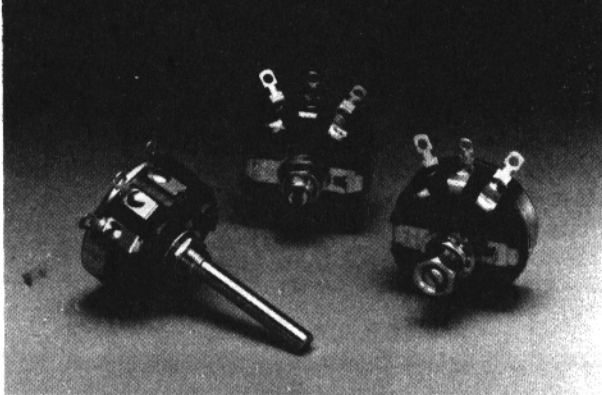


Series 58 RA30 and
3 & 4 Watt, Wirewound Potentiometer



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 75000Ω - 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

Torque Range

Series 10, A10 continued

Each section 0.5 to 6 oz. in.;
15 oz. in. increase for switch
actuation.

Series 58, 58C, 58M/RA30, A58 continued

Each section 0.5 to 6 oz. in.;
15 oz. in. increase for switch
actuation.

**Maximum Number
of Sections**

Three

Three

Weight

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.

Hardware

Must be ordered separately.

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

- (a) Hex mounting nut:
3/8 in. (9.35mm) x 32 thd.,
1/2 in. (12.7mm) across flats,
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- (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.

