



Features

- Miniature package for design flexibility
- Long operating life
- Conductive plastic element
- Bushing or PC board mount
- Quadrature output
- RoHS compliant versions available*

3315 - 9 mm Square Sealed Incremental Encoder

Electrical Characteristics

Output	2-bit gray code, Channel A leads Channel B electrically turning clockwise (CW)
Closed Circuit Resistance	5 ohms maximum
Contact Rating	TTL compatible loads
Insulation Resistance (500 VDC).....	1,000 megohms minimum
Dielectric Withstanding Voltage	
Sea Level	900 VAC minimum
Electrical Travel.....	Continuous
Contact Bounce	5 milliseconds maximum
RPM (Operating)	120 maximum

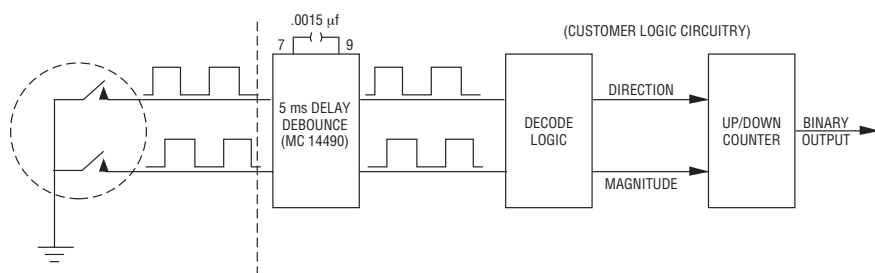
Environmental Characteristics

Operating Temperature Range	-40 °C to +125 °C (-40 °F to +257 °F)
Storage Temperature Range.....	-55 °C to +125 °C (-67 °F to +257 °F)
Humidity	MIL-STD-202, Method 103B, Condition B
Vibration	30 G
Contact Bounce	5.0 millisecond maximum
Shock	100 G
Contact Bounce	5.0 millisecond maximum
Rotational Life	100,000 cycles @ 6 PPR 25,000 cycles @ 16 PPR
IP Rating	IP 67

Mechanical Characteristics

Mechanical Angle	360 ° Continuous
Running Torque	3.53 N-cm (5 oz.-in.) maximum
Mounting Torque	
Plastic Bushing.....	45.19 N-cm (4.0 lb.-in.) maximum
Metal Bushing	79 N-cm (7.0 lb.-in.) maximum
Weight	4.5 gm (0.15 oz.)
Terminals	Solderable pins
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	For recommended wash processes, please refer to http://www.bourns.com/pdfs/sldc1en.pdf
Marking.....	Manufacturer's trademark, part number, and date code
Hardware	One lockwasher and one mounting nut are shipped with each encoder, except where noted in the part number.

Suggested Incremental Control Diagram



Quadrature Output Table

	Clockwise →
Channel A	
Channel B	
Channel C	

3315 - 9 mm Square Sealed Incremental Encoder

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Part Numbering System

3315 Y - 0 0 1 - 006 L

Model Number Designator

3315 = 9 mm Encoder

Terminal Style Designator

C = In-line Straight Terminals Side Exit
R = In-line Terminals Rear Exit
P = 5.08 mm x 2.54 mm Triangular Pattern Rear Exit
Y = 5.08 mm x 5.08 mm Triangular Pattern Rear Exit

Shaft End Designator

0 = Shaft End Slotted
1 = Shaft End Flatted

Shaft Length Designator

0 = 12.7 mm FMS Long Plastic Shaft (Available w/bushing only)
1 = 19.05 mm FMS Long Plastic Shaft (Available w/bushing only)
2 = 5.59 mm FMS (Bushingless version only)

Bushing Designator

1 = 6.35 mm x 6.35 mm Plastic
2 = 6.35 mm x 6.35 mm Ni Plated Brass
5 = Bushingless (Board Level)

Pulses per Revolution Code

006 = 6 PPR
016 = 16 PPR

Terminals

L = RoHS compliant (100 % tin plated finish)
Blank = Standard (tin/lead plated finish)

