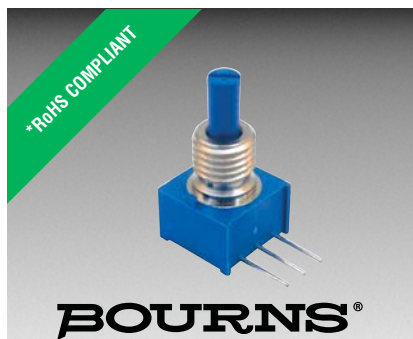




## Features

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



## 3315 - 9 mm Square Sealed Incremental Encoder

### Electrical Characteristics

|                                       |                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------|
| Output.....                           | 2-bit quadrature 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                                                                          |

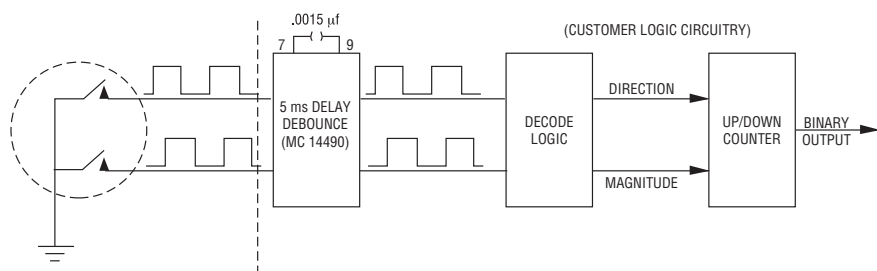
### Environmental Characteristics

|                                  |                                                  |
|----------------------------------|--------------------------------------------------|
| 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<br>25,000 cycles @ 16 PPR |
| IP Rating.....                   | IP 67                                            |

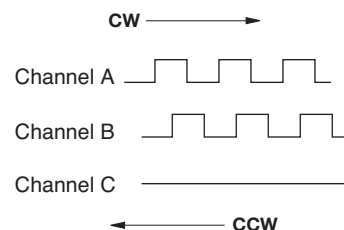
### Mechanical Characteristics

|                        |                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 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 <a href="http://www.bourns.com/pdfs/sldclen.pdf">http://www.bourns.com/pdfs/sldclen.pdf</a> |
| 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



## 3315 - 9 mm Square Sealed Incremental Encoder

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### How to Order

**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                                                   |       |       |       |       |       |       |
| RoHS Identifier                                                | _____ | _____ | _____ | _____ | _____ | _____ |
| L = Compliant                                                  |       |       |       |       |       |       |

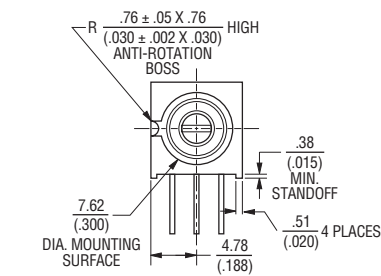
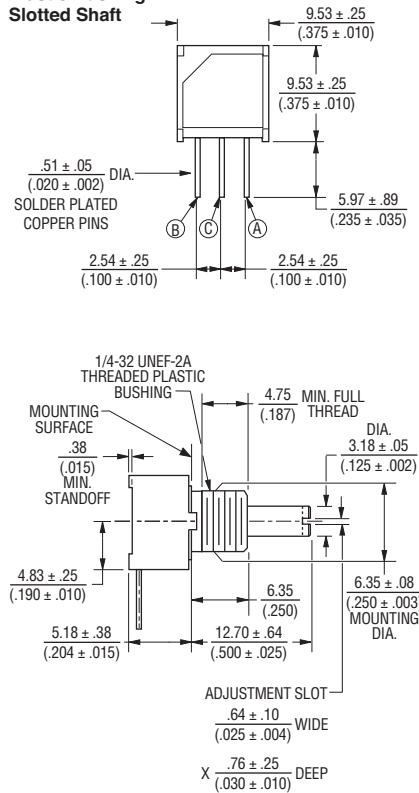
# 3315 - 9 mm Square Sealed Incremental Encoder

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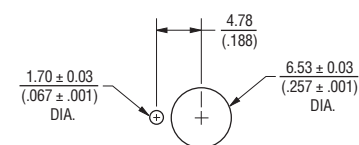
## Product Dimensions