Marking

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

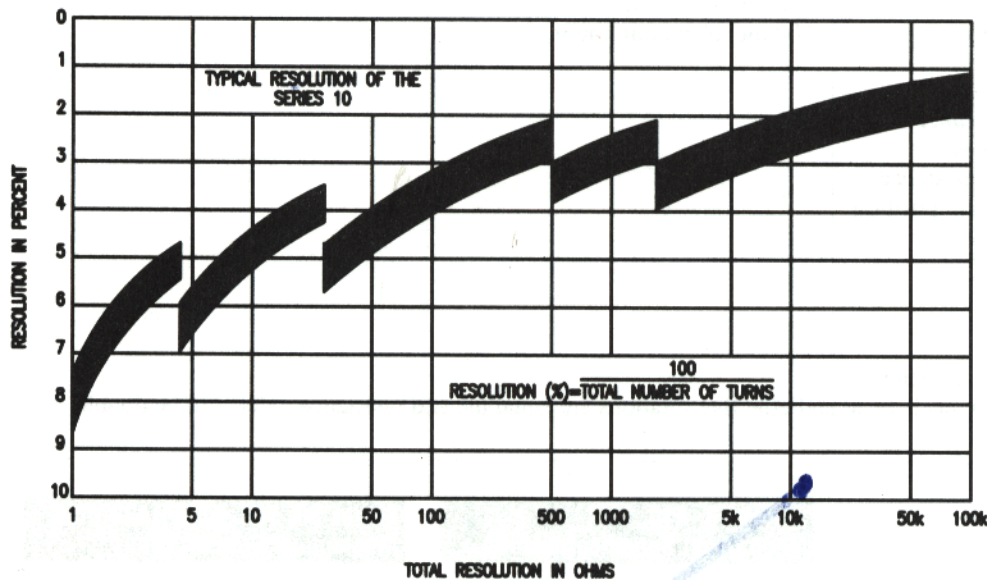


Figure 2

Power Derating Graph

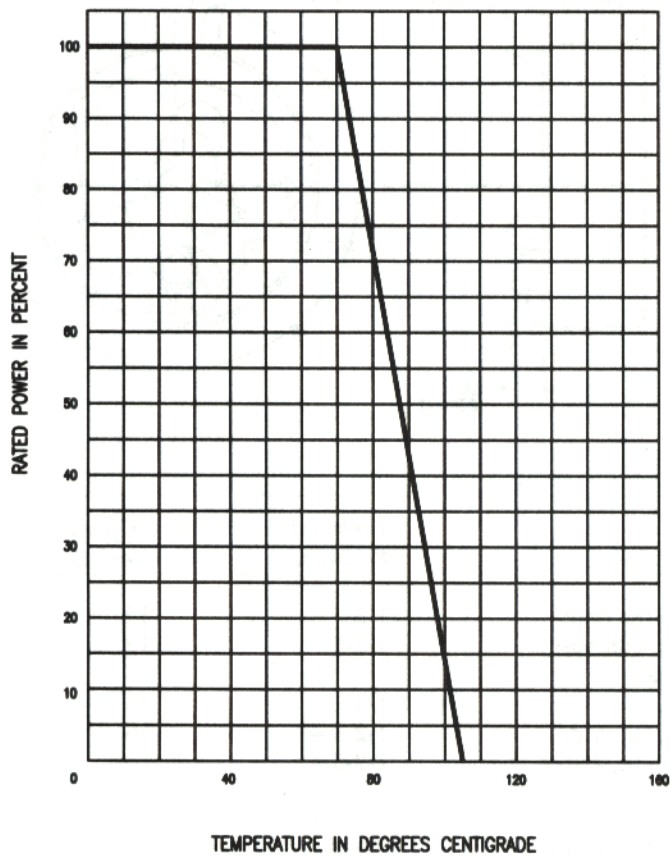


Figure 3

Series 10 Total Resolution in Ohms

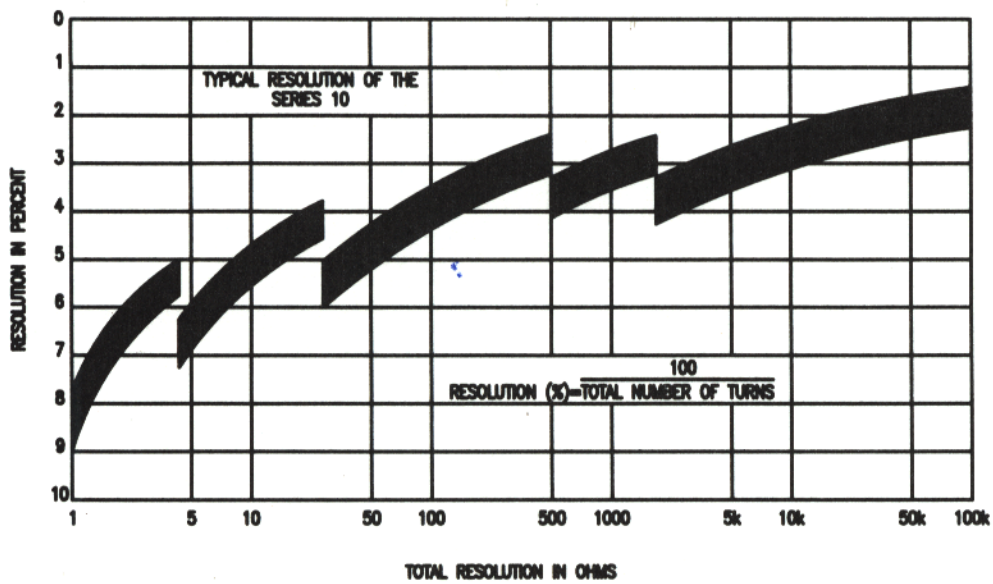
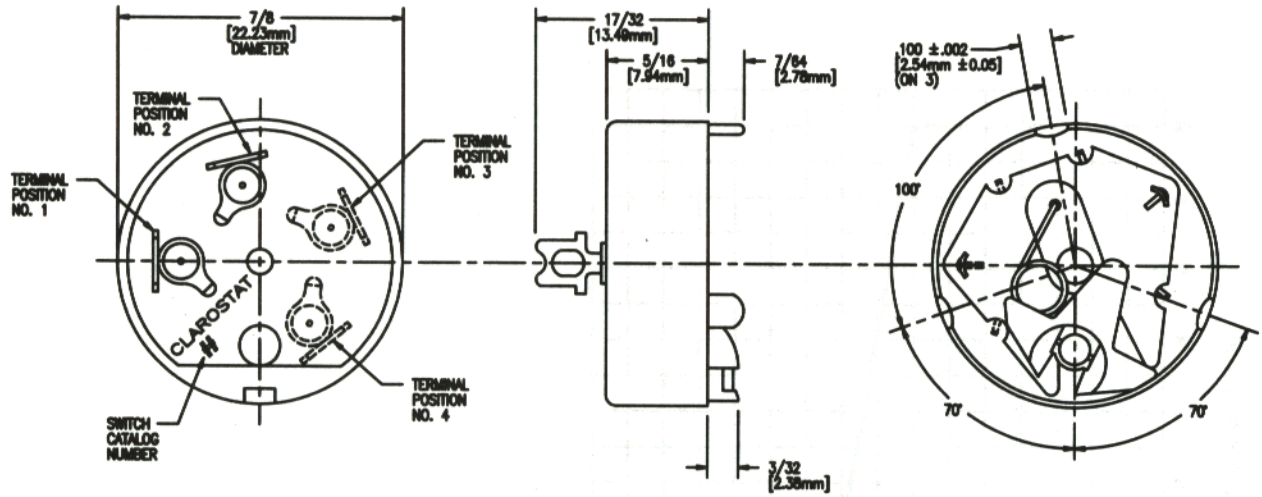


