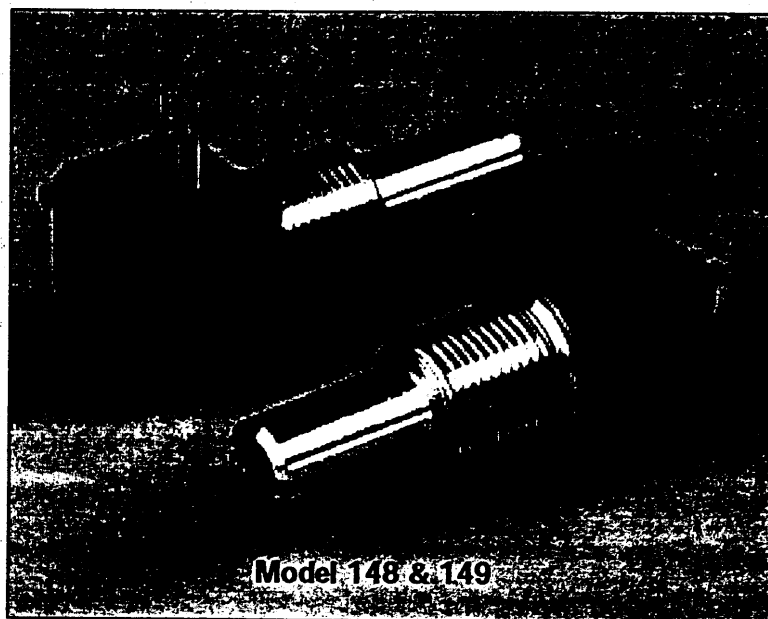


Model

148 & 149

Conductive Plastic and Cermet
Potentiometers



Model 148 & 149

148 FEATURES

- Conductive plastic element.
- Smooth feel.
- High rotational life.
- Quiet electrical output.
- Robust construction.

149 FEATURES

- Cermet element.
- Smooth feel.
- Temperature stable.
- Robust construction.

ELECTRICAL

Resistance Range:

148: 10 Ω to 5.0M Ω - linear
500 Ω to 2M Ω - non-linear
149: 100 Ω to 2.0M Ω - linear
250 Ω to 1M Ω - non-linear

Resistance Tolerance:

Linear - Standard $\pm 10\%$ to 500K,
 $\pm 20\%$ over 500K
Non-Linear - Standard $\pm 10\%$ to 100K,
 $\pm 20\%$ over 100K

Taper Tolerance:

20% of Nominal R @ 50%
mechanical rotation

Linearity:

$\pm 5\%$ independent

End Resistance:

Linear - 4 Ω max. each end
Non-Linear - 4 Ω max. low side;
1% total R high side

Power Rating:

148: 0.5 watts @ 70°C,
0 watts @ 120°C,
149: 1 watt @ 70°C,
0 watt @ 150°C,
Non-Linear or PC mount, derate 50%

Effective Rotation:

265° $\pm 5^\circ$ without rotary switch
240° $\pm 5^\circ$ with rotary switch

Dynamic Noise:

148: 1.5% of total resistance
149: 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 25,000
cycles (rated load)

ENVIRONMENTAL

Operating Temperature:

148: -40°C to +120°C
149: -40°C to +150°C

Storage Temperature:

148: -55°C to +120°C
149: -55°C to +150°C

Temperature Cycling:

148: -40°C to +120°C; (4% ΔR_t)
149: -40°C to +150°C; (3% ΔR_t)

Load Life:

1000hrs. Rated Load @ 70°C
148: 10% ΔR_t
149: 5% ΔR_t

Rotational Load Life:

148: 50,000 cycles
149: 25,000 cycles

TCR:

148: ± 1000 ppm/°C
149: ± 150 ppm/°C

MECHANICAL

Mechanical Rotation:

295°C $\pm 5^\circ$

Torque:

Operating - single section .2 to 3.0 oz. in.
Dual or triple section .3 to
4.5 oz. in.

Variation in a control - .5 oz. in.
Centre detent - .6 to 3.0 oz. in.
Stop strength - 3 in. lbs. min.

Weight (approx):

Single - 0.19 oz., Dual - 0.27 oz.,
Triple - 0.35 oz.

Marking:

Ink stamp on periphery or rear per EIA
standard.

