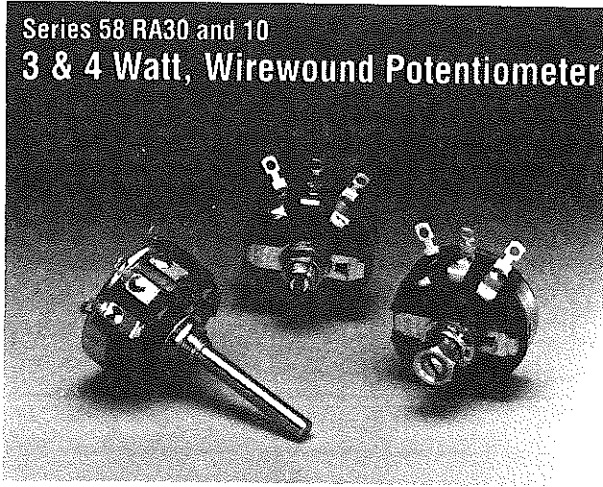


Series 58 RA30 and 10  
**3 & 4 Watt, Wirewound Potentiometer**



**Features**

- *Shaft and mounting seals*
- *High torque requirements*
- *Multiple gang controls*
- *Stainless steel shafts*
- *Wide range of resistance values and tapers.*
- *Concentric shafts*
- *Various shaft and bushing configurations.*
- *L and T pads*

**Description**

**Series 58/58C:**

3 watt power rating, the Series 58 is an economical commercial potentiometer. The Series 58C is a 4 watt industrial grade potentiometer.

**Series 58M/RA30:**

4 watt power rating, the Series 58M/ RA30 is the military version of the 58/58C.

**Series A58:**

The Series A58 is the pick-a-shaft version of the 58/58C.

**Series 10:**

4 watt power rating, the Series 10 control is for critical applications requiring higher resistance ranges.

**Series A10:**

The Series A10 is the pick-a-shaft version of the 10 control.

**Series 58, 58C, A58 Electrical Specifications**

**Resistance Range**

1Ω to 75KΩ, standard

**Operating Temperature Range**

-55°C to 105°C

**Resistance Tolerance**

±10%, standard; ±5 % for 58C;  
 ±1%, special\*.

**Power Rating (Watts)**

Series 58 - single section:

3 @ 40°C; 0 @ 105°C.

Each additional section:

2.25 @ 40°C; 0 @ 105°C.

Series 58C - single section:

4 @ 40°C; 0 @ 105°C.

Each additional section:

3 @ 40°C; 0 @ 105°C.

*Continued, next page*

**Series 58M/RA30 Electrical Specifications**

**Resistance Range**

3Ω to 25,000Ω - A Taper  
 10 Ω to 7500Ω - C and F Taper

**Operating Temperature Range**

-55°C to 105°C

**Resistance Tolerance**

±10%, standard; ±1% special\*.

**Power Rating (Watts)**

Single section:

4 @ 40°C; 0 @ 105°C.

Each additional section:

3 @ 40°C; 0 @ 105°C.

**Watts/Degree**

.014 watt per degree  
 of effective rotation maximum

*Continued, next page*

**Series 10, A10 Electrical Specifications**

**Resistance Range**

1Ω to 100KΩ

**Operating Temperature Range**

-55°C to 105°C

**Resistance Tolerance**

±10%, standard; ±1%, special\*.

**Power Rating (Watts)**

Single section: 4 @ 40°C;

0 @ 105°C. Each additional

section: 3 @ 40°C; 0 @ 105°C.

**Watts/Degree**

.014 watt per degree of effective  
 rotation maximum.

**Effective Rotation**

280° ±5° without switch

240° ±5° with switch

*Continued, next page*

*Series 58, 58C, A58, continued*

*Watts/Degree*

Series 58 - .01 watt per degree of effective rotation maximum.  
Series 58C - .014 watt per degree of effective rotation maximum.

*Effective Rotation*

280° ±5°, standard  
240° ±5° with switch

*Electrical Rotation*

300° ±5° with and without switch

*Tapers*

260Ω per degree maximum

*Independent Linearity*

±5%, standard;  
±1% for 58C and specials\*

*End Resistance\*\**

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

*Dielectric Withstanding Voltage*

1000 Vac for 60 seconds @ ATM.  
450 Vac for 60 seconds  
@ 3.4 in. Hg.

*Working Voltage*

350 Vdc maximum

*Switch Characteristics*

S.P.S.T., S.P.D.T., D.P.S.T.,  
See Figure 4, page 93 for switch  
characteristics.