Figure 4

AE Switch Dimensions



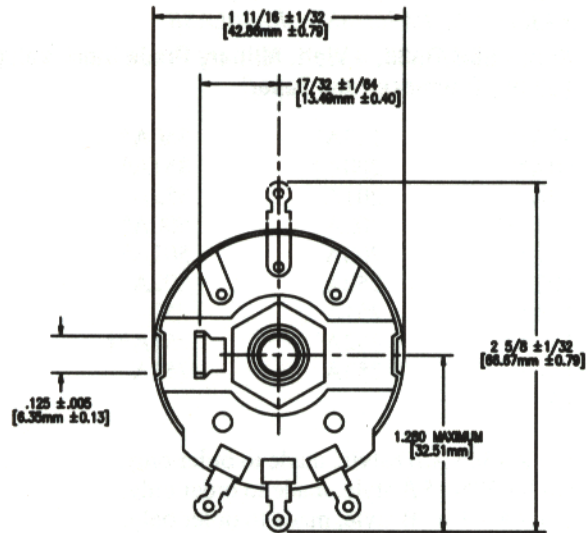
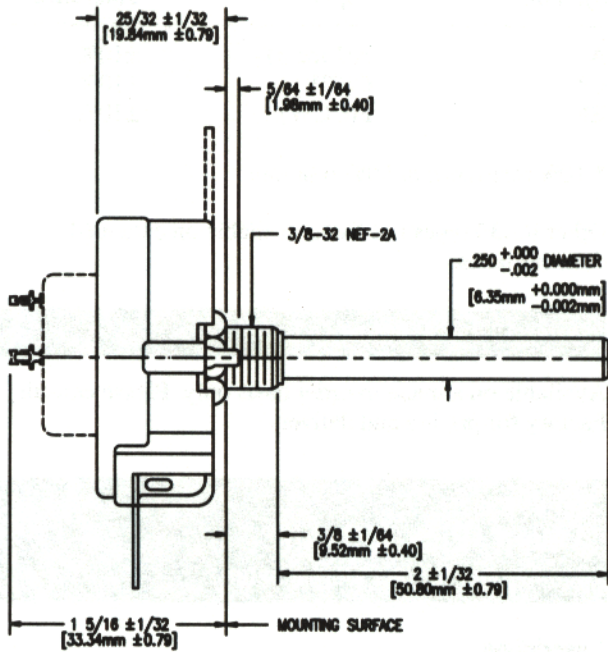
Type No.	Switch	Variations	Terminal Positions	Max. Operating Torque-Oz.In.
AE-10	S.P.S.T.	1a, 250v.; 3a, 125v. (ac or dc)	1-2	12
AE-11	S.P.S.T.	1a, 250v.; 3a, 125v. with bussing terminal (ac or dc)	1-2-4	12
AE-13	S.P.S.T.	15a, 10v. (dc only)	1-4	16
*AE-20	D.P.S.T.	1a, 250v.; 3a, 125v. (ac or dc)	1-2-3-4	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.

