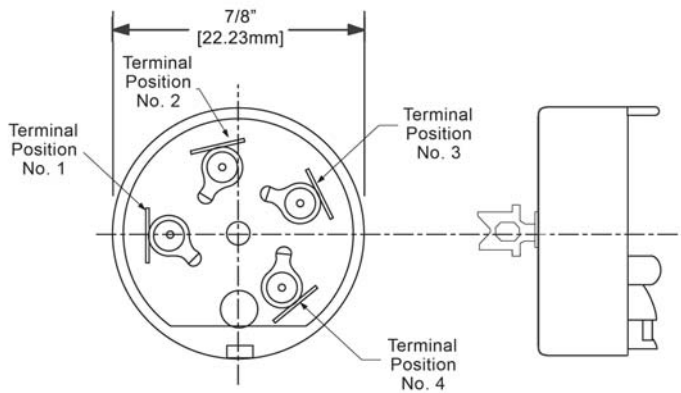


#### Notes:

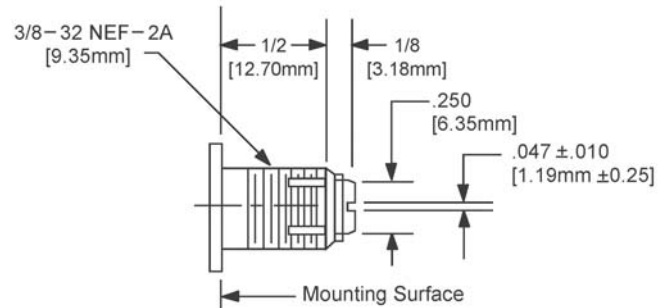
- Flatted Shaft is not available with Locking or Shaft Seal Options
- Flat will extend to within 0.031 (0.79) of mounting bushing where shaft length will not permit standard flat.



**Switch Option**



**Locking Bushing Option**



**Series 50 - How to Order**

Part Number Example: **WW50-N-B10-S040-503A**

WW50	N	A	S	XXX	XXX	A
Series		Switch	Shaft Style	Shaft Length	Resistance	Shaft Style
		A = None B10 = SPST 1A, 250V B13 = SPST 15A, 10V B20 = DPST 1A, 250V B21 = DP B23 = DPST 15A, 10V B30 = SPDT 1A, 250V	N = Standard S = Slotted F = Flatted P = Plain Round X = Custom	032 = 1/2" 040 = 5/8" 056 = 7/8" 100 = 1" 108 = 1 1/8" 132 = 1 1/2" 148 = 1 3/4" 200 = 2"	1-50K ohms	A = Linear C = Log E = Rev. Log
<b>Shaft &amp; Bushing</b>						
N = Standard						
L = Locking						
S = Panel and shaft seal (Standard)						
T = Panel and shaft seal (Locking)						



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