**MODEL 260** — INCREMENTAL ENCODER

**FEATURES**
- Low Profile 1.19"  
- Up to 12 Pole Commutation  
- Available in Thru-Bore and Hollow Bore (Blind)  
- Simple, Innovative Flexible Mounting System  
- Incorporates Opto-ASIC Technology  
- CE Marking Available

With a bore up to 0.625" and a low profile, the Model 260 Accu-Coder™ is the perfect solution for many machine and motor applications. Available in both hollow bore and a complete thru-bore, the Model 260 uses EPC’s innovative anti-backlash mounting system, allowing simple, reliable, and precise encoder attachment. Unlike traditional kit or modular encoder designs, its integral bearing set provides stable and consistent operation without concerns for axial or radial shaft runout. For brushless servo motor applications, the Model 260 can be specified with three 120° electrical phase tracks to provide up to 12 pole commutation feedback. The optional extended temperature capability allows servo motors to operate at higher electrical outputs and duty cycles. And of course, the Model 260 uses EPC’s pioneering Opto-ASIC design, so you’ll always get a clean, reliable signal.

**COMMON APPLICATIONS**
- Brushless Servo Motor Commutation, Robotics, Motor-Mounted Feedback, Assembly Machines, Digital Plotters, High Power Motors

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**MODEL 260 ORDERING GUIDE**

Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.

<table>
<thead>
<tr>
<th>MODEL 260 Ultra Versatile Commutated Thru-Bore</th>
<th>N</th>
<th>T</th>
<th>01</th>
<th>S</th>
<th>0256</th>
<th>Q</th>
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<th>S</th>
<th>SF</th>
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<tr>
<td>BORE SIZE</td>
<td>01</td>
<td>1/4&quot;, 0.250&quot;</td>
<td>02</td>
<td>3/8&quot;, 0.375&quot;</td>
<td>03</td>
<td>7/16&quot;, 0.4375&quot;</td>
<td>04</td>
<td>1/2&quot;, 0.500&quot;</td>
<td>05</td>
<td>5/8&quot;, 0.625&quot;</td>
<td>06</td>
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<td>CYCLES PER REVOLUTION</td>
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<td>SMJ: 5-pin Body Mount M12</td>
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<td>SMK: 8-pin Body Mount M12 Standard Wiring</td>
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<td>SM2: 8-pin Body Mount M12 Optional Wiring</td>
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<td>SMH: 10-pin Body Mount Bayonet</td>
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<td>SEALING</td>
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<td>MOUNTING</td>
<td>SD: 1.575&quot; (40 mm) BC Flex Mount</td>
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<td>SF: 1.811&quot; (46 mm) BC Flex Mount</td>
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<td>XF: 2.250&quot; BC 3-point Flex Mount</td>
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<td>NF: 2.375&quot; BC 3-point Flex Mount</td>
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<td>FA: 2.12&quot; to 3.62&quot; BC Flex Arm</td>
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<td>FB: 3.00&quot; to 6.26&quot; BC Flex Arm</td>
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</tbody>
</table>

**NOTES:**
1. Not available in all configurations. Contact Customer Service for availability.  
2. Contact Customer Service for additional options not shown.  
3. 5 to 16 VDC supply only for H option; 5 VDC supply only for V option. Contact Customer Service for availability and additional information.  
5. Line Driver not available with 5-pin Body Mount M12 connector type.  
6. For mating connectors, cables, and cordsets see Accessories at encoder.com. For Connector Pin Configuration Diagrams, see Technical Information or see Connector Pin Configuration Diagrams at encoder.com.  
7. For non-standard cable lengths add a forward slash (/) plus cable length expressed in feet. Example: S/6 = 6 feet of cable. Frequency above 300 kHz standard cable lengths only.  
8. 5-pin Body Mount M12 Connector Type not available with commutation or with V temperature option.  
10. Not available with commutation.  
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1-800-366-5412 • www.encoder.com • sales@encoder.com