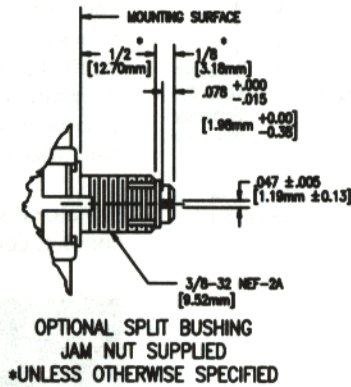
Example: AE-20A.

Figure 5

Series 58 Control Dimensions



DESIGN DETAILS MAY CHANGE WITHOUT NOTICE. CERTIFIED DRAWING AVAILABLE UPON REQUEST



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* ^Δ	153A ^Δ	350A*
60A* ^Δ	200A [†]	351A ^Δ
80A*	201A	352A
100A ^{Δ†}	202A	500A ^Δ
101A ^Δ	203A	501A ^Δ
102A ^Δ	250A	502A
103A	251A	750A
150A*	252A ^Δ	751A* [†]
151A	253A	752A
152A		

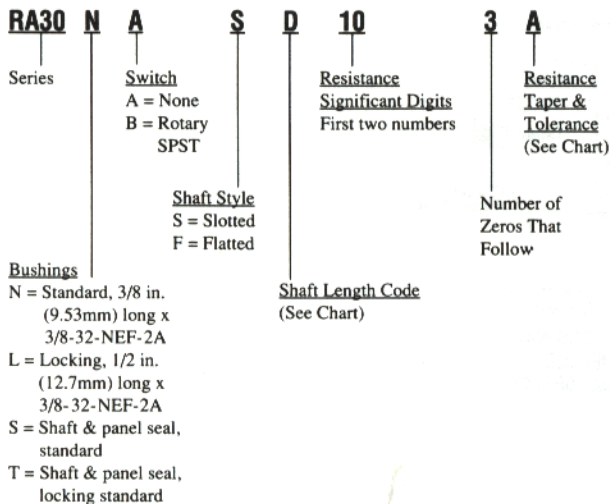
*In RA30NASD style, made to order only.

^ΔIn RA30NASA style, made to order only.

[†]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

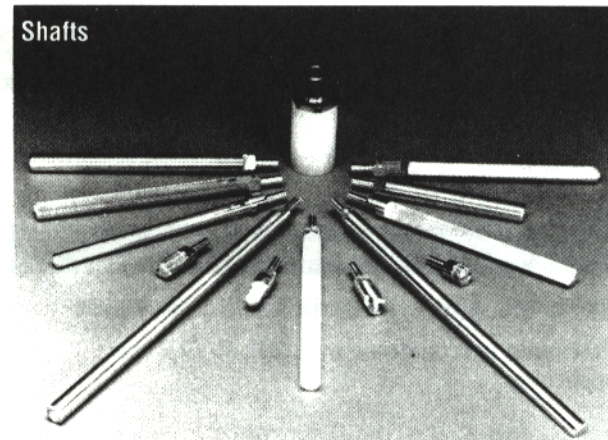
Available on a made to order basis only. Please consult Factory for pricing and delivery.

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.

