3315 - 9 mm Square Sealed Incremental Encoder

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

**Electrical Characteristics**
- Output: 2-bit gray code, Channel A leads Channel B electrically turning clockwise (CW)
- Closed Circuit Resistance: 5 ohms maximum
- Insulation Resistance (500 VDC): 1,000 megohms minimum
- Dielectric Withstanding Voltage: 900 VAC minimum
- Sea Level: Continuous
- RPM (Operating): 120 maximum
- Contact Bounce: 5.0 milliseconds 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)
- Vibration: 30 G
- Contact Bounce: 5.0 millisecond maximum
- Rotational Life: 100,000 cycles @ 6 PPR
- Contact Bounce: 5.0 millisecond maximum
- 25,000 cycles @ 16 PPR
- IP Rating: 67

**Mechanical Characteristics**
- Mechanical Angle: Continuous
- Running Torque: 3.53 N-cm (5 oz.-in.) maximum
- Mounting Torque: 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: 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
- 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**

<table>
<thead>
<tr>
<th>Channel</th>
<th>Clockwise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel A</td>
<td></td>
</tr>
<tr>
<td>Channel B</td>
<td></td>
</tr>
<tr>
<td>Channel C</td>
<td></td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.
### Part Numbering System

<table>
<thead>
<tr>
<th>Model Number Designator</th>
<th>3315 = 9 mm Encoder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal Style Designator</td>
<td>C = In-line Straight Terminals Side Exit</td>
</tr>
<tr>
<td></td>
<td>R = In-line Terminals Rear Exit</td>
</tr>
<tr>
<td></td>
<td>P = 5.08 mm x 2.54 mm Triangular Pattern Rear Exit</td>
</tr>
<tr>
<td></td>
<td>Y = 5.08 mm x 5.08 mm Triangular Pattern Rear Exit</td>
</tr>
<tr>
<td>Shaft End Designator</td>
<td>0 = Shaft End Slotted</td>
</tr>
<tr>
<td></td>
<td>1 = Shaft End Flatted</td>
</tr>
<tr>
<td>Shaft Length Designator</td>
<td>0 = 12.7 mm FMS Long Plastic Shaft (Available w/bushing only)</td>
</tr>
<tr>
<td></td>
<td>1 = 19.05 mm FMS Long Plastic Shaft (Available w/bushing only)</td>
</tr>
<tr>
<td></td>
<td>2 = 5.59 mm FMS (Bushless version only)</td>
</tr>
<tr>
<td>Bushing Designator</td>
<td>1 = 6.35 mm x 6.35 mm Plastic</td>
</tr>
<tr>
<td></td>
<td>2 = 6.35 mm x 8.35 mm Ni Plated Brass</td>
</tr>
<tr>
<td></td>
<td>5 = Bushingless (Board Level)</td>
</tr>
<tr>
<td>Pulses per Revolution Code</td>
<td>006 = 6 PPR</td>
</tr>
<tr>
<td></td>
<td>016 = 16 PPR</td>
</tr>
<tr>
<td>RoHS Identifier</td>
<td>L = Compliant</td>
</tr>
<tr>
<td></td>
<td>Blank = Non-Compliant</td>
</tr>
</tbody>
</table>

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Product Dimensions

3315-002

Metal Bushing

Common Dimensions

5.97 ± .89
(.235 ± .035)

2.54 ± .25
(.100 ± .010)

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Product Dimensions

3315P-025
Bushingless

3315Y-025
Bushingless

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