Rev. 10/17/19
MODEL 260 SPECIFICATIONS

**Electrical**
- **Input Voltage**
  - 4.75 to 28 VDC for temperatures up to 70°C
  - 5 to 16 VDC for 0° to 100°C operating temperature
  - 5 VDC for 0° to 120°C operating temperature
- **Input Current**
  - 130 mA max (< 100 mA typical) with no output load
- **Output Format**
  - Incremental – Two square waves in quadrature with channel A leading B for clockwise shaft rotation, as viewed from the mounting face. See Waveform Diagrams.
- **Output Types**
  - Open Collector – 20 mA max per channel
  - Push-Pull – 20 mA max per channel
  - Line Driver – 20 mA max per channel (Meets RS 422 at 5 VDC supply)
- **Index**
  - Once per revolution gated to channel A. See Waveform Diagrams.
- **Max. Frequency**
  - Standard: 200 kHz for CPR 1 to 2540
  - 500 kHz for CPR 2541 to 5000
  - 1 MHz for CPR 5001 to 10,000
  - Extended: 300 kHz for CPR 2000, 2048, 2500, and 2540
- **Electrical Protection**
  - Reverse voltage and output short circuit protected. NOTE: Sustained reverse voltage may result in permanent damage.
- **Noise Immunity**
  - Tested to BS EN61000-6-2; BS EN50081-2; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-6, BS EN55011
- **Quadrature Edge Separation**
  - 67.5° electrical or better is typical, 54° electrical minimum at temperatures > 99°C
- **Accuracy**
  - Within 0.01° mechanical from one cycle to any other cycle, or 0.6 arc minutes.
- **Commutation Accuracy**
  - Up to 12 pole. Contact Customer Service for availability.
- **Mechanical**
  - **Max Shaft Speed**
    - 7500 RPM. Higher shaft speeds may be achievable, contact Customer Service. Note: For extreme temperature operation, de-rate temperature by 5°C for every 1000 RPM above 3000 RPM.
  - **Bore Tolerance**
    - -0.0005" / +0.0006"
  - **User Shaft Tolerances**
    - Radial Runout......0.007" max
    - Axial Endplay......±0.030" max
  - **Starting Torque**
    - IP50 Thru-Bore: 0.50 oz-in
    - IP50 Hollow Bore: 0.30 oz-in
    - IP64 Thru-Bore: 2.50 oz-in
    - IP64 Hollow Bore: 2.0 oz-in
  - **Moment of Inertia**
    - 3.9 x 10^-4 oz-in-sec²
  - **Housing**
    - Non-corrosive material
  - **Weight**
    - 3.5 oz typical

**Environmental**
- **Storage Temp**
  - -40° to 100°C
- **Humidity**
  - 98% RH non-condensing
- **Vibration**
  - 10 g @ 58 to 500 Hz
- **Shock**
  - 50 g @ 11 ms duration
- **Sealing**
  - IP50; IP64 available

MODEL 260 WITH FRONT SHAFT CLAMP (T)
WITH 1.811" (46 MM) BC SLOTTED FLEX (SF)

MODEL 260 REAR CLAMP (R)
WITH 1.811" (46 MM) BC SLOTTED FLEX (SF)

THREE POINT FLEX MOUNT (XF, NF)

All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified.
1.575" (40 MM) BC FLEX MOUNT (SD)

Use 4-40 or M2.5 buttonhead screws

1.06" TO 1.81" FLEX ARM (FA)

2.36" (60 MM) BC FLEX MOUNT (SL)

Use 4-40 or M2.5 buttonhead screws

1.50" TO 3.13" FLEX ARM (FB)

Use 4-40 or M2.5 buttonhead screws

All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified.
MODEL 260 CONNECTOR OPTIONS

BODY MOUNT 10-PIN BAYONET (SMH)

BODY MOUNT M12 (SMJ, SMK)

All dimensions are in inches with a tolerance of +0.005” or +0.01” unless otherwise specified.

WAVEFORM DIAGRAMS

OUTPUT A
OUTPUT X
OUTPUT B
INDEX Z
INDEX Z

OUTPUT U
OUTPUT I
OUTPUT V
OUTPUT W
OUTPUT W

CLOCKWISE ROTATION AS VIEWED FROM THE MOUNTING FACE

NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES. WAVEFORM SHOWN WITH OPTIONAL COMPLEMENTARY SIGNALS A, B, Z FOR HH AND DD OUTPUTS ONLY.

WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable. Trim back and insulate unused wires.

<table>
<thead>
<tr>
<th>Function</th>
<th>Flying Leads</th>
<th>5-pin M12** Standard Wiring</th>
<th>8-pin M12** Optional Wiring</th>
<th>10-pin Bayonet*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com</td>
<td>Black</td>
<td>3</td>
<td>7</td>
<td>1 F</td>
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<tr>
<td>+VDC</td>
<td>White</td>
<td>1</td>
<td>2</td>
<td>2 D</td>
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<td>A</td>
<td>Brown</td>
<td>4</td>
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<td>3 A</td>
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<td>A'</td>
<td>Yellow</td>
<td>–</td>
<td>3</td>
<td>4 H</td>
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<tr>
<td>B</td>
<td>Red</td>
<td>2</td>
<td>4</td>
<td>5 B</td>
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<tr>
<td>B'</td>
<td>Green</td>
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<td>5</td>
<td>6 J</td>
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<td>Z</td>
<td>Orange</td>
<td>5</td>
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<td>Z'</td>
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<td>Violet</td>
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<td>Shield</td>
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†Standard cable for non-commutated models is 24 AWG. For commutated units, conductors are 28 AWG.
*CE Option: Cable shield (bare wire) is connected to internal case.
**CE Option: Use cable cordset with shield connected to M12 connector coupling nut.
*CE Option: Pin G is connected to internal case.