*Location of Tap and Tolerance*

Three available; location as  
specified. ±10% of total resistance.  
Specify electrical or angular position  
and limits.

*Insulation Resistance*

100 megohms minimum

\*Dependent on design parameters.

\*\*End Resistance: When mechanical and effective rotations are equal the end resistance value will be double.

*Series 58M/RA30 continued*

*Effective Rotation*

280° ±5°, standard;  
240° ±5° with switch.

*Electrical Rotation*

300° ±5° with and without switch

*Tapers*

260Ω per degree maximum

*Independent Linearity*

±5%, standard; ±1%, special\*.

*End Resistance\*\**

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

*Dielectric Withstanding Voltage*

1000 Vac for 60 seconds @ ATM.  
450 Vac for 60 seconds  
@ 3.4 in. Hg.

*Working Voltage*

350 Vdc maximum

*Switch Characteristics*

S.P.S.T., S.P.D.T., D.P.S.T.,  
See Figure 4, page 93 for switch  
characteristics.

*Location of Tap and Tolerance*

Note: No tap on 58M/RA30.

*Insulation Resistance*

100 megohms minimum

*Series 10, A10 continued*

*Electrical Rotation*

300° ±5° with and without switch

*Tapers*

350Ω per degree maximum

*Independent Linearity*

±5%, standard; ±1%, special\*

*End Resistance\*\**

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

*Dielectric Withstanding Voltage*

1000 Vac for 60 seconds @ ATM.  
450 Vac for 60 seconds @ 3.4 in. Hg.

*Working Voltage*

350 Vdc maximum

*Switch Characteristics*

S.P.S.T., S.P.D.T., D.P.S.T.,  
See Figure 4, page 93 for switch  
characteristics.

*Location of Tap and Tolerance*

One available. Tap tolerance ±10%  
of resistance. Specify electrical or  
angular position and limits.

*Insulation Resistance*

100 Megohms minimum

**Series 10, A10  
Mechanical Specifications**

*Mechanical Rotation*

300° ±5° with and without switch,  
standard. 360° special, but effective  
rotation to be 280° maximum.

*Stop Torque*

8 in. lbs. maximum

Continued, next page

**Series 58, 58C, 58M/RA30, A58  
Mechanical Specifications**

300° ±5° with and without switch,  
standard. 360° special, but effective  
rotation to be 280° maximum.

8 lbs. in. maximum

Continued, next page

	<i>Series 10, A10 continued</i>	<i>Series 58, 58C, 58M/RA30, A58 continued</i>
<i>Torque Range</i>	Each section 0.5 to 6 oz. in.; 15 oz. in. increase for switch actuation.	Each section 0.5 to 6 oz. in.; 15 oz. in. increase for switch actuation.
<i>Maximum Number of Sections</i>	Three	Three
<i>Weight</i>	Single, .126 lb. without switch. Additional section, .075 lb.; .136 lb. with switch.	Single, .118 lb. without switch. Additional section, .075 lb.; .128 lb. with switch.
<i>Hardware</i>	Must be ordered separately. (a) Hex mounting nut: 3/8 in. (9.35mm) x 32 thd., 1/2 in. (12.7mm) across flats, 3/32 in. (2.38mm) thick. (b) Internal tooth lockwasher: 11/16 in. (17.46mm) O.D. x .022 in. (17.46mm) thick, (c) Jam hex nut: 1/2 in. (12.7mm) across flats, 7/32 in. (5.56mm) thick, supplied on locking type bushing.	Must be ordered separately. (a) Hex mounting nut: 3/8 in. (9.35mm) x 32 thd., 1/2 in. (12.7mm) across flats, 3/32 in. (2.38mm) thick. (b) Internal tooth lockwasher: 11/16 in. (17.46mm) O.D. x .022 in. (17.46mm) thick, (c) Jam hex nut: 1/2 in. (12.7mm) across flats, 7/32 in. (5.56mm) thick, supplied on locking type bushing.
<i>Marking</i>	Will appear on rear surface without switch. On periphery when switch is used. Unless otherwise specified, marking will consist of: (a) Customer part number or Clarostat part number (b) EIA source and date code.	Will appear on rear surface without switch. On periphery when switch is used. Unless otherwise specified, marking will consist of (a) Customer part number or Clarostat part number (b) EIA Source and date code.

