The Thru-Bore Series Accu-Coder™ Model 776 encoder is designed to fit directly on either a motor or other shaft where position, direction, or velocity information is needed. The advanced Opto-ASIC based electronics provide the superior noise immunity necessary in many industrial applