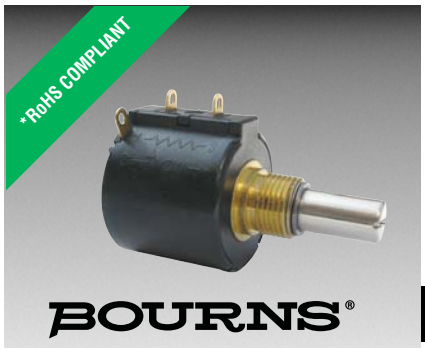


Features

- Wirewound and Hybritron® elements
- High rotational life
- Optional 0.1 % linearity
- Optional A/R lug
- RoHS compliant*
- Suitable for use under some side load conditions
- Designed for HMI and MMI applications
- Dual gang option
- Servo mount option
- Dual ball bearing option

3549 - 10-Turn Precision Potentiometer

Electrical Characteristics[1]	Wirewound Element	Hybritron® Element
Standard Resistance Range	100 to 100K ohms	1K to 100K ohms
Total Resistance Tolerance	±3 %	±10 %
Independent Linearity	±0.2 %	±0.2 %
Independent Linearity (Maximum Practical)	±0.1 %	±0.1 %
Effective Electrical Angle	3600 ° +10 °, -0 °	3600 ° +10 °, -0 °
Absolute Minimum Resistance/End Voltage (whichever is greater)	1 ohm or 0.1 % maximum	0.2 % maximum
Noise/Output Smoothness	100 ohms maximum	0.10 % maximum
Max. Wiper Current @ 5K ohms	20 mA	10 mA
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)		
Sea Level	1,000 VAC minimum	1,000 VAC minimum
Insulation Resistance (500 VDC)	1,000 megohms minimum	1,000 megohms minimum
Resolution	See How to Order chart	Essentially infinite
Power Rating (Voltage Limited By Power Dissipation)		
+70 °C	2 watts	2 watts
+125 °C	0 watt	0 watt

Environmental Characteristics[1]		
Operating Temperature Range		
Dynamic	-40 °C to +125 °C	-40 °C to +125 °C
Static	-55 °C to +125 °C	-55 °C to +125 °C
Temperature Coefficient (Over Static Temperature Range)	±50 ppm/°C	±100 ppm/°C
Temperature Cycling (5 Cycles Over Static Temperature Range)	±2 % TR shift max.	±4 % TR shift max.
Vibration (15 Gs, 10 Hz to 2 kHz)		
Wiper Bounce	0.1 ms max.	0.1 ms max.
Shock (100 Gs, 6 ms sawtooth)		
Wiper Bounce	0.1 ms max.	0.1 ms max.
Load Life (1,000 hours @ 70 °C)	±2 % TR shift	±5 % TR shift max.
Rotational Life		
No Load or Powered	2,000,000 shaft revolutions	5,000,000 shaft revolutions
No Load or Powered (Dual Ball Bearing)	N/A	10,000,000 shaft revolutions
Moisture Resistance (Mil-Std-202, Method 103)	±2 % TR shift max.	±5 % TR shift max.
IP Rating	IP 50	IP 50

Mechanical Characteristics[1]	
Mechanical Angle	3600 ° +10 °, -0 °
Backlash	1.0 ° max.
Stop Strength	53 N-cm (75 oz-in.) min.
Torque	
Starting	0.5 N-cm (0.7 oz.-in.) max.
Running	0.5 N-cm (0.7 oz.-in.) max.
Clutch	1.0 to 4.2 N-cm (1.5 to 6.0 oz.-in.)
Mounting	170-200 N-cm (15-18 in.-lb.) max.
Shaft Runout T.I.R.	0.08 mm (0.003 in.)
Lateral Runout T.I.R.	0.13 mm (0.005 in.)
Shaft End Play T.I.R.	0.15 mm (0.006 in.)
Shaft Radial Play T.I.R.	0.08 mm (0.003 in.)
Pilot Diameter Runout T.I.R.	0.08 mm (0.003 in.)
Weight	
Single	20 gm (0.7 oz.) typ.
Dual	36 gm (1.27 oz) typ.
Shaft Side Load (Max. Allowable)	
Nickel Plated Brass Shaft w/Brass Bushing	50 gmf (1.7 ozf)
Stainless Steel Shaft w/Bronze Bushing	250 gmf (8.8 ozf)
Terminals	Gold-plated solder lugs
Soldering Condition	
Manual Soldering	96.5Sn/3.0Ag/0.5Cu solid wire or no-clean rosin cored wire, 370 °C (700 °F) max. for 3 seconds
Wave Soldering	96.5Sn/3.0Ag/0.5Cu solder with no-clean flux, 260 °C (500 °F) max. for 5 seconds
Wash processes	Not recommended
Mounting Hardware	One lockwasher and one mounting nut is shipped with each potentiometer
Recommended Panel Thickness (Bushing Mount)	2.46-3.81 mm (0.097-0.150 in.)
Marking	Manufacturer's symbol, model number, product code and date code
Standard Packaging	Plastic trays (5 pcs./tray)