**Figure 1**  
**Series 58/RA30 Total Resolution in Ohms**

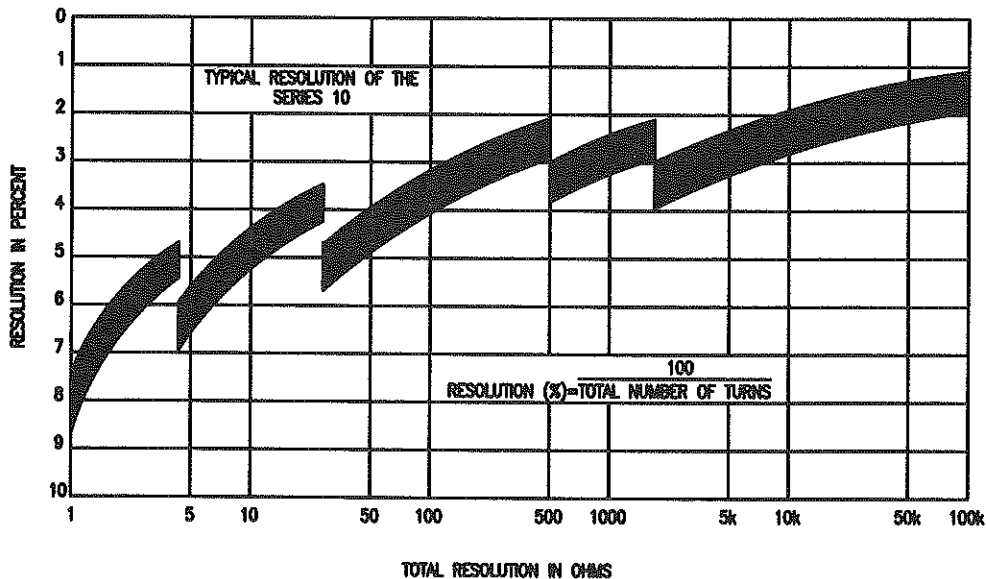


Figure 2

### Power Derating Graph

