



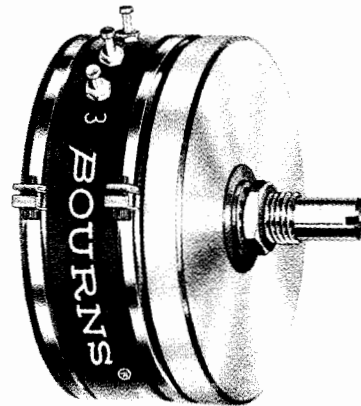
Model 3416
BOURNS® Potentiometer
Single-Turn, 2" Diameter Bushing Mount
INFINITRON® Conductive Plastic Element

OBSOLETE 1980

FEATURES

- Infinite resolution element
- Rotational Life: 50,000,000 shaft revolutions
- Standard Linearity: 0.5%; Special Linearities Available
- Dither Life: 5° ARC @ 60 cps for 1,000 hours
- Extended Temperature Range: -55°C to +125°C
- Outstanding resistance to humidity.
Exceeds moisture resistance requirements of MIL-R-39023
- Output smoothness: 0.1% standard
- Shaft supported front and rear by precision ball bearings
- Performance of the Model 3416 is guaranteed by the Bourns Reliability Assurance Program, which includes individual inspection to published electrical and physical characteristics
- Custom design capability is available to satisfy your most demanding and difficult special requirements

Actual Size



STANDARD RESISTANCES

Resistance (Ohms)	Part Number*
200	3416S-1-201
500	3416S-1-501
1,000	3416S-1-102
2,000	3416S-1-202
5,000	3416S-1-502
10,000	3416S-1-103

Resistance (Ohms)	Part Number*
20,000	3416S-1-203
50,000	3416S-1-503
100,000	3416S-1-104
200,000	3416S-1-204
500,000	3416S-1-504
1,000,000	3416S-1-105

*The last three digits of the part number represent the resistance in standard code.

BOURNS® Potentiometer Model 3416

STANDARD SPECIFICATIONS

THE SPECIFICATIONS LISTED BELOW ARE FOR THE STANDARD MODEL. MODIFICATIONS OF ALL TYPES (MECHANICAL, ELECTRICAL AND ENVIRONMENTAL) CAN BE CUSTOM ENGINEERED TO YOUR SPECIFIC REQUIREMENTS.

ELECTRICAL CHARACTERISTICS

Resistance Range	200Ω to 1 megohm
Resistance Tolerance*	±5%
Linearity (Independent)* Standard	±0.5%
Best Practical	Consult Factory
Resolution	Essentially infinite
Effective Electrical Angle*	350° ±2°
Minimum Voltage*	0.1% maximum
Output Smoothness①	0.1%
Power Rating (500 V Maximum)	
70°C	2 watts
125°C	0 watt
Dielectric Strength	MIL-R-39023
Sea Level	1000 VAC minimum
70,000 feet	400 VAC minimum
Insulation Resistance, 500 VDC	1,000 megohms minimum

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature Range -55°C to +125°C

Temperature Coefficient:

Specific temperature coefficient limits vary depending on the resistance value of the potentiometer and the temperature range in which it will be used. In general, the temperature coefficient value of Bourns' INFINITRON® conductive plastic potentiometers is within ±200 PPM/°C.

When requesting exact values, please specify the resistance value of the potentiometer to be used and the temperature range required for your application.

(When potentiometers are used as voltage dividers, the resistance change due to temperature coefficient does not affect the wiper output as a ratio of the total applied voltage. Therefore, temperature coefficient should not be considered a major or significant specification in this type application.)

