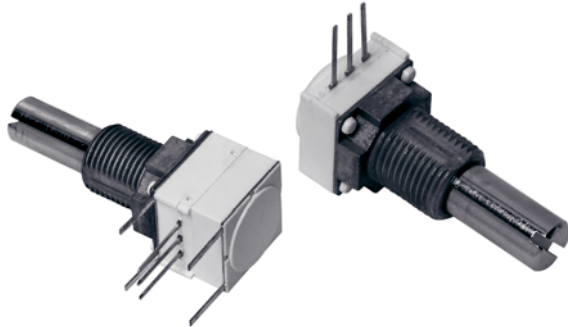


# 1/2" (12.7 mm) Conductive Plastic and Cermet Potentiometers



### 148 FEATURES

- Conductive plastic element
- High rotational life (50 000 cycles)
- Quiet electrical output
- Robust construction

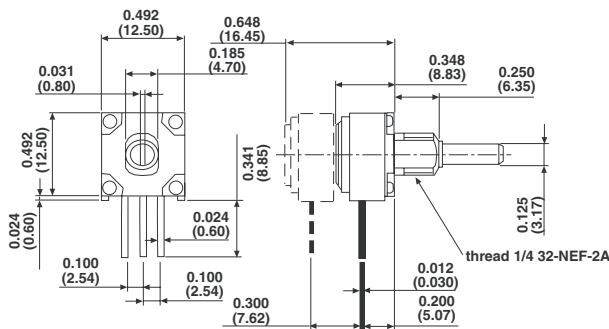


### 149 FEATURES

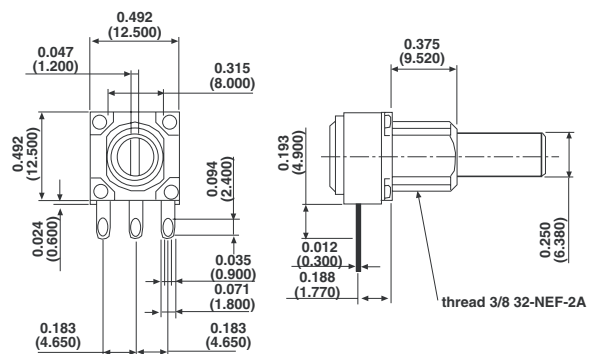
- Cermet element
- Low temperature coefficient ( $\pm 150$  ppm/ $^{\circ}$ C)
- Robust construction

### DIMENSIONS in inches (millimeters)

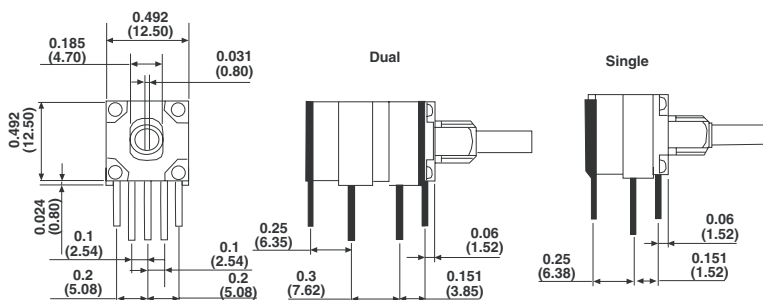
SINGLE, DUAL OR TRIPLE



SOLDER LUG TERMINALS



FRONT AND REAR SUPPORT PLATES  
E = Flush with board surface



Tolerances unless otherwise specified  $\pm 0.5$

**MOUNTING ACCESSORIES: PRODUCT IS SUPPLIED WITH A NUT & WASHER**

### OPTIONAL FEATURES

Up to three sections PC support plates  
Rotary switches, detents, Solder lugs terminals