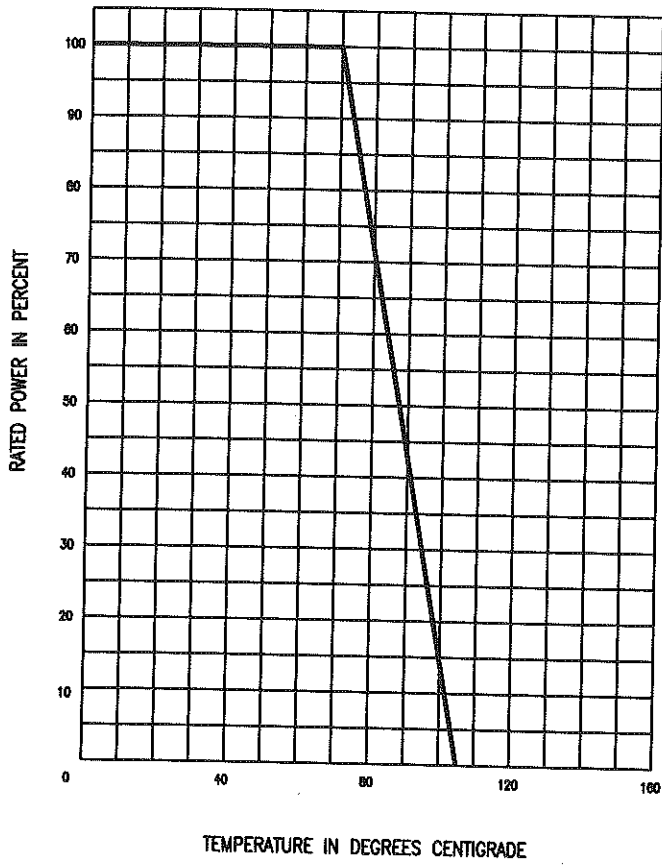


Figure 3

### Series 10 Total Resolution in Ohms

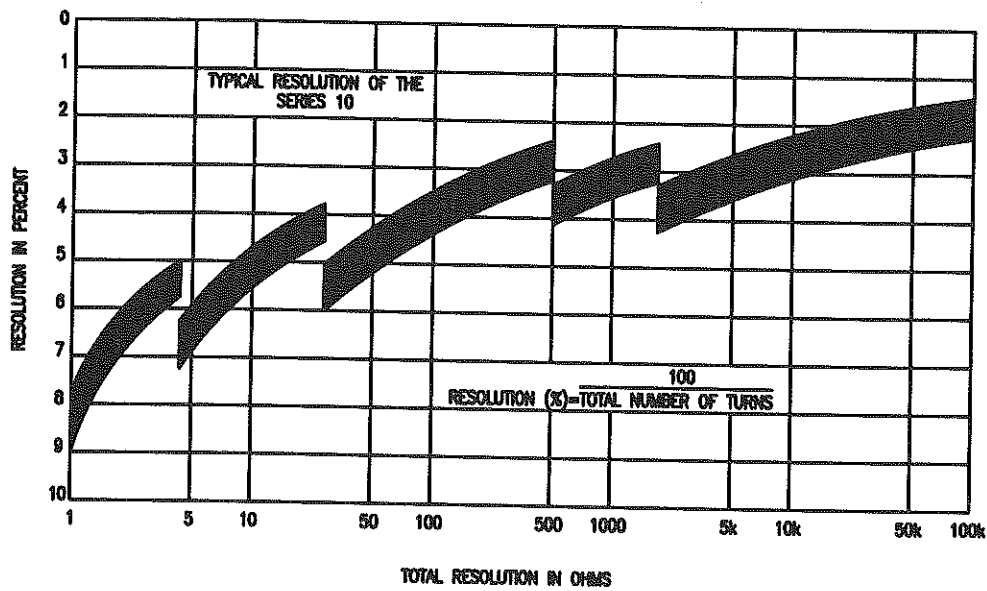
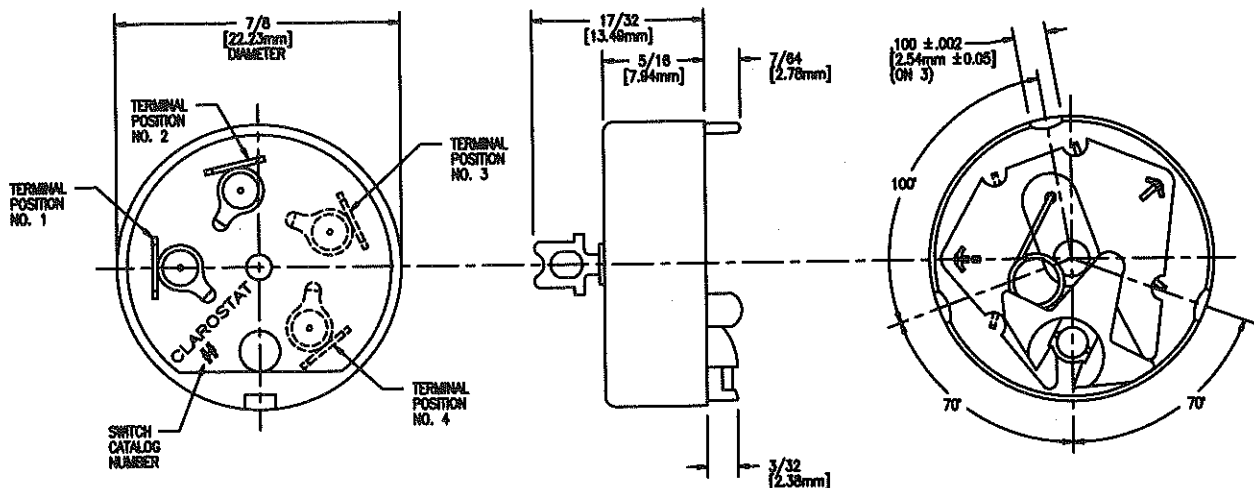