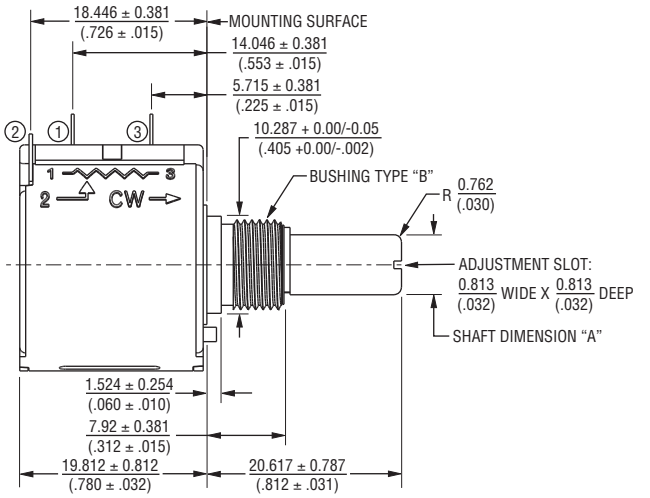
[1]At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.
For other options, please consult factory.

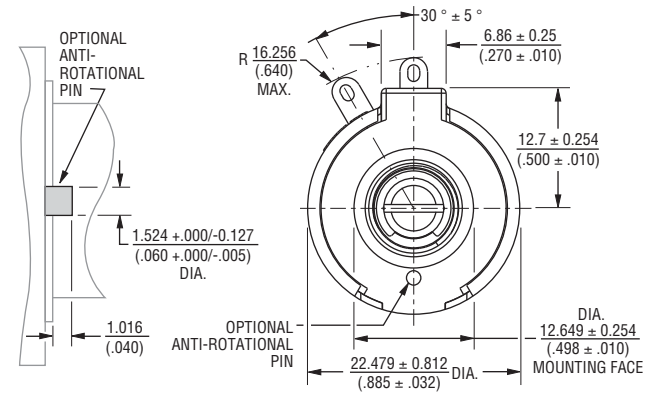
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

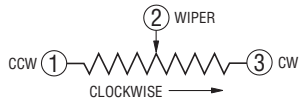
Specifications are subject to change without notice.
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Users should verify actual device performance in their specific applications.

Product Dimensions

Single Gang, Bushing Mount







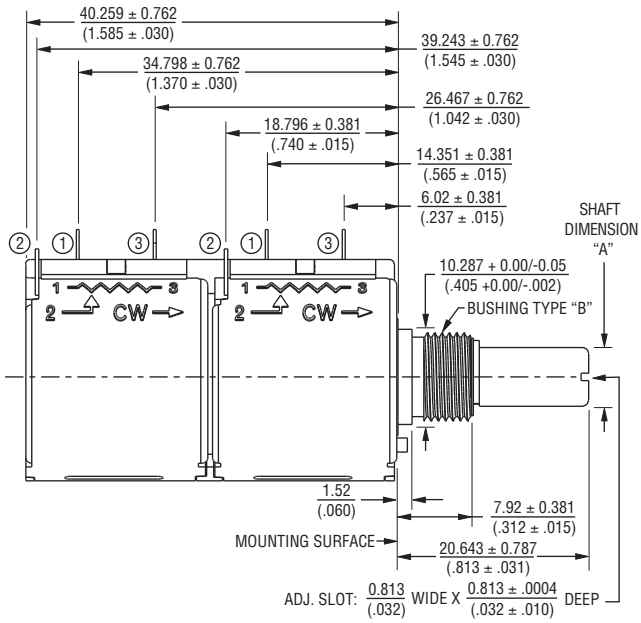
TOLERANCES: EXCEPT WHERE NOTED

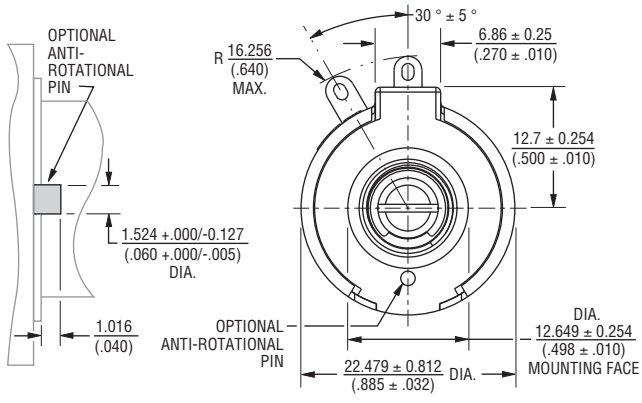
DECIMALS: .XX ± .50 (.02) .XXX ± .127 (.005) .XXXX ± .0127 (.0005)

