



**FEATURES**

- Unique INFINITRON® conductive plastic element provides essentially infinite resolution.
- Rotational life: 50,000,000 shaft revolutions.
- Standard linearity 0.5% — special linearities available.
- Output smoothness: 0.1% standard.
- Outstanding resistance to humidity — exceeds moisture resistance requirements of MIL-R-39023.
- Exclusive termination technique insures low end resistance and definite effective electrical angle.
- Custom design capability is available to satisfy your most demanding and difficult special requirements.

**MODEL 3451**

**BOURNS® POTENTIOMETER  
2" DIAMETER 10-TURN SERVO MOUNT  
CONDUCTIVE PLASTIC ELEMENT**

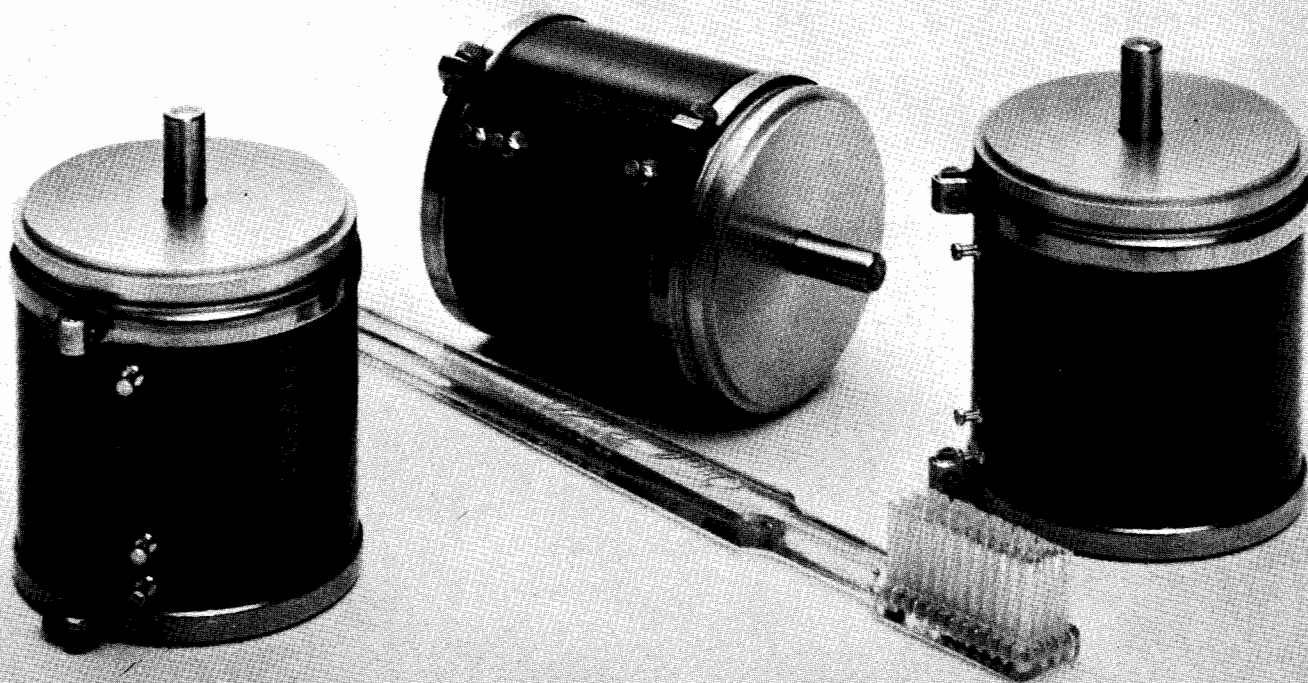
**OBSOLETE** 1995

**STANDARD RESISTANCES**

Resistance (ohms)	Part Number*
2,000	3451S-1-202
5,000	3451S-1-502
10,000	3451S-1-103
20,000	3451S-1-203

Resistance (ohms)	Part Number*
50,000	3451S-1-503
100,000	3451S-1-104
200,000	3451S-1-204
500,000	3451S-1-504

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



### ELECTRICAL CHARACTERISTICS

Resistance Range	2,000 to 500,000 ohms
Resistance Tolerance*	±10%
Linearity (Independent) Standard①	0.5% maximum
Repeatability	0.005%
Resolution	Essentially infinite
Effective Electrical Angle*	3600° (+10° -2°)
Minimum Voltage	0.1% maximum
Output Smoothness	0.1% maximum
Noise	100 ohms or 1% ENR maximum available as 3451S-14-(RC)

### Power Rating (325 Volts Maximum)

70°C	5.0 watts
125°C	0 watt
Dielectric Strength	MIL-R-39023
Sea Level	1000 volts AC minimum
70,000 feet	300 volts AC minimum
Insulation Resistance, 500 Volts DC*	1000 megohms minimum