Figure 4  
AE Switch Dimensions



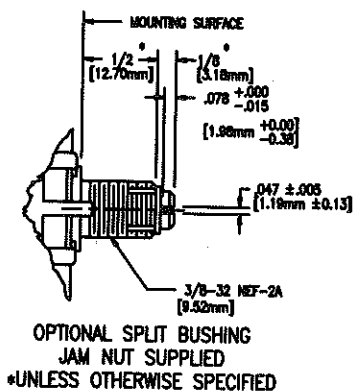
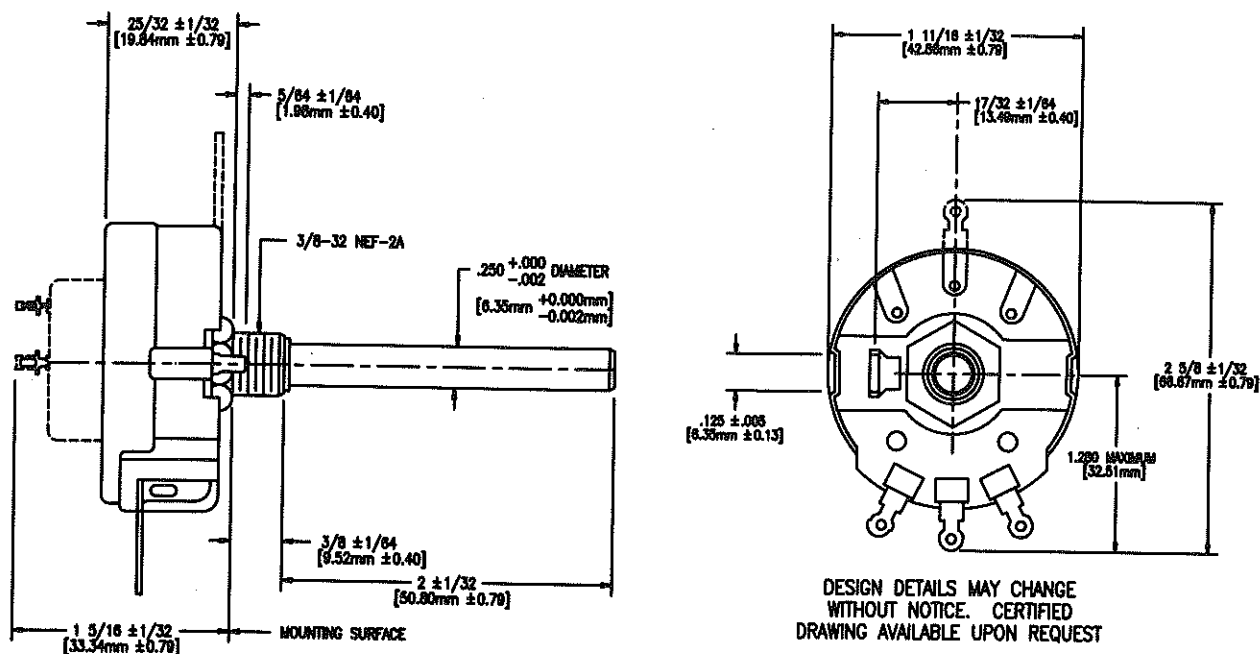
Type No.	Switch	Variations	Terminal Positions	Max. Operating Torque-Oz.In.
AE-10	S.P.S.T.	1a, 250v.; 3a, 125v. (ac or dc)	1-2	12
AE-11	S.P.S.T.	1a, 250v.; 3a, 125v. with bussing terminal (ac or dc)	1-2-4	12
AE-13	S.P.S.T.	15a, 10v. (dc only)	1-4	16
*AE-20	D.P.S.T.	1a, 250v.; 3a, 125v. (ac or dc)	1-2-3-4	16
AE-21	D.P.	1 pole on, 1 pole off-1a, 250v.; 3a, 125v. (ac or dc)	1-2-3-4	16
AE-23	D.P.S.T.	15a, 10v. (dc only)	1-2-3-4	16
*AE-24	D.P.S.T.	1a, 250v.; 3a, 125v. (ac or dc) Reverse action	1-2-3-4	16
AE-25	D.P.S.T.	250 ma. 24 v.d.c. (dry circuit)	1-2-3-4	12
AE-30	S.P.D.T.	1a, 250v.; 3a, 125v. (ac or dc)	2-3-4	16

\*May be employed as a single pole, single throw, two circuit switch. To designate this application add an "A" to the end of switch type.

Example: AE-20A.

Figure 5

Series 58 Control Dimensions



Series 58C Standard Resistance Values

Series 58C, 4 Watt, Industrial Grade Stock Values

Fabricated in accordance with MIL-R-19 where applicable.

1	20	75	740	5000	40K
2	25	100	1000	7500	50K
4	20	200	1500	10K	
6	40	300	2000	15K	
10	50	400	2500	20K	
15*	60*	500	3000	30K	

\*Made to order

Series 58C How To Order

Catalog Number	Description
58C1	2 in. (50.8mm) round shaft FMS; 3/8 in. (9.53mm) long brushing with 3/8-32 NEF-2A thread.
58C2	5/8 in. (15.88mm) screwdriver slotted shaft FMS; with a 1/2 in. (12.7mm) long split locking bushing.

Example: **58C1-40K**

**58C1**

Series Catalog Number

58C1 = 2 in. (50.8mm) round shaft FMS; 3/8 in. (9.53mm) long brushing with 3/8-32-NEF-2A thread.