3315 - 9 mm Square Sealed Incremental Encoder

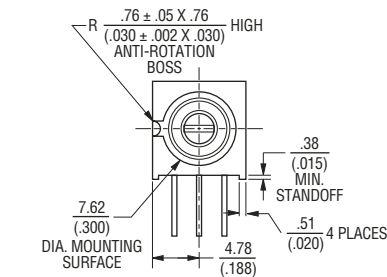
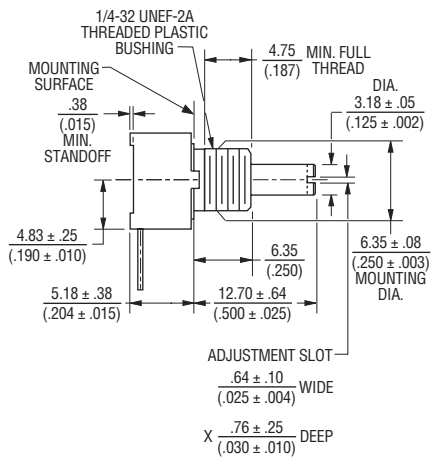
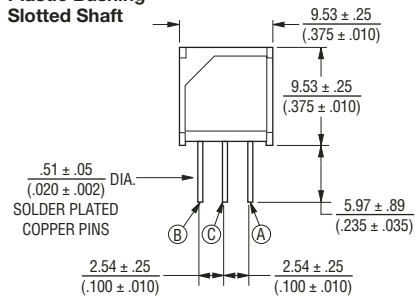
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Product Dimensions

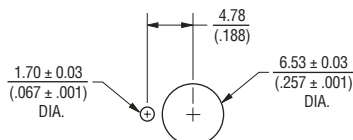
COMMON DIMENSIONS

3315-001

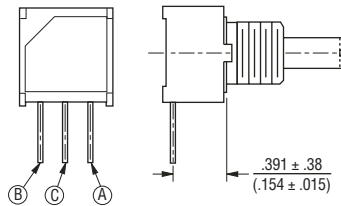
Plastic Bushing
Slotted Shaft



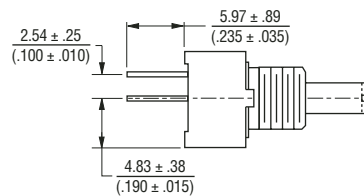
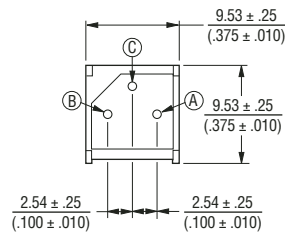
MOUNTING HOLE PATTERN



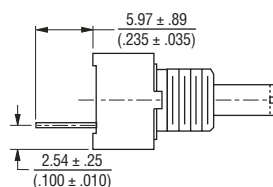
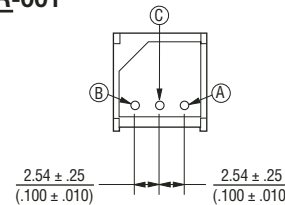
3315C-001



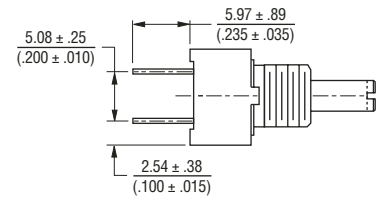
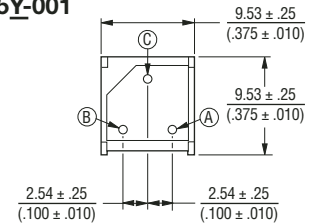
3315P-001