### COMMON DIMENSIONS 3315-001

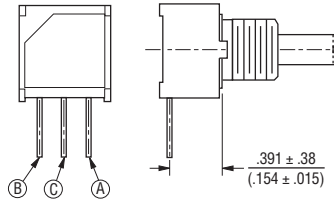
Plastic Bushing  
Slotted Shaft



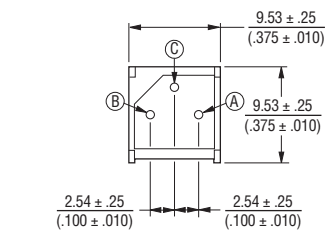
### MOUNTING HOLE PATTERN



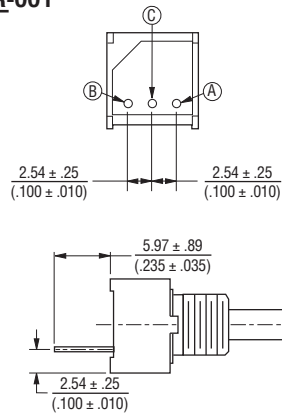
### 3315C-001



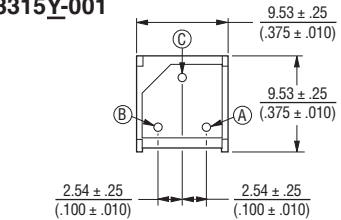
### 3315P-001



### 3315R-001

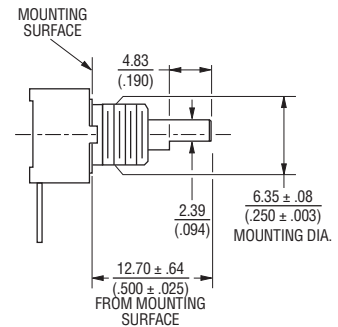


### 3315Y-001



### COMMON DIMENSIONS 3315C-101

Plastic Flatted Shaft



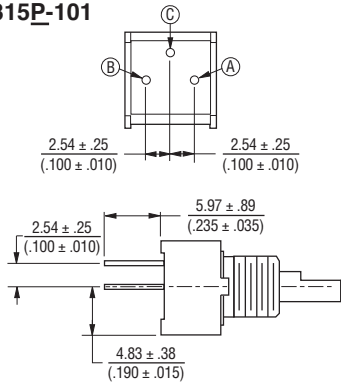
DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

# 3315 - 9 mm Square Sealed Incremental Encoder

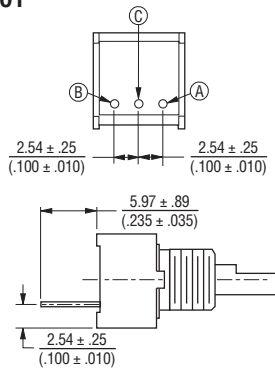
**BOURNS®**

## Product Dimensions

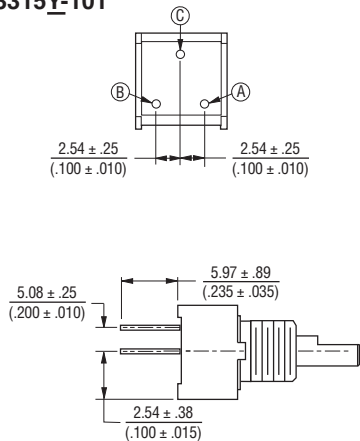
### 3315P-101



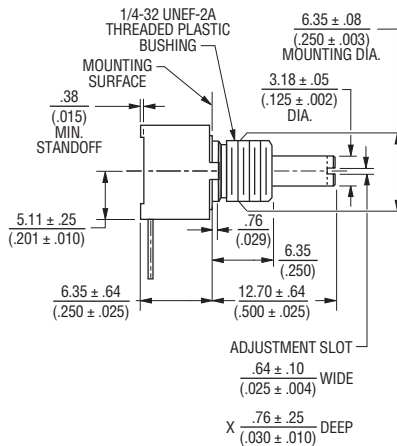
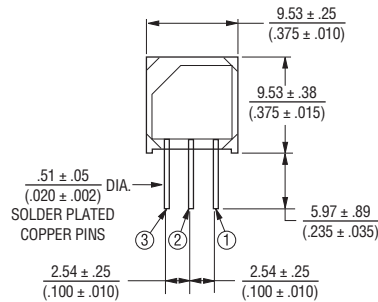
### 3315R-101