58C2 = 5/8 in. (15.88mm) screwdriver slotted shaft FMS; with a 1/2 in. (12.7mm) long split locking bushing.

**40K**

Resistance Value (Ohms)

**Series 58M/RA30 Standard Resistance Values**

**Series 58M/RA30, Available Styles**  
 RA30NASA, RA30NASD, RA30LASB

**Series 58M/RA30, 4 Watt, Military Grade Stock Values (Ohms, Tolerances and Taper)**

30A* <sup>Δ</sup>	153A <sup>Δ</sup>	350A*
60A* <sup>Δ</sup>	200A <sup>†</sup>	351A <sup>Δ</sup>
80A*	201A	352A
100A <sup>Δ†</sup>	202A	500A <sup>Δ</sup>
101A <sup>Δ</sup>	203A	501A <sup>Δ</sup>
102A <sup>Δ</sup>	250A	502A
103A	251A	750A
150A*	252A <sup>Δ</sup>	751A* <sup>†</sup>
151A	253A	752A
152A		

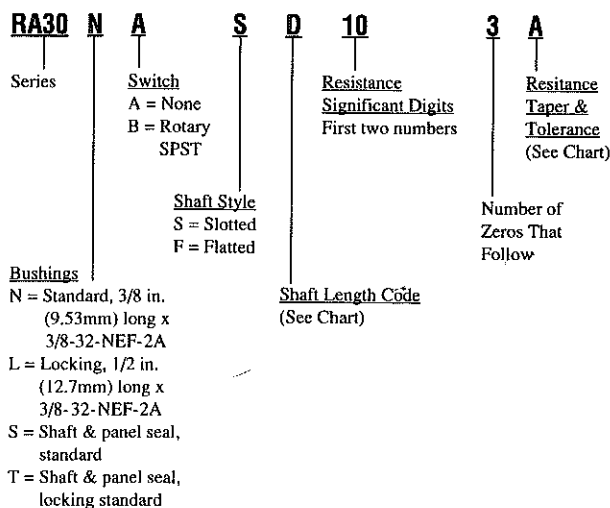
\*In RA30NASD style, made to order only.

<sup>Δ</sup>In RA30NASA style, made to order only.

<sup>†</sup>In RA30LASB style, made to order only.

**Series 58M/RA30 How To Order**

Example: **RA30-N-A-S-D-10-3-A**



**Shaft Length From Mounting Surface Chart**

Shaft Codes	Bushings N & S	Bushings L & T
A	1/2	N/A
B	N/A	5/8
D	7/8	7/8
G	1 1/4	1 1/4
K	2 1/2	N/A

N/A = Not Available.

10-3 = Resistance (Ohms)

First two digits are significant and the last one is the number of zeroes that follow.

How To Order continued, next column

How To Order continued

**A = Resistance Characteristics & Tolerance**

Symbol	Taper	Tolerance
A	A(Linear)	±10%
C*	C(CW)	±10%
E*	F(CCW)	±10%

\* 10% resistance at 50% rotation.

Other RA30 types not listed available on extended delivery basis.

**Series 10 and A10 How To Order**

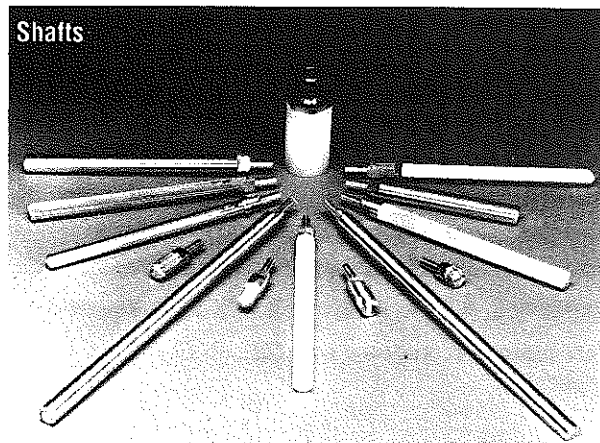
Available on a made to order basis only. Please consult Factory for pricing and delivery.

**Series A58 4 Watt, Pick-A-Shaft, Commercial Grade Potentiometer**

**Description**

The Series A58, pick-a-shaft controls are identical to the Series 58 controls, along with a choice\* of one of 13 shafts, furnished at no extra charge, with each control. If a shaft is not specified, an RS-2 will be supplied. Tolerance ±10%, all values. All controls linear. Items not listed are special; prices and information on request.

\*Choice does not include insulated shaft and bushing coupler; consult Factory for pricing.



Dimensions next page