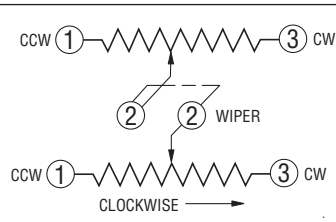
DIMENSIONS: MM (IN)

Bushing Selection Code	Shaft Dimension "A"	Shaft Material	Bushing Type "B"	Bushing Material
A	6.34 +0/-0.022 (0.2497 +0/-0.0009)	Nickel Plated Brass	3/8 " 32-UNEF- 2A THD.	Brass
B	6.00 +0/-0.022 (0.2362 +0/-0.0009)	Nickel Plated Brass	M9 X 0.75-8g	Brass
C	6.34 +0/-0.007 (0.2497 +0/-0.0003)	Stainless Steel	3/8 " 32-UNEF- 2A THD.	Bronze
D	6.00 +0/-0.007 (0.2362 +0/-0.0003)	Stainless Steel	M9 X 0.75-8g	Bronze
G	6.34 +0/-0.007 (0.2497 +0/-0.0003)	Stainless Steel	3/8 " 32-UNEF- 2A THD.	Bronze
H	6.00 +0/-0.007 (0.2362 +0/-0.0003)	Stainless Steel	M9 X 0.75-8g	Bronze

