



Features

- Single-turn (3851 and 3852)
- Linear and audio tapers
- 3-3/4-turn (3856)
- Wide resistance range
- Minimal depth package
- Good resolution

3851/3852/3856 - 3/4" Diameter Panel Control

Initial Electrical Characteristics¹

	3851 Conductive Plastic Element	3852/3856 Cermet Element
Standard Resistance Range		
Linear Tapers (A, B, E, and H)	1K to 1 megohm	100 ohms to 1 megohm
Audio Tapers (C, D, F, and G)	1K to 1 megohm	1K ohms to 1 megohm
Resistance Tolerance	±20%	±10%
Zero Base Linearity	(B, D, & G tapers) ±20% (E taper) ±10%	(A, C, & F tapers) ±10% (H taper) ±5%
Independent Linearity	±10%	(A & H tapers) ±5%
Absolute Minimum Resistance	2 ohms maximum	2 ohms maximum
Continuity	Maintained for full mechanical angle	Maintained for full mechanical angle
Effective Electrical Angle	250° ±5°	250° ±5°
Contact Resistance Variation	±1%	±3% of total resistance or 3 ohms (whichever is greater)
Dielectric Withstanding Voltage	MIL-STD-202, Method 301	MIL-STD-202, Method 301
Sea Level	900 VAC minimum	900 VAC minimum
70,000 Feet	350 VAC minimum	350 VAC minimum
Insulation Resistance (500 VDC)	1,000 megohms minimum	1,000 megohms minimum
Power Rating (Voltage Limited By Power Dissipation or 316 VAC, Whichever Is Less)		
+70°C	(B & E tapers) 1 watt (D & G tapers) 0.5 watt	(A & H tapers) 2 watts (C & F tapers) 1 watt
+125°C	0 watt	
+150°C		0 watt
Theoretical Resolution	Essentially infinite	Essentially infinite

Environmental Characteristics¹

Operating Temperature		-1°C to +125°C
Storage Temperature Range		-65°C to +125°C
Temperature Coefficient		
Over Storage Temperature Range	±1,000PPM/°C	±150PPM/°C
Vibration	20G	20G
Total Resistance Shift	±2% maximum	±2% maximum
Voltage Ratio Shift	±5% maximum	±6% maximum
Shock	100G	100G
Total Resistance Shift	±2% maximum	±2% maximum
Voltage Ratio Shift	±5% maximum	±6% maximum
Load Life	1,000 hours	1,000 hours
Total Resistance Shift	±10% maximum	±3% maximum
Rotational Life (No Load)	100,000 cycles	50,000 cycles
Total Resistance Shift	±15% maximum	±5% or 5 ohms (whichever is greater)
Moisture Resistance	MIL-STD-202, Method 103, Condition B	MIL-STD-202, Method 103, Condition B
Total Resistance Shift	±10% maximum	±2% maximum
Insulation Resistance (500 VDC)	100 megohms minimum	100 megohms minimum

Mechanical Characteristics¹

Shaft Torque	(A & B bushings) .05 to 6.0 oz.-in. (0.35 to 4.23 Ncm) (C & E bushings) 0.3 to 6.0 oz.-in. (0.21 to 4.23 Ncm)	3852 (A & B bushings) 0.5 to 6.0 oz.-in. (0.35 to 4.23 Ncm) (C & E bushings) 0.3 to 6.0 oz.-in. (0.21 to 4.23 Ncm) 3856 — 0.15 to 3.0 oz.-in. (0.11 to 2.12 Ncm)
Stop Strength	5 in.-lb. (56.5 Ncm)	5 in.-lb. (56.5 Ncm)
Mechanical Angle	280° ±5°	3852 — 280° ±5° 3856 — 1350° ±50°
Weight	30 grams maximum	30 grams maximum
Terminals	Printed circuit terminals or solder lugs	Printed circuit terminals or solder lugs
Marking	Manufacturer's trademark, wiring diagram, date code, resistance, manufacturer's part number	Manufacturer's trademark, wiring diagram, date code, resistance, manufacturer's part number

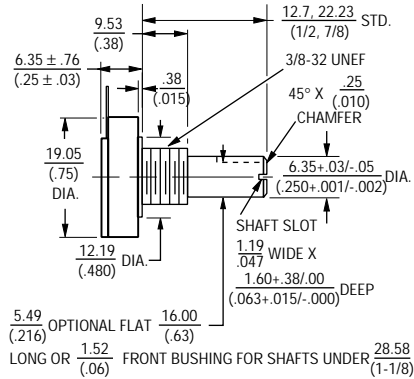
FOR ORDERING INFORMATION SEE PAGE 229.

¹AT ROOM AMBIENT: +25°C NOMINAL AND 50% RELATIVE HUMIDITY NOMINAL, EXCEPT AS NOTED.