148 & 149

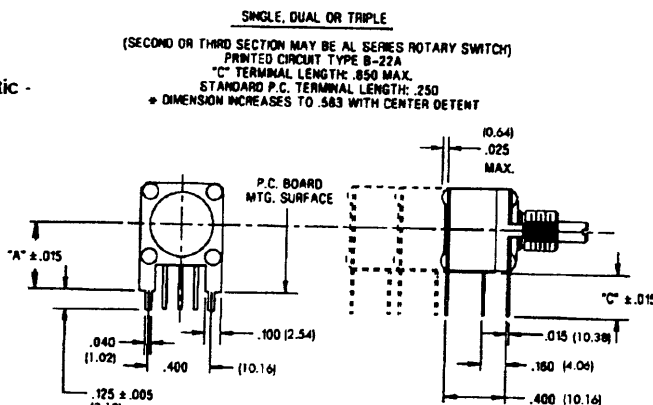
DIMENSIONS

Up to three sections
PC support plates
Type A forward mount
Type C rear mount

Technical drawing of a mechanical assembly showing a cross-section of a component with various dimensions and tolerances. The drawing includes the following dimensions and tolerances:

- Overall length: 227.0
- Dimension from left face to centerline: 1.062 ± 0.015
- Dimension from centerline to right face: (19.5)
- Dimension from left face to a specific feature: ± 0.015
- Dimension from centerline to a specific feature: $.031$ (0.8)
- Dimension from centerline to a specific feature: $.766 \pm 0.015$
- Dimension from centerline to a specific feature: (11.9)
- Dimension from centerline to a specific feature: $.468 \pm 0.015$
- Dimension from centerline to a specific feature: ± 0.001
- Dimension from centerline to a specific feature: $\phi .125$ ($\pm .017$)
- Dimension from centerline to a specific feature: $.031 \pm .005$ (0.8)
- Dimension from centerline to a specific feature: ± 0.010
- Dimension from centerline to a specific feature: $-.000$
- Dimension from centerline to a specific feature: $1/4-32-NEF-2A$ THREAD
- Dimension from centerline to a specific feature: $.016$ (0.4)
- Dimension from centerline to a specific feature: $.203$ (5.08)
- Dimension from centerline to a specific feature: $.300$
- Dimension from centerline to a specific feature: $.300$
- Dimension from centerline to a specific feature: 300

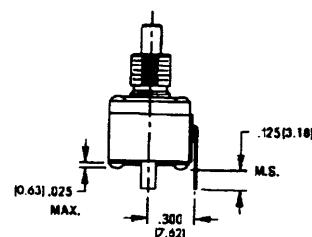
Bushing - Brass - nickel plated
Shaft - Brass - nickel plated
Wiper - Metal contact spring



Technical drawing of a solder lug terminal. Dimensions include: (12.3) .484, .070 (1.0), .200, .055 (1.4), and .055 (1.4). A note states: "HOOK WILL ACCEPT 3 NO. 22 AWG. WIRES". The caption below the drawing is "SOLDER LUG TERMINALS".

Diagram illustrating the Type "A" Mounting dimensions. The mounting features a central vertical shaft with a diameter of $\frac{7}{21}$ inches. The distance from the center of the shaft to the center of the mounting base is $.300$ inches. The distance from the center of the shaft to the center of the mounting base is 0.125 inches (3.18 mm).

TYPE "A" MOUNTING



TYPE "C" MOUNTING

Mounting Accessories: Product is supplied with a nut & shake-proof washer except C, E & F support plate versions.

148-
SERIES
 148 CP
 149 Cor

S
NUMBER OF SECTIONS
 S: Single
 D: Dual
 T: Triple

X
MECHANICAL CONFIGURATION
 X: None (single shaft S, D, T sections)
 S: Single w/ rotary switch
 P: Dual w/ rotary switch
 D: Single w/ center detent (1/4 Dia Bush)
 E: Dual w/ center detent (1/4 Dia Bush)

M
METRIC BUSHING SIZE & SHAFT DIAMETER
 M: M7 x .75; 6mm L
 Shaft, 3mm Dia.
ENGLISH BUSHING SIZE & SHAFT DIAMETER
 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
 P: As G but plastic shaft

16
MATCHING METRIC
 Shaft length code, mm
 Single Shaft
 10: 10mm
 13: 13mm
 16: 16mm
 22: 22mm
 25: 25mm
MATCHING ENGLISH
 Shaft length code, in 64th in.
 Single Shaft
 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
SHAFT STYLE
 S: Slotted
 F: Flatted
 P: Plain

103
RESISTANCE CODE (ohms)
 (EIA Code- First 2 significant digits, 3rd is number of zeros)

100	10K	500K
250	20K	750K
500	25K	1meg
750	50K	2meg
1K	75K	5meg
2.5K	100K	
5K	250K	

S
TAPER
 S: Linear, $\pm 10\%$
 Z: CW Log, $\pm 10\%$ to 500K ohms; $\pm 20\%$ over 500K
 R: CCW Log, $\pm 10\%$ to 500K ohms; $\pm 20\%$ over 500K

P
TERMINAL CONFIGURATION
 P: PC, 0.250" long
 E: PC terminals with E support plate
 F: PC terminals with F support plate
 S: Solder Hook
 A: Type A Mounting
 C: Type C Mounting
 L: long Terminals (0.85 in)