

BOURNS®

Features

- Bushing mount
- Optional AR pin feature
- Non-standard features and specifications available
- Gangable
- RoHS compliant*

3543/3545 - Precision Potentiometer

Electrical Characteristics ¹	3543 3-Turn	3545 5-Turn
Standard Resistance Range.....	20 to 50 K ohms	50 to 50 K ohms
Total Resistance Tolerance.....	±5 %	±5 %
Independent Linearity.....	±0.25 %	±0.25 %
Effective Electrical Angle.....	1080 ° +10 °, -0 °	1800 ° +10 °, -0 °
Absolute Minimum Resistance/.....	1 ohm or 0.1 % maximum	1 ohm or 0.1 % maximum
Minimum Voltage.....	(whichever is greater)	(whichever is greater)
Noise.....	100 ohms ENR maximum	100 ohms ENR maximum
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)		
Sea Level.....	1,000 VAC minimum	1,000 VAC minimum
Power Rating (Voltage Limited By Power Dissipation or		
224 VAC [3543] or 273 VAC [3545], Whichever Is Less)		
+70 °C.....	1 watt	1.5 watt
+125 °C.....	0 watt	0 watt
Insulation Resistance (500 VDC).....	1,000 megohms minimum	1,000 megohms minimum
Resolution.....	See recommended part nos.	See recommended part nos.

Environmental Characteristics¹

Operating Temperature Range.....	+1 °C to +125 °C	+1 °C to +125 °C
Storage Temperature Range.....	-55 °C to +125 °C	-55 °C to +125 °C
Temperature Coefficient Over		
Storage Temperature Range ²	±50 ppm/°C maximum/unit	±50 ppm/°C maximum/unit
Vibration.....	15 G	15 G
Wiper Bounce.....	0.1 millisecond maximum	0.1 millisecond maximum
Shock.....	50 G	50 G
Wiper Bounce.....	0.1 millisecond maximum	0.1 millisecond maximum
Load Life.....	1,000 hours, 1 watt	1,000 hours, 1.5 watts
Total Resistance Shift.....	±2 % maximum	±2 % maximum
Rotational Life (No Load).....	300,000 shaft revolutions	500,000 shaft revolutions
Total Resistance Shift.....	±5 % maximum	±5 % maximum
Moisture Resistance (MIL-STD-202, Method 103, Condition B)		
Total Resistance Shift.....	±2 % maximum	±2 % maximum
IP Rating.....	IP 40	IP 40

Mechanical Characteristics¹

Stop Strength.....	53 N-cm (75 oz.-in.) min.
Mechanical Angle.....	1080 ° +10 °, -0 ° (3543); 1800 ° +10 °, -0 ° (3545)
Torque (Starting & Running).....	0.35 N-cm (0.5 oz.-in.) max.
Mounting.....	170-200 N-cm (15-18 lb.-in.)
Shaft Runout.....	0.08 mm (0.003 in.) T.I.R.
Lateral Runout.....	0.13 mm (0.005 in.) T.I.R.
Shaft End Play.....	0.25 mm (0.010 in.) T.I.R.
Shaft Radial Play.....	0.08 mm (0.003 in.) T.I.R.
Pilot Diameter Runout.....	0.08 mm (0.003 in.) T.I.R.
Backlash.....	1.0 ° maximum
Weight.....	Approximately 21 gm
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
Marking.....	Manufacturer's name and part number, resistance value and tolerance, linearity tolerance, wiring diagram, and date code.
Ganging (Multiple Section Pots.).....	2 cups maximum
Hardware.....	One lockwasher (H-37-2) and one mounting nut (H-38-2) is shipped with each potentiometer.

¹At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

²Consult manufacturer for complete specification details.