### ENVIRONMENTAL CHARACTERISTICS

Operating Temperature Range ..... -55 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 ±400 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, 10G
Wiper Bounce	0.1 millisecond maximum
Wiper Shift	0.1% maximum
Shock	MIL-R-39023, 50G
Wiper Bounce and Wiper Shift	Same as Vibration
Load Life	MIL-R-39023, 1000 hours
Sand and Dust	MIL-E-5272
Fungus	MIL-E-5272
Salt Spray	MIL-R-39023

### MECHANICAL AND PHYSICAL CHARACTERISTICS

Mechanical Angle*	3600° (+10°, -0°)
Shaft Runout*	0.001 in. T.I.R.
Shaft End Play*	0.005 in. T.I.R.
Shaft Radial Play*	0.001 in. T.I.R.
Pilot Diameter Runout*	0.002 in. T.I.R.
Lateral Runout*	0.002 in. T.I.R.
Rotational Life	50,000,000 shaft revolutions
Stop Strength	600 oz.-in. minimum
Ganging	5 cups maximum
Torque*	
Starting and Running	1.2 oz.-in. maximum
Weight	Approximately 8.0 oz.
Terminals	Gold-plated turrets
Markings*	Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code

### NOTES

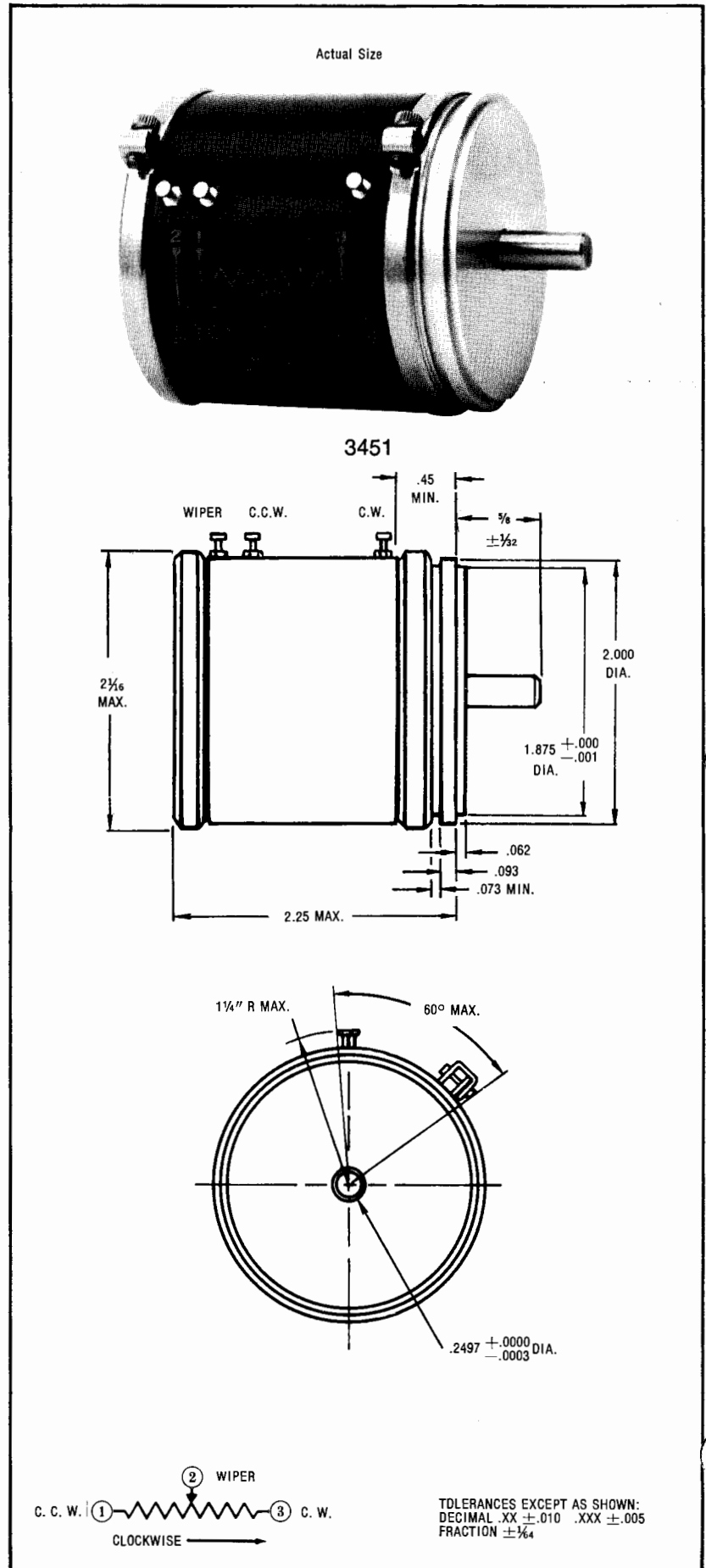
\*100% or statistical sample inspection performed to insure highest quality.

①From 1% to 99% VR Output.

Specifications are subject to change without notice.

## BOURNS® POTENTIOMETER 2" DIAMETER 10-TURN SERVO MOUNT CONDUCTIVE PLASTIC ELEMENT

# MODEL 3451



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