3315R-001



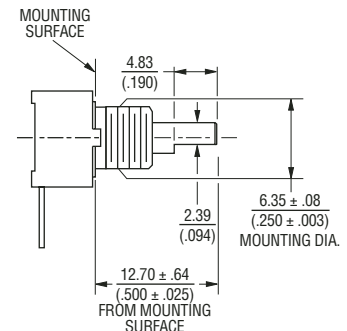
3315Y-001



COMMON DIMENSIONS

3315C-101

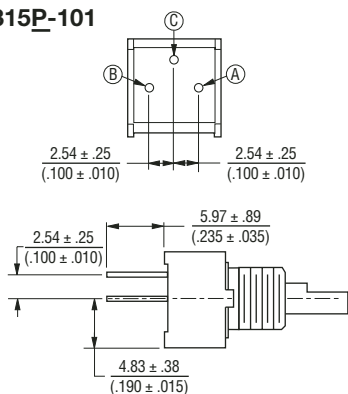
Plastic Flatted Shaft



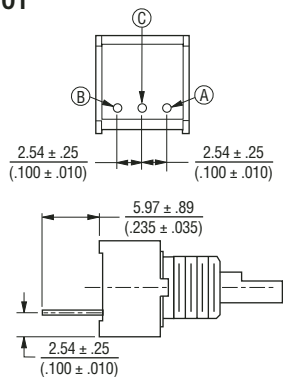
DIMENSIONS: $\frac{MM}{(IN.)}$

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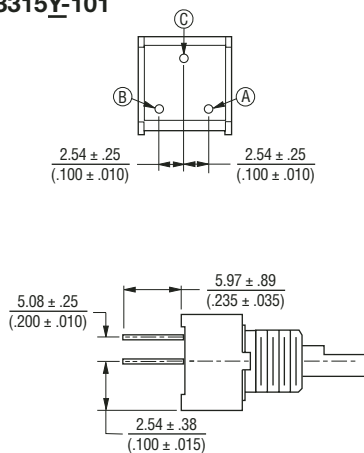
3315P-101



3315R-101

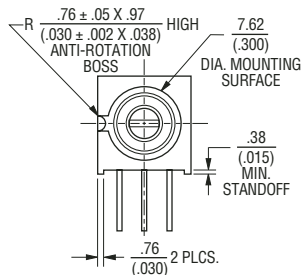
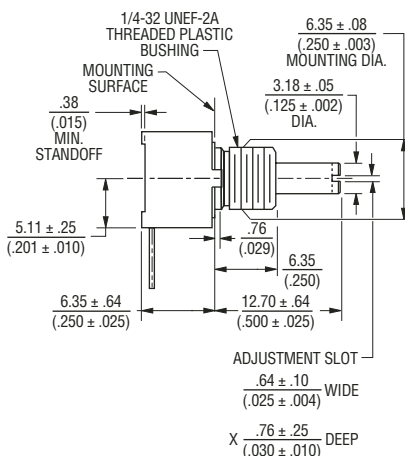


3315Y-101

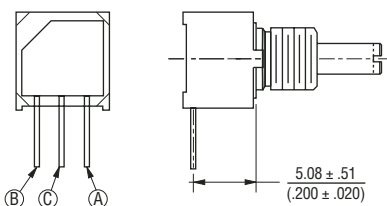


Technical drawing of a component with dimensions and callouts:

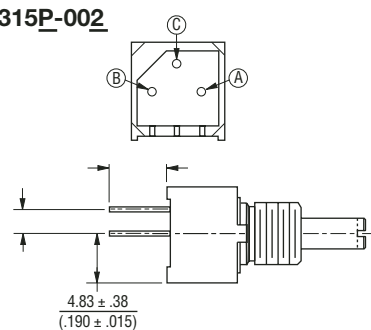
- Top horizontal dimension: $9.53 \pm .25$ ($.375 \pm .010$)
- Top vertical dimension: $9.53 \pm .38$ ($.375 \pm .015$)
- Bottom horizontal dimension: $2.54 \pm .25$ ($.100 \pm .010$)
- Bottom vertical dimension: $5.97 \pm .89$ ($.235 \pm .035$)
- Left vertical dimension: $.51 \pm .05$ ($.020 \pm .002$)
- Callout 1: $2.54 \pm .25$ ($.100 \pm .010$)
- Callout 2: $2.54 \pm .25$ ($.100 \pm .010$)
- Callout 3: $2.54 \pm .25$ ($.100 \pm .010$)
- Text: SOLDER PLATED COPPER PINS
- Text: DIA.



