

Features

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

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/Minimum Voltage	1 ohm or 0.1 % maximum (whichever is greater)	1 ohm or 0.1 % maximum (whichever is greater)
Noise	100 ohms ENR maximum	100 ohms ENR maximum
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)	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)	1 watt	1.5 watt
Insulation Resistance (500 VDC)	1,000 megohms minimum	1,000 megohms minimum
Resolution	See recommended part nos.	See recommended part nos.

Environmental Characteristics ¹		
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 Characteristics ¹		
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.

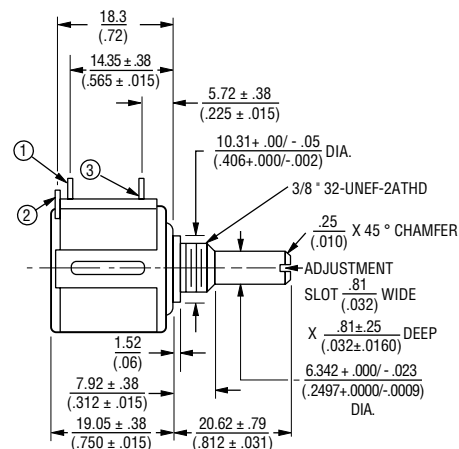
²Consult manufacturer for complete specification details.

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

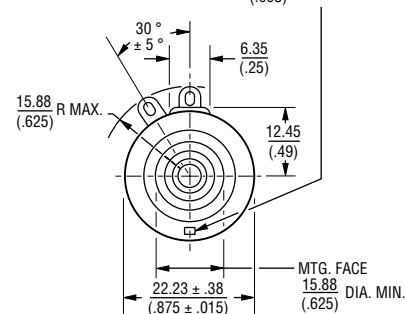
Part Number	Resistance (Ω)	Resolution (%)
3545S-1-102L	1,000	.043
3545S-1-202L	2,000	.044
3545S-1-502L	5,000	.038
3545S-1-103L	10,000	.029

3543S-1/3545S-1

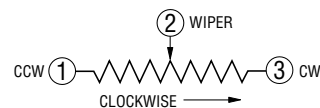


ADD .75 (19 MM) FOR ADDITIONAL CUPS.

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



TOLERANCES: EXCEPT WHERE NOTED
DECIMALS: .XX ± .25 (0.010), .XXX ± .13 (0.005)
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.

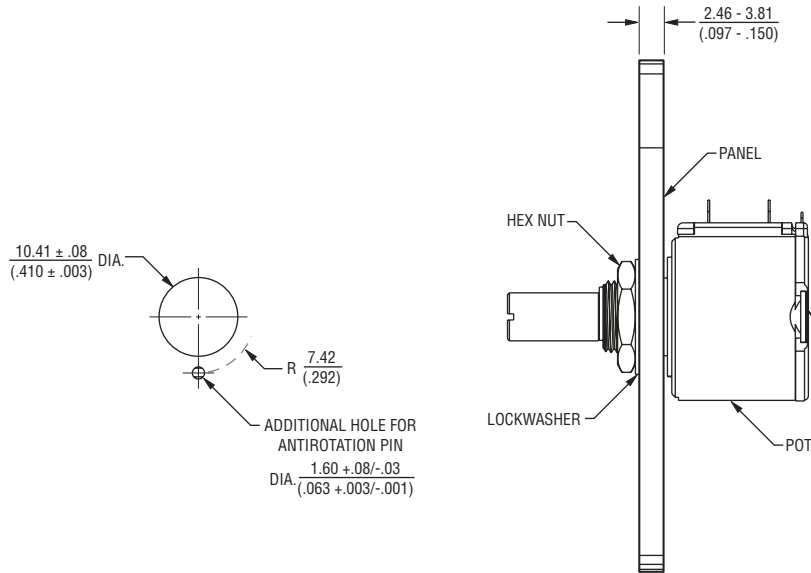
RoHS IDENTIFIER:
L = COMPLIANT
BLANK = NON-COMPLIANT

*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.

3543/3545 - Precision Potentiometer

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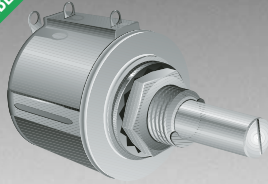
Panel Thickness Dimensions



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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

*ROHS COMPLIANT
VERSIONS
AVAILABLE



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Features

- Bushing mount
- Optional center tap and rear shaft extension
- Optional AR lug feature
- Gangable with common or concentric shafts
- High torque available

- Non-standard features and specifications available

3540/3541 - Precision Potentiometer

Electrical Characteristics¹ 3540 Wirewound Element 3541 Hybritron[®] Element

Standard Resistance Range	100 to 100 K ohms	1 K to 100 K ohms
Total Resistance Tolerance	±5 %	±10 %
Independent Linearity	±0.25 %	±0.25 %
Effective Electrical Angle	3600 ° +10 °, -0 °	3600 ° +10 °, -0 °
Absolute Minimum Resistance/	1 ohm or 0.1 % maximum	0.2 % maximum
Minimum Voltage	(whichever is greater)	
Noise/Output Smoothness	100 ohms ENR maximum	0.1 % 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 447 VAC, Whichever Is Less)		
+70 °C	2 watts	2 watts
+125 °C	0 watt	0 watt
Insulation Resistance (500 VDC)	1,000 megohms minimum	1,000 megohms minimum
Resolution	See recommended part nos.	Essentially infinite