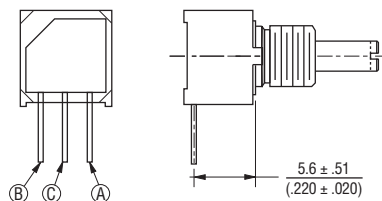
### 3315Y-101



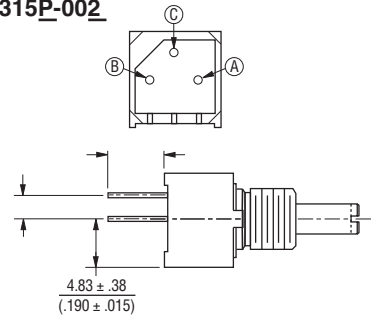
### COMMON DIMENSIONS 3315-002 Metal Bushing



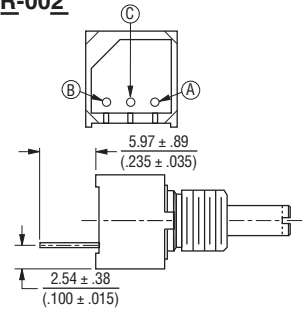
### 3315C-002



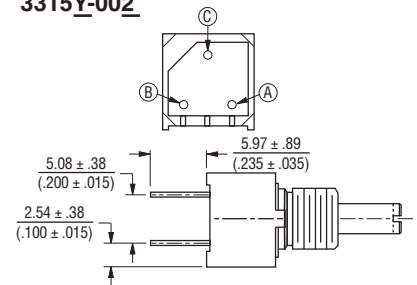
### 3315P-002



### 3315R-002



### 3315Y-002



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

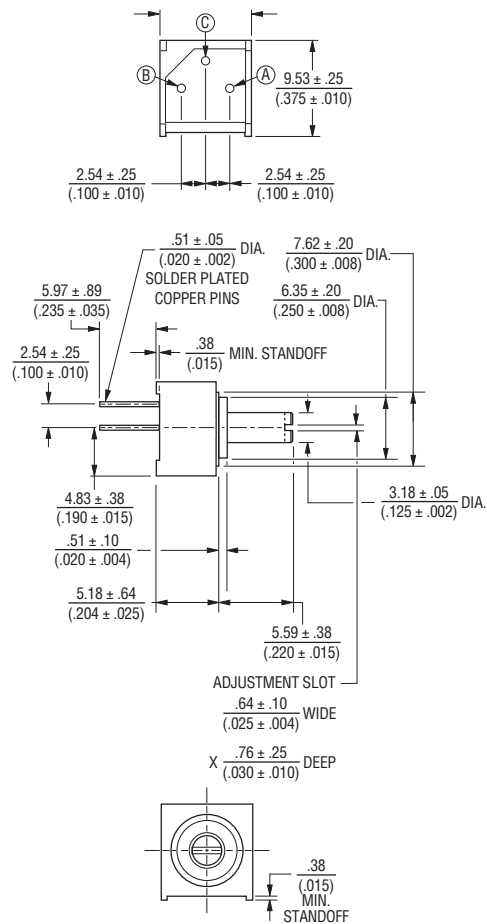
# 3315 - 9 mm Square Sealed Incremental Encoder

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## Product Dimensions

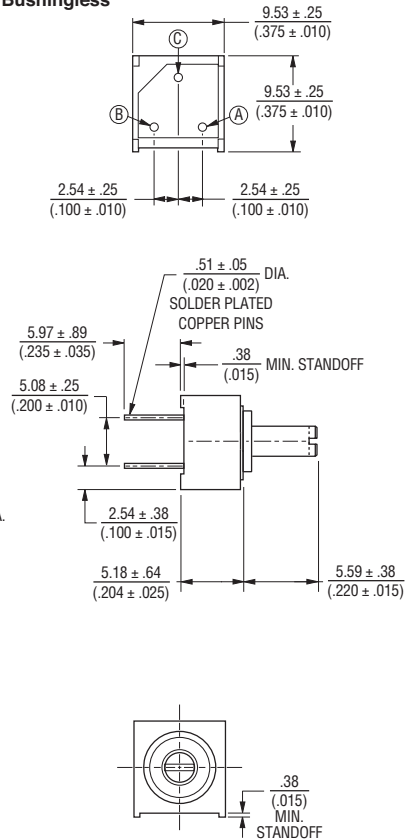
### 3315P-025

Bushingless



### 3315Y-025

Bushingless



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

REV. 10/12

Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

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