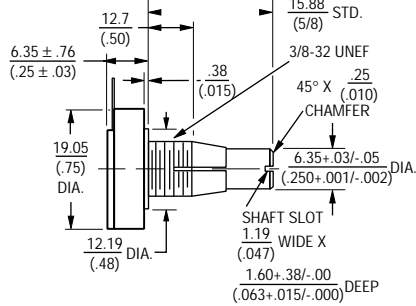
3851/3852/3856 Dimensions and Tolerances



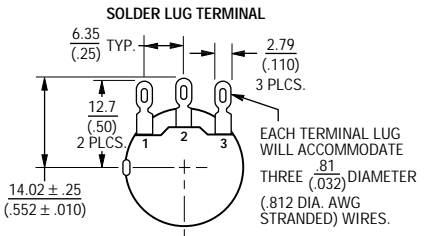
3851A/3852A



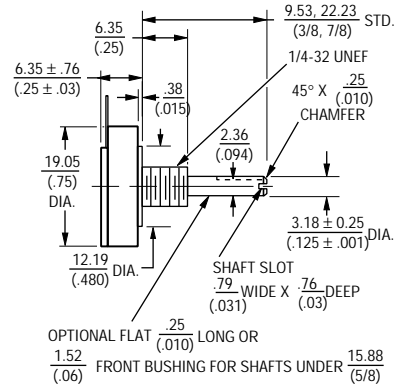
3851B/3852B



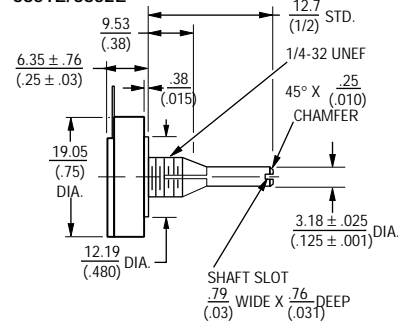
Terminal Configuration



3851C/3852C

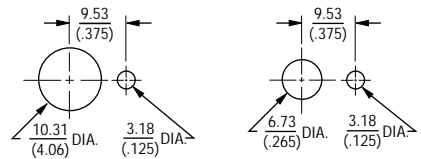


3851E/3852E

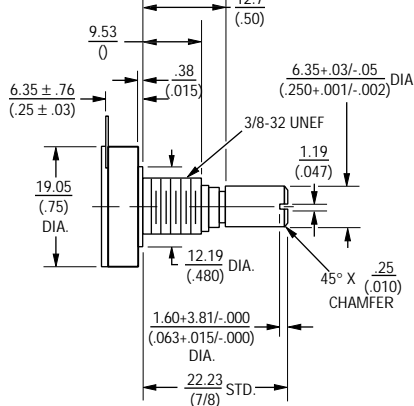


3851/3852/3856

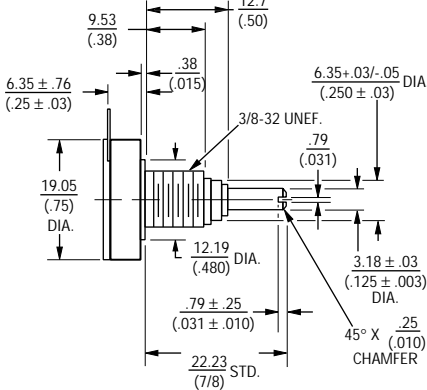
A, B & H BUSHINGS



3856A

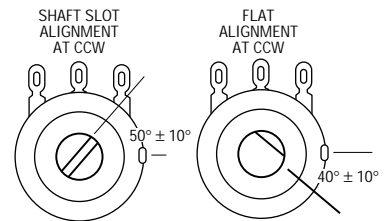


3856H



Shaft End Detail

3850 Family



TOLERANCES EXCEPT AS NOTED:
 DECIMALS: $.XX \pm .127$ (.005), $.XX \pm .38$ (.015)
 FRACTIONS: $\pm 1/64$
 ANGLE: $\pm 3\%$

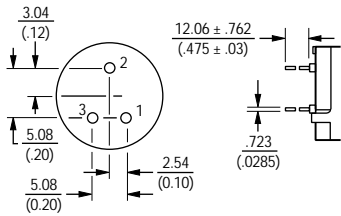
DIMENSIONS ARE: METRIC (INCHES)

3800 Series Dimensions and Tolerances

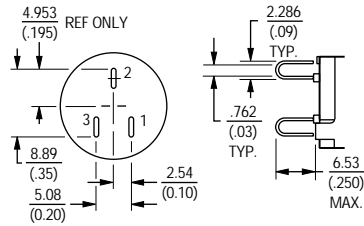


Dimensional Drawings And Tolerances

PC PIN TERMINAL



J-HOOK TERMINAL



DIMENSIONS ARE: METRIC (INCHES)

How To Order

3852 A 28 2 103 A

	SHAFT TYPE (FMS) & DIAMETER	AVAILABLE ONLY IN	
		MODELS	BUSHINGS
12	3/8" (9.53mm) L X 1/8" (3.18mm) D	3851, 3852, 3862	C
16	1/2" (12.7mm) L X 1/8" (3.18mm) D	3851, 3852 3862	C, E C
20	5/8" (15.88mm) L X 1/4" (6.35mm) D	3851, 3852	A, B
28	7/8" (22.20mm) L X 1/4" (6.35mm) D	3851, 3852 3856	A, B A

Consult factory for lengths not shown.

BUSHING	APPLICABLE MODELS
A Plain 3/8" (9.53mm) D x 3/8" (9.53mm) L	3851, 3852, 3856
C Plain 1/4" (6.35mm) D x 1/4" (6.35mm) L	3851, 3852, 3862

RESISTANCE CODE/VALUE (IN OHMS)	
Models 3851, 3852, 3856, 3862	
(102)	1K
(502)	5K
(103)	10K
(503)	50K
(104)	100K

MODEL	
3852	3/4" (19.05mm) D Single-Turn Cermet
3862	1/2" (12.7mm) D Single-Turn Cermet

TERMINAL STYLE AND SHAFT TYPE	
2	Solder Lugs*, Slotted End
6	PC Pins, Slotted End

*Model 3862 comes with J-hook solder lugs.

ELEMENT TAPER/TOLERANCE		APPLICABLE MODELS
A	Linear ±10%	3852, 3856, 3862

*The maximum resistance range for audio tapers is 1000 ohms to 2.5 megohms.