### CONSTRUCTION MATERIALS

Housing - Molded thermoplastic white  
Shaft - Brass, nickel plated



<b>ELECTRICAL SPECIFICATIONS</b>		
PARAMETER	148	149
Resistance Range	1 k $\Omega$ to 1 M $\Omega$ linear 500 $\Omega$ to 500 k $\Omega$ non-linear	100 $\Omega$ to 2.0 M $\Omega$ linear 250 $\Omega$ to 1 M $\Omega$ non-linear
Resistance Tolerance Linear Non-Linear	Standard $\pm 10\%$ to 500K, $\pm 20\%$ over 500K Standard $\pm 10\%$ to 100K, $\pm 20\%$ over 100K	
Taper Tolerance	20 % of the Nominal R at 50 % mechanical rotation	
Linearity (Typical)	$\pm 5\%$ Independent	
End Resistance	4 $\Omega$ maximum each end	
Power Rating	0.5 watts at 70 °C 0 watts at 120 °C	1 watt at 70 °C 0 watt at 150 °C
	Non-Linear or PC mount, derate 50 %	
Effective Rotation	270° $\pm 10^\circ$ without rotary switch 240° $\pm 10^\circ$ with rotary switch	
Contact Resistance Variation	1.5 % of total resistance	3 % of total resistance
Maximum Continuous Working Voltage	350 VAC across end terminals, but within power rating	
Dielectric Withstanding Voltage	Sea Level - 750 VAC 70 000 feet - 350 VAC	
Switch Specifications	Rotary (AL) switch: S.P.S.T and S.P.D.T 125 mA, 28 VDC CCW or CW, rotational life 10 000 cycles (rated load)	

<b>MECHANICAL SPECIFICATIONS</b>	
Mechanical Rotation	300° $\pm 5^\circ$
Torque	
Operating	Single section 0.2 to 3.0 oz - in Dual or triple section 0.3 to 4.5 oz - in
Center Detent	0.6 to 3.0 oz - in
Stop Strength	3 in - lbs min
<b>Weight (approx)</b>	
Single	0.19 oz
Dual	0.27 oz
Triple	0.35 oz

<b>ENVIRONMENTAL SPECIFICATIONS</b>		
	148	149
Operating Temperature	- 40 °C to + 120 °C	- 40 °C to + 150 °C
Storage Temperature	- 55 °C to + 120 °C	- 55 °C to + 150 °C
Temperature Cycling (5 Cycles)	- 40 °C to + 120 °C (4 % $\Delta$ Rt)	- 40 °C to + 150 °C (3 % $\Delta$ Rt)
Load Life (1000 hrs. Rated Load at 70 °C)	10 % $\Delta$ Rt	5 % $\Delta$ Rt
Rotational Load Life	50 000 cycles	25 000 cycles
TCR	$\pm 1000$ ppm/°C	$\pm 150$ ppm/°C



**MARKING**

Unit Identification: Ink stamp on periphery

<b>ORDERING INFORMATION</b>									
148 MODEL	S NUMBER OF SECTIONS	X MECHANICAL CONFIGURATION	G METRIC BUSHING SIZE & SHAFT	56 SHAFT LENGTH	S SHAFT STYLE	103 RESISTANCE CODE Ω	S TAPER	P TERMINAL CONFIGURATION	e3 LEAD FINISH
<b>FROM THE MOUNTING SURFACE</b>									
148 CP 149 Cer	S: Single D: Duals T: Triple	X: None (single shaft D, T sections) S: Single w/rotary switch P: Dual w/rotary switch	N: 1/4 Dia x 1/4 L Shaft 1/8 Dia J: 1/4 Dia x 3/8 L Shaft, 1/8 Dia G: 3/8 Dia x 3/8 L Shaft, 1/4 Dia	Shaft length code 32: 1/2 in 40: 5/8 in 48: 3/4 in 56: 7/8 in 64: 1 in 80: 1 1/4 in	S: Slotted F: Flatted P: Plain slotted in std. on request F and P	EIA code - first 2 significant digits 3rd is number of zeros 100 10K 500K 250 20K 750K 500 25K 1M 750 50K 2M 1K 75K 2.5K 100K 5K 250K	S: Linear ± 10 % Z: CW Log. ± 10 % to 500 kΩ ± 20 % over 500 kΩ R: CCW Log. ± 10 % to 500 kΩ ± 20 % over 500 kΩ	P: PC, 0.250 E: PC terminals with E support plate S: Solder lugs	e3: Pure Sn

<b>SAP PART NUMBERING GUIDELINES</b>																	
1	4	8	1	0	F	0	G	J	S	X	1	0	1	0	3	K	A
MODEL			NB OF MOD.		SWITCH	BUSHING	LOCATING PEG		SHAFT		LEADS		OHMIC VALUE/TOL/LAW OR SPECIAL				
See the end of this data book for conversion tables																	



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