Dual Gang, Bushing Mount



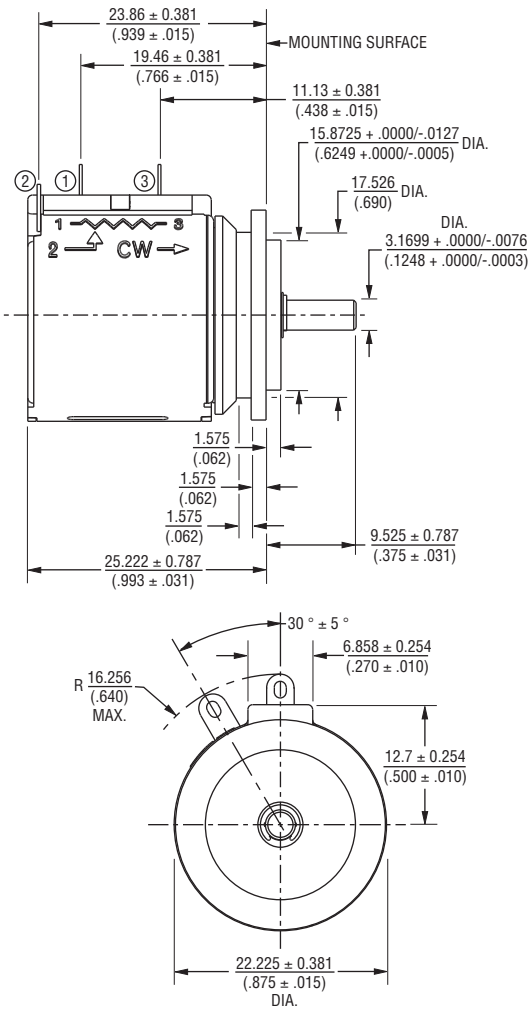


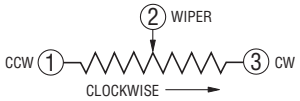


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Product Dimensions

Single Gang, Servo Mount



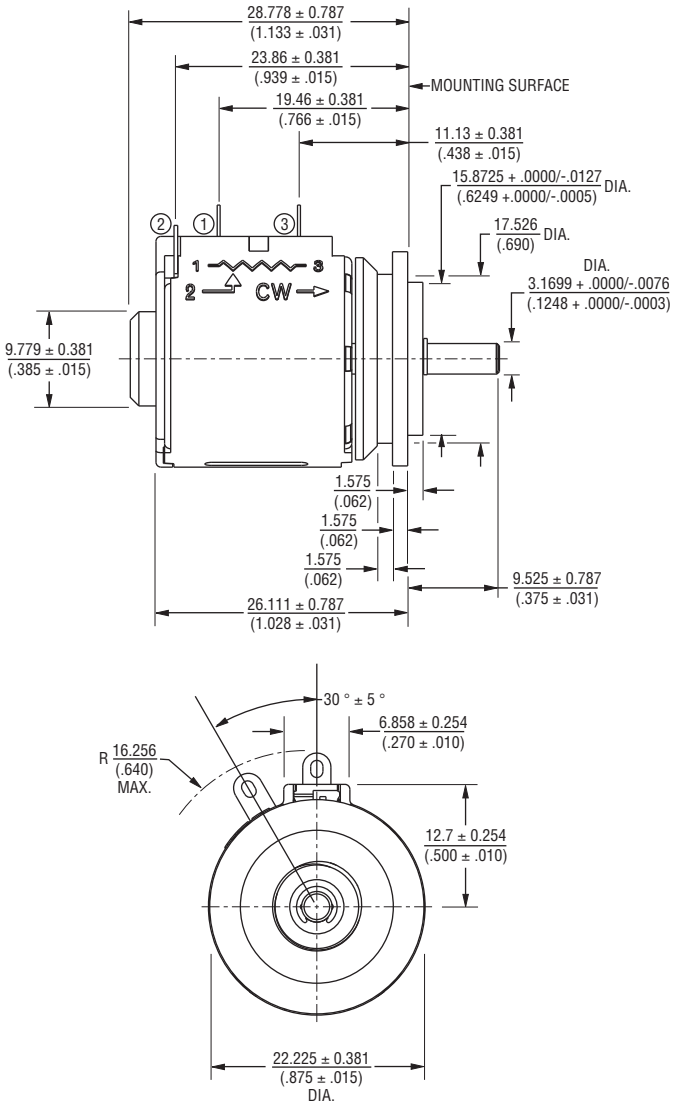


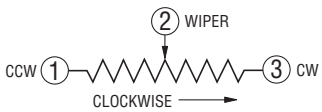
TOLERANCES: EXCEPT WHERE NOTED

DECIMALS: .XX ± .50 (.02) .XXX ± .127 (.005) .XXXX ± .0127 (.0005)

DIMENSIONS: MM (IN)

