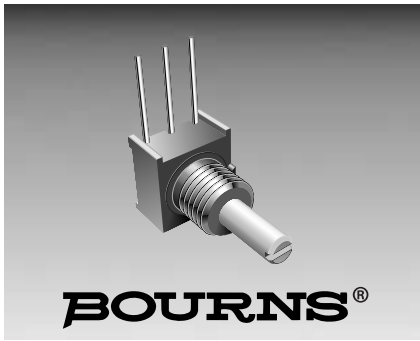




## Features

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

## 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                                                                    |

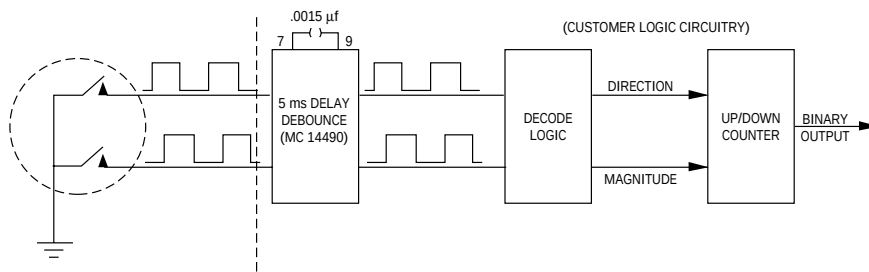
### Environmental Characteristics

|                                   |                                                  |
|-----------------------------------|--------------------------------------------------|
| Operating Temperature Range ..... | +1 °C to +125 °C (+33 °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 ..... | 5 seconds at 360 °C (680 °F) maximum                                                                      |
| 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

|           |                    |
|-----------|--------------------|
|           | <b>Clockwise</b> → |
| 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

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

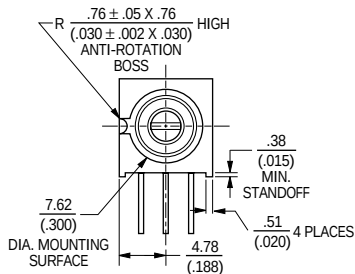
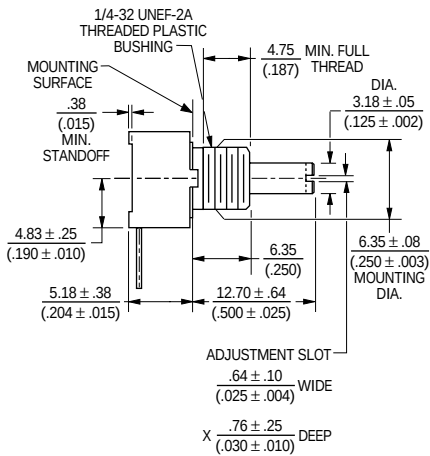
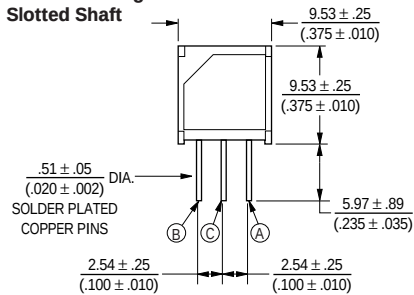
# 3315 - 9 mm Square Sealed Incremental Encoder

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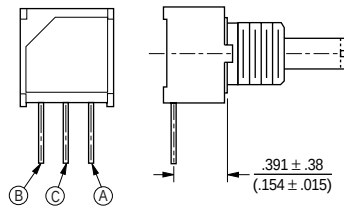
## Product Dimensions

### COMMON DIMENSIONS

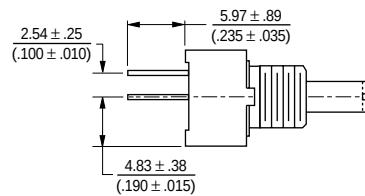
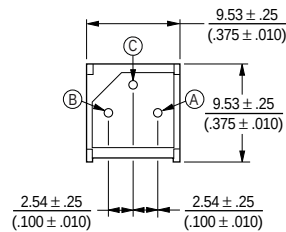
#### 3315-001 Plastic Bushing Slotted Shaft



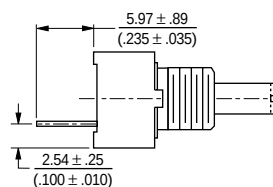
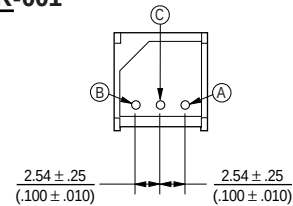
#### 3315C-001