Humidity MIL-R-39023, moisture resistance

Vibration MIL-R-39023, 15G

Wiper Bounce 0.1 millisecond maximum

Wiper Shift 1.0% maximum

Shock	MIL-R-39023, 50G
Wiper Bounce and Wiper Shift	Same as vibration
Rotational Load Life	MIL-R-39023, 1000 hours
Resistance Shift	5.0% maximum
Dither Life	1000 hours @ 60 cps
Sand and Dust	MIL-E-5272
Fungus	MIL-E-5272
Salt Spray	MIL-R-39023

MECHANICAL AND PHYSICAL CHARACTERISTICS

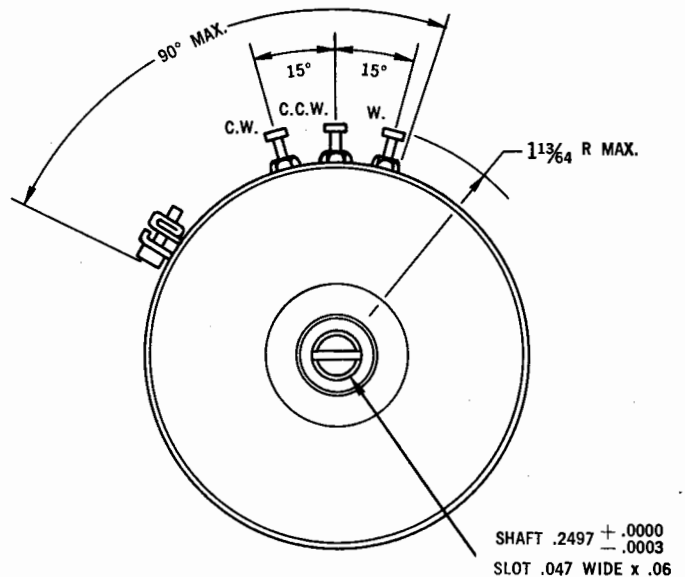
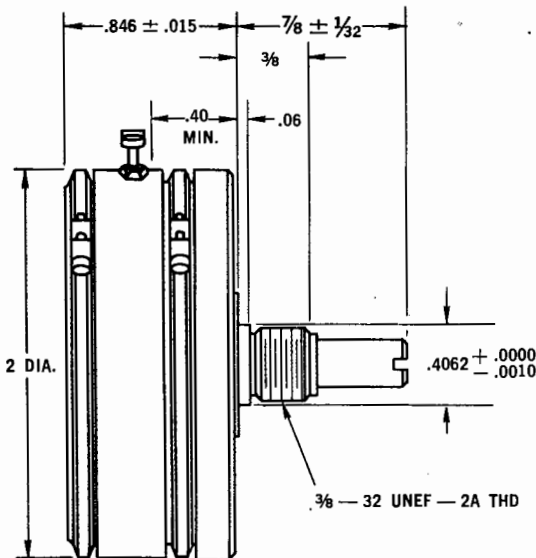
Mechanical Angle	Continuous
Shaft Runout*001 in. T.I.R.
Shaft End Play*003 in. T.I.R.
Shaft Radial Play*004 in. T.I.R.
Rotational Life	50,000,000 shaft revolutions
Torque*	
Starting	1.5 oz.-in. maximum
Running	1.0 oz.-in. maximum
	(add .75 oz.-in. for each additional cup)
Ganging	8 cups maximum
Weight	Approximately 3 oz.
Terminals	Gold-plated turrets
Marking*	Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram and date code.

NOTES:① Noise 100Ω or 1% ENR maximum available as 3416S-14-(RC).

*100% or statistical sampling inspection performed to insure highest quality.

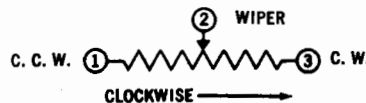
Specifications are subject to change without notice.

3416



NOTES:

1. ADD .500 TO .846 DIM FOR EACH ADDITIONAL CUP.
2. LOCKWASHER AND HEX NUT TO BE SUPPLIED WITH EACH UNIT.



TOLERANCES: EXCEPT WHERE NOTED
DECIMALS: .XX ± .010, XXX ± .005
FRACTIONS: ± 1/4