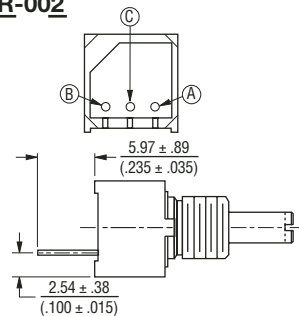
3315C-002



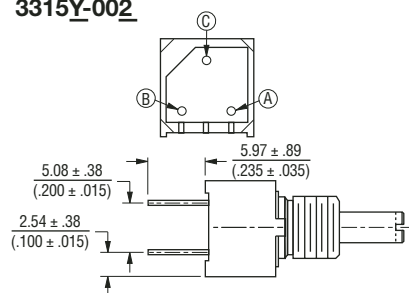
3315P-002



3315R-002



3315Y-002



DIMENSIONS: $\frac{\text{MM}}{(\text{IN.})}$

Specifications are subject to change without notice. (B) (C) (A)
Customers should verify actual device performance in their specific applications.

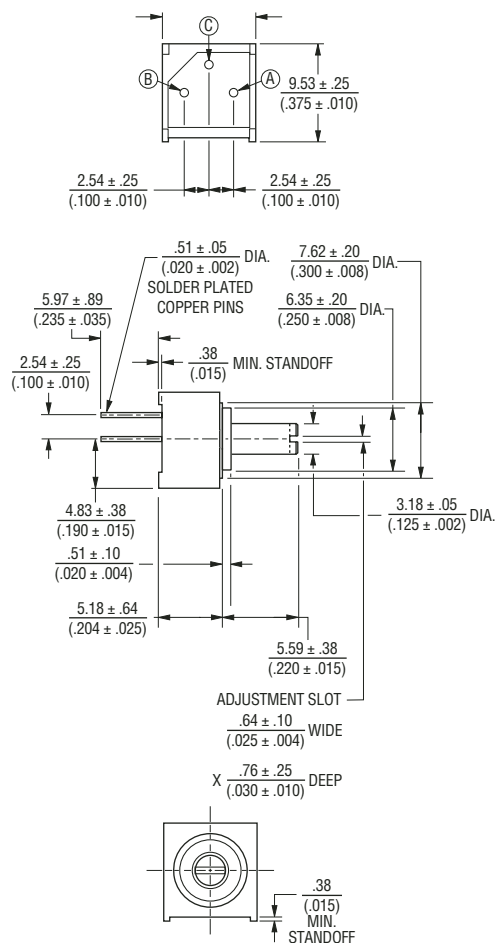
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Product Dimensions

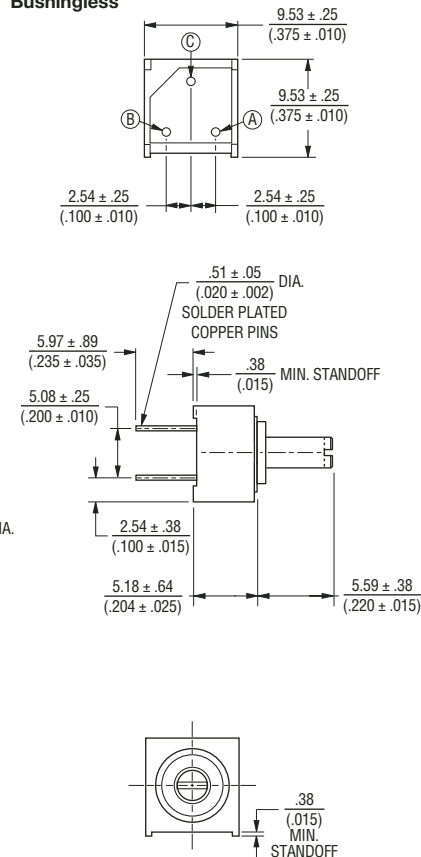
3315P-025

Bushingless



3315Y-025

Bushingless



DIMENSIONS: $\frac{\text{MM}}{(\text{IN.})}$