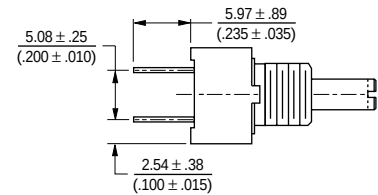
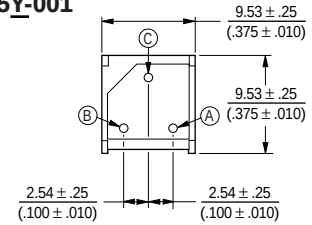
#### 3315P-001



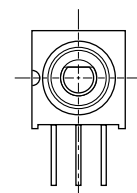
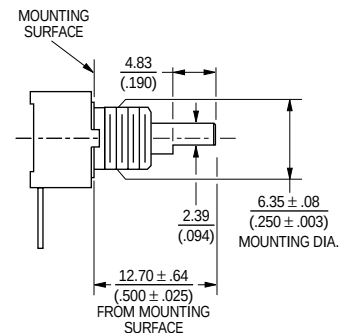
#### 3315R-001



#### 3315Y-001



### COMMON DIMENSIONS 3315C-101 Plastic Flatted Shaft



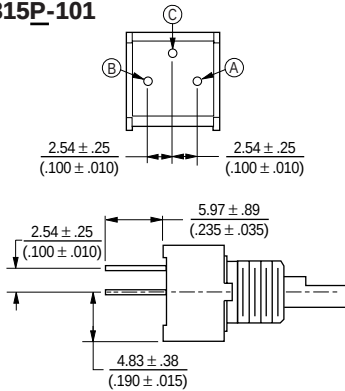
DIMENSIONS: MM  
(IN.)

# 3315 - 9 mm Square Sealed Incremental Encoder

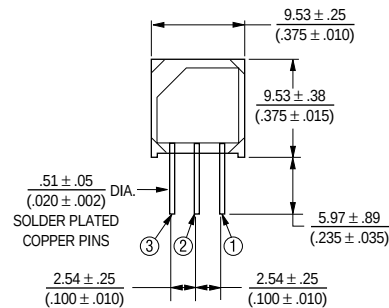
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## Product Dimensions

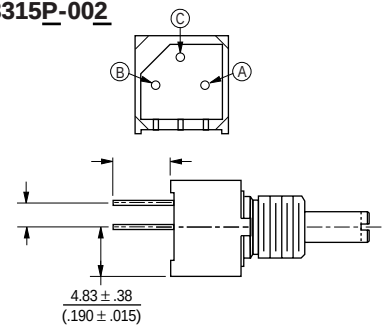
### 3315P-101



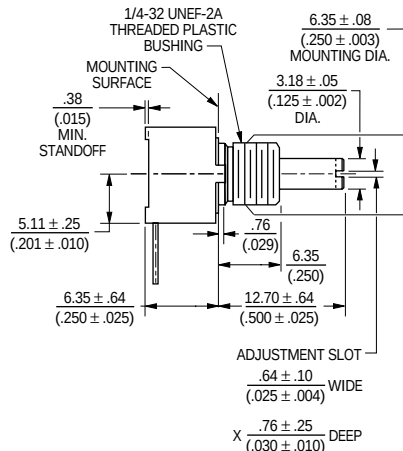
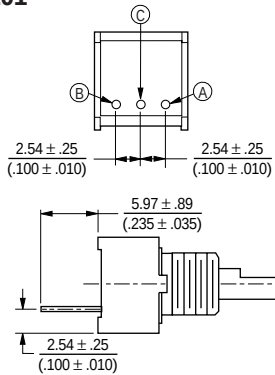
### COMMON DIMENSIONS 3315-002 Metal Bushing



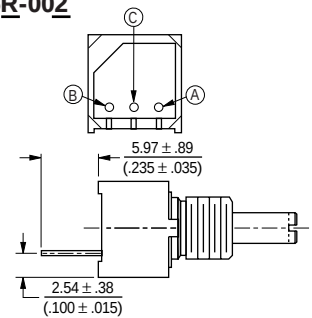
### 3315P-002



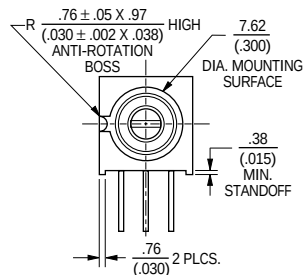
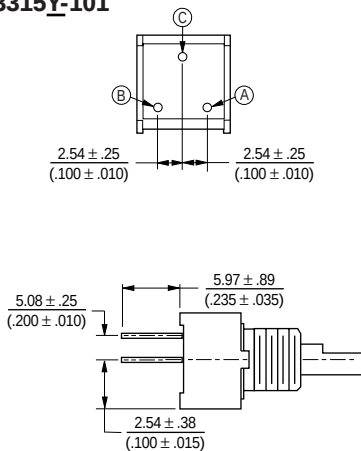
### 3315R-101