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	±100 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, 2 watts	1,000 hours, 2 watts
Total Resistance Shift	±2 %	±5 %
Rotational Life (No Load)	1,000,000 shaft revolutions ²	5,000,000 shaft revolutions ²
Total Resistance Shift	±5 % maximum	±5 % maximum
Moisture Resistance (MIL-STD-202, Method 103, Condition B)		
Total Resistance Shift	±2 % maximum	±5 % maximum
IP Rating	IP 40	IP 40

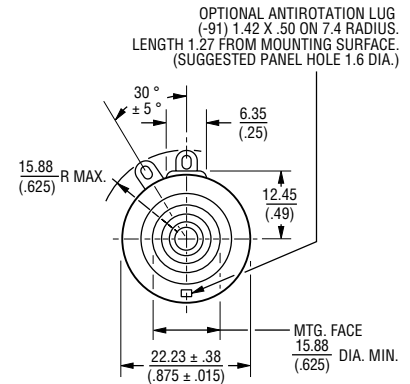
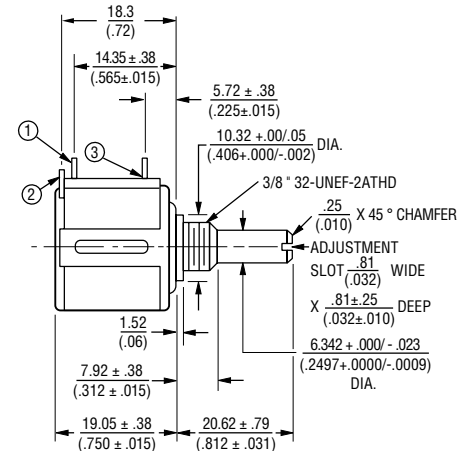
Mechanical Characteristics¹

Stop Strength	53 N-cm (75 oz.-in.) minimum
Mechanical Angle	3600 ° +10 °, -0 °
Torque (Starting & Running)	0.35 N-cm (0.5 oz.-in.) max.
Mounting	170-200 N-cm (15-18 lb.-in.) max.
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	0.30 mm (0.012 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.

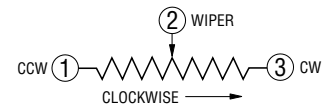
¹At room ambient: +25 °C nominal and 50 % relative humidity nominal, except as noted.

²Consult manufacturer for complete specification details.

3540S-1/3541H-1



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



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Recommended Part Numbers

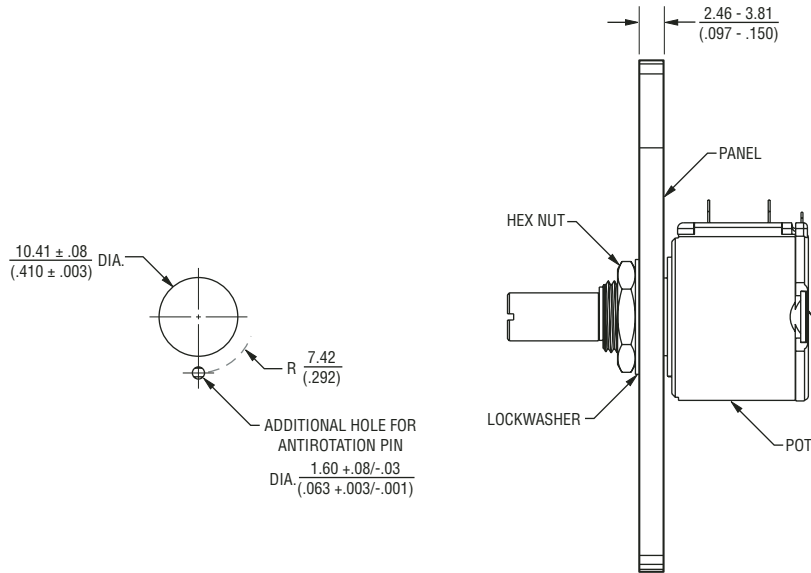
Part Number	Resistance (Ω)	Resolution (%)
3540S-1-201L	200	.042
3540S-1-501L	500	.031
3540S-1-102L	1,000	.027
3540S-1-202L	2,000	.021
3540S-1-502L	5,000	.021
3540S-1-103L	10,000	.019
3540S-1-203L	20,000	.014
3540S-1-503L	50,000	.011
3540S-1-104L	100,000	.008

Part Number	Resistance (Ω)
3541H-1-102L	1,000
3541H-1-202L	2,000
3541H-1-502L	5,000
3541H-1-103L	10,000
3541H-1-203L	20,000
3541H-1-503L	50,000
3541H-1-104L	100,000

3540/3541 - Precision Potentiometer

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Panel Thickness Dimensions



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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

REV. 05/07

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