Single Gang, Servo Mount, Dual Ball Bearing

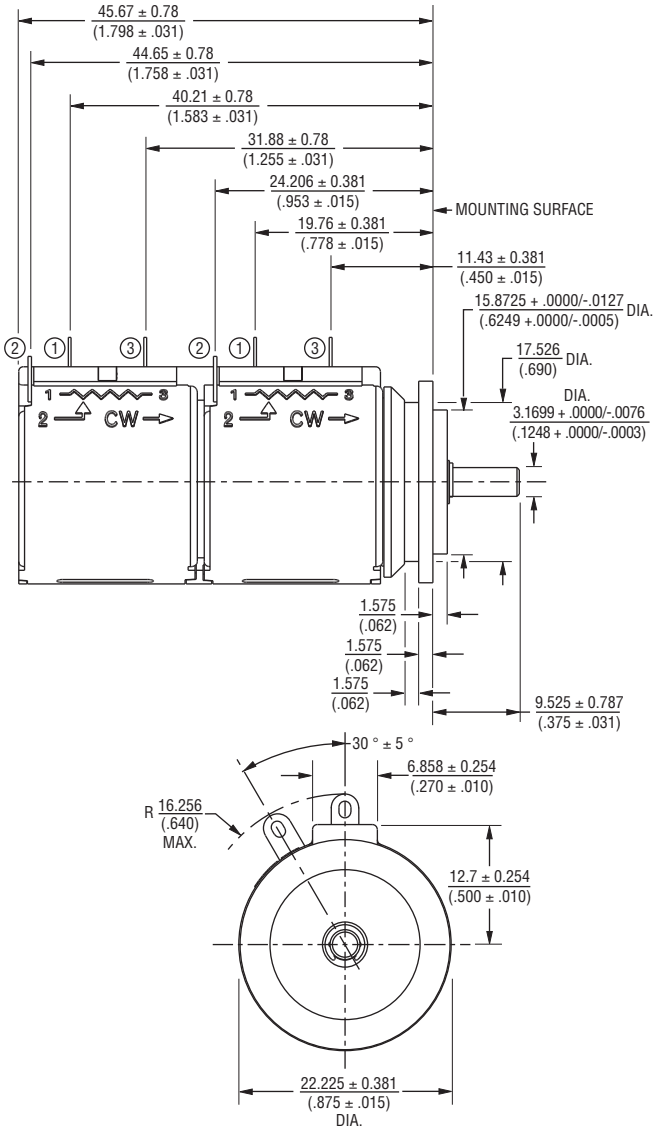


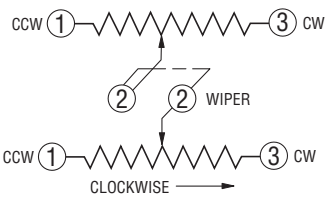


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Product Dimensions

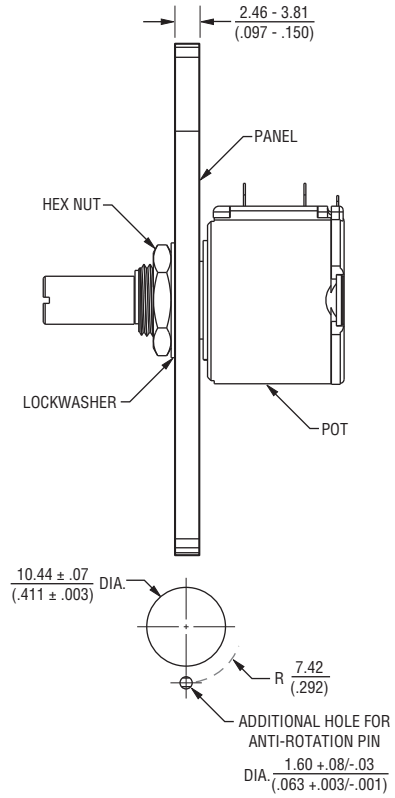
Dual Gang, Servo Mount





Panel Thickness Dimensions

(For Bushing Mount Only)



Anti-rotation pin hole is shown at six o'clock position for reference only. The actual location is determined by the customer's application. Refer to the front view of the potentiometer to see the location of the optional A/R pin.

Panel thickness and hole diameters are recommended for best fit. However, customers may adjust the dimensions to suit their specific application.

DIMENSIONS: MM (INCHES) TOLERANCES: ± 0.127 (.005)

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How To Order



MODEL DESIGNATOR	
Code	**Description**
3549	10-Turn

ELEMENT TYPE	
Code	**Description**
H	Hybritron®
S	Wirewound

NO. OF SECTIONS	
Code	**Description**
1	Single
2	Dual

ANTI-ROTATION LUG	
Code	**Description**
A	None
B	180 °

* Anti-rotation lug is not available for servo mount versions.

INDEPENDENT LINEARITY	
Code	**Description**
A	0.20 %
B	0.10 %

RESISTANCE**		
Code	**Element Type**	**Resolution (%)**
102 (1K ohms)	Hybritron®	—
202 (2K ohms)	Hybritron®	—
502 (5K ohms)	Hybritron®	—
103 (10K ohms)	Hybritron®	—
203 (20K ohms)	Hybritron®	—
503 (50K ohms)	Hybritron®	—
104 (100K ohms)	Hybritron®	—
101 (100 ohms)	Wirewound	0.055
201 (200 ohms)	Wirewound	0.042
501 (500 ohms)	Wirewound	0.031
102 (1K ohms)	Wirewound	0.027
202 (2K ohms)	Wirewound	0.021
502 (5K ohms)	Wirewound	0.016
103 (10K ohms)	Wirewound	0.019
203 (20K ohms)	Wirewound	0.014
503 (50K ohms)	Wirewound	0.011
104 (100K ohms)	Wirewound	0.008

** For Single gang, use only first three digits.
For Dual gang, use six digits separated by a "/".

BUSHING MOUNT						
Code	**Shaft FMS**	**Shaft Dia.**	**Shaft Material**	**Bushing Dia.**	**Bushing Material**	**Slip Clutch**
A	13/16 "	1/4 "	Nickel Plated Brass	3/8 "	Brass	N/A
B	20.6 mm	6 mm	Nickel Plated Brass	9 mm	Brass	N/A
C	13/16 "	1/4 "	Stainless Steel	3/8 "	Bronze	N/A
D	20.6 mm	6 mm	Stainless Steel	9 mm	Bronze	N/A
G	13/16 "	1/4 "	Stainless Steel	3/8 "	Bronze	Yes***
H	20.6 mm	6 mm	Stainless Steel	9 mm	Bronze	Yes***

SERVO MOUNT				
Code	**Shaft FMS**	**Shaft Dia.**	**Shaft Material**	**Ball Bearings**
E	3/8 "	1/8 "	Stainless Steel	N/A
F	3/8 "	1/8 "	Stainless Steel	Front & Rear****

*** Not available in dual gang version.

**** Available in Hybritron® version only and limited to single section.

REV. 10/14

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