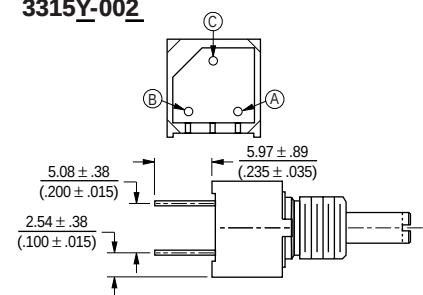
### 3315R-002



### 3315Y-101

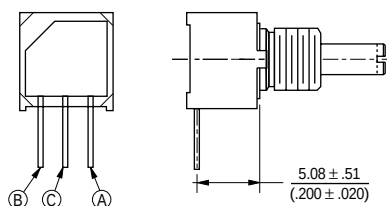


### 3315Y-002



DIMENSIONS: MM (IN.)

### 3315C-002



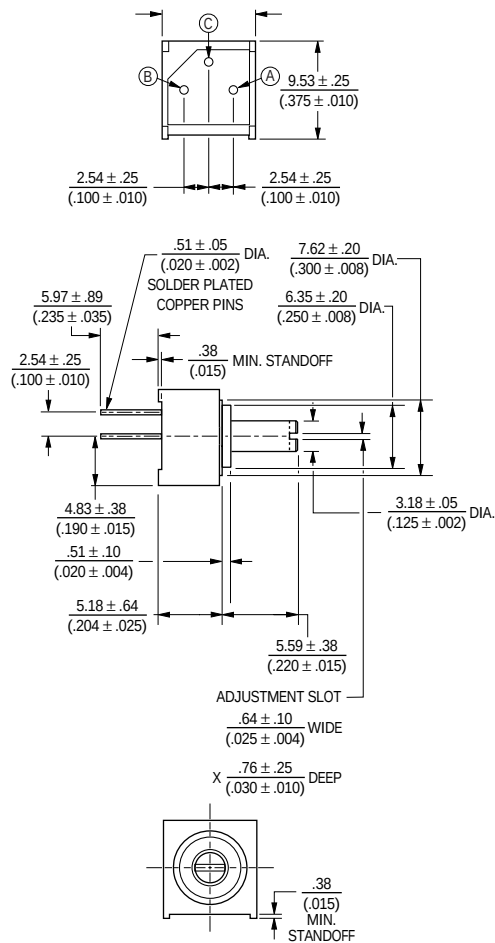
# 3315 - 9 mm Square Sealed Incremental Encoder

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## Product Dimensions

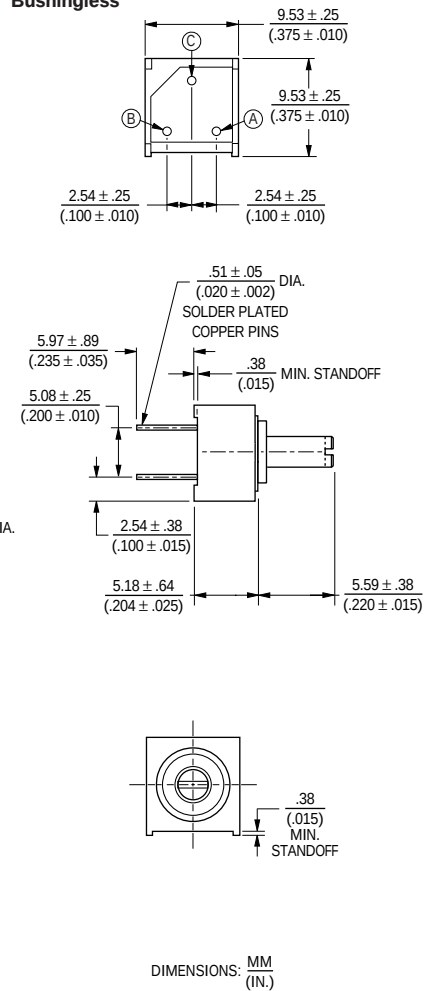
### 3315P-025

Bushingless



### 3315Y-025

Bushingless



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