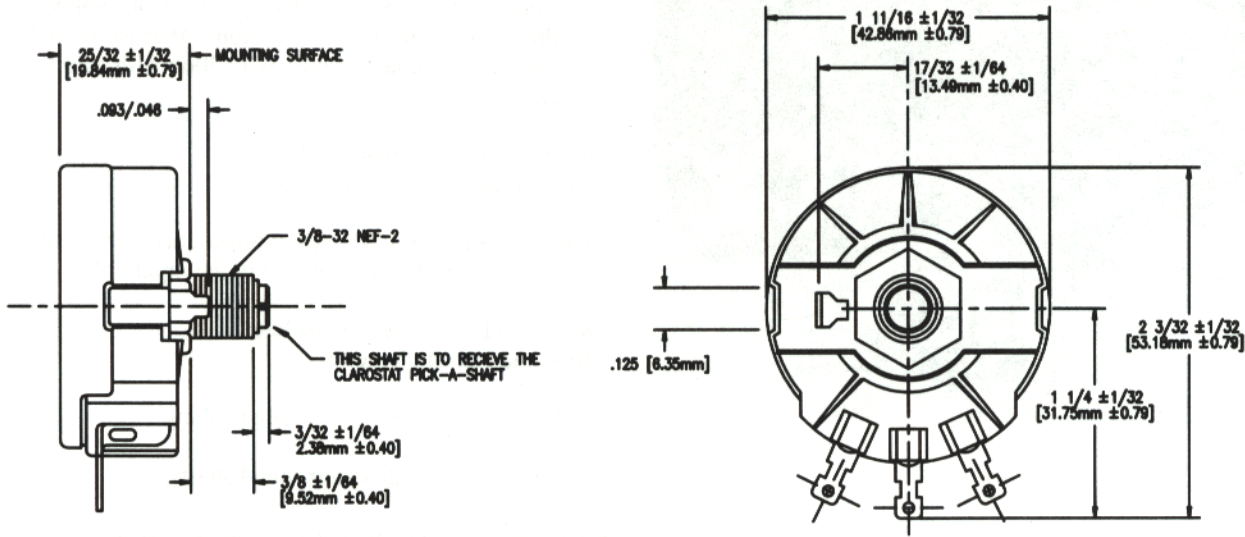
*Choice does not include insulated shaft and bushing coupler; consult Factory for pricing.



Dimensions next page

Figure 6

Series A58 "Pick-A-Shaft" Control Dimensions



"Pick-A-Shaft" controls take any shaft listed below including high voltage coupler and insulated shaft. Your choice of one of the 13 shafts listed (this does not include insulated shaft) with each control. If shaft is not specified, it will be supplied with RS-2 tolerance $\pm 10\%$ all values. All controls linear. Items not listed are special; prices and information on request.

Stocked Shafts

Shafts Catalog Number	Description
(1) SS-3/8	(Male) to take female fitting 3/8 in. (9.53mm) long
(2) RS-2	Round shaft, 2 in. (50.8mm) long
(3) RS-3/16	Round slotted shaft 3/16 in. (4.76mm) dia., 3 in. (76.2mm) long
(4) KSS-3	Knurled, split shaft, 3 in. (76.2mm) long
(5) RS-5	Round shaft, 5 in. (127mm) long
(6) FS-5	Flatted shaft, 5 in. (127mm)
(7) KSS-5	Knurled, split shaft, 5 in. (127mm) long
(8) FS-3	Flatted shaft, 3 in. (76.2mm) long
(9) RS-3	Round shaft, 3 in. (76.2mm) long
(10) DFS-1/2	Double-flatted, Philco-type 1/2 in. (12.7mm) long
(11) FKS-1/4	Fine knurled slotted shaft, 1/4 in. (6.35mm) long
(12) KFS-3	Knurled flatted shaft, 3 in. (76.2mm) long
(13) FKS-1/2	Fine knurled slotted shaft, 1/2 in. (12.7mm) long

Cat. No. 59-186 - - Spacer and bushing assembly.

Cat. No. RN-3 - - Non-metallic shaft, round, 3 in. (76.2mm) long.

High voltage shaft for operation up to 10K volts. Attaches to any Clarostat "Pick-A-Shaft" control.

Series A58 Standard Resistance Values

Stock Values (Ohms)

1	40*	500	5000
2	50	750*	7500*
4	60*	1000	10K
6	75*	1500	15K
10	100	2000	20K
15	200	2250	25K
20	250	2500	30K
25	300	3000*	40K
30	400*	4000	50K

*Made to order

For use with all Clarostat "Pick-A-Shaft" controls either conductive plastic element, or wire-wound. Your choice of shaft furnished, at no extra charge, with each "Pick-A-Shaft" control.

Series A58 How to Order

Example: **A58-15K**



How to Order/Shafts

Example: **RS-2**