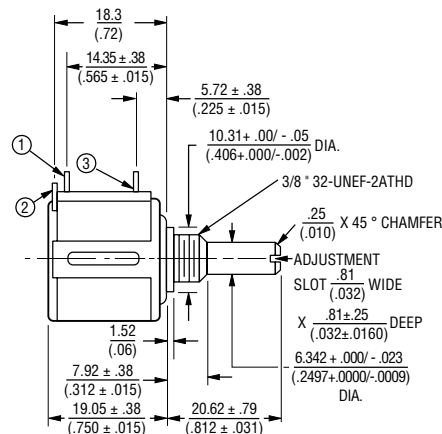
Recommended Part Numbers

Part Number	Resistance (Ω)	Resolution (%)
3543S-1-102L	1,000	.077
3543S-1-202L	2,000	.062
3543S-1-502L	5,000	.047
3543S-1-103L	10,000	.040

Part Number	Resistance (Ω)	Resolution (%)
3545S-1-102L	1,000	.043
3545S-1-202L	2,000	.044
3545S-1-502L	5,000	.038
3545S-1-103L	10,000	.029

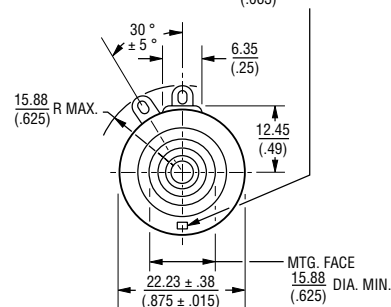
Product Dimensions

3543S-1/3545S-1

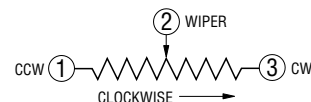


ADD .75 (19 MM) FOR ADDITIONAL CUPS.

OPTIONAL ANTIROTATION LUG
(-.91) 1.42 X .50 ON 7.4 RADIUS
(.056 X .02) (.29)
LENGTH 1.27 FROM MOUNTING SURFACE.
(SUGGESTED PANEL HOLE 1.6 DIA.)
(.063)



TOLERANCES: EXCEPT WHERE NOTED
DECIMALS: .XX ± .25 (.010), .XXX ± .13 (.005)
FRACTIONS: ±1/64
DIMENSIONS: MM (IN.)



BOLDFACE LISTINGS ARE IN STOCK AND READILY AVAILABLE THROUGH DISTRIBUTION.

FOR SERVO MOUNT VERSION AND OTHER OPTIONS CONSULT FACTORY.

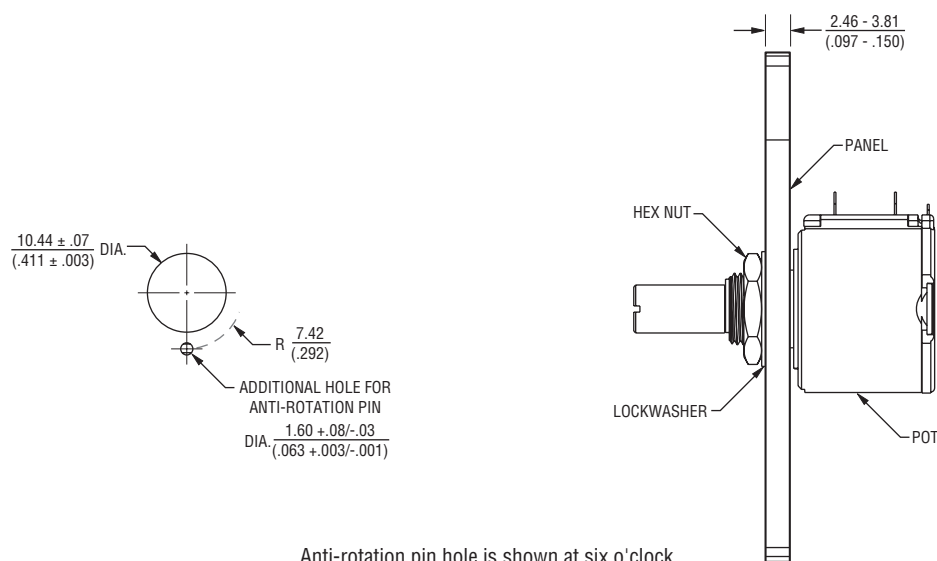
ROHS IDENTIFIER:
L = COMPLIANT

*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

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Panel Thickness Dimensions



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: $\frac{\text{MM}}{(\text{INCHES})}$ TOLERANCES: $\pm \frac{0.127}{(.005)}$

REV. 10/11

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Customers should verify actual device performance in their specific applications.

Mouser Electronics

Authorized Distributor

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Bourns:

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[102L](#) [3545S-1-501L](#) [3545S-1-203L](#) [3543S-1-503L](#) [3545S-1-503L](#) [3543S-1-201L](#) [3545S-1-102L](#) [3543S-1-101L](#)
[3543S-1-202L](#) [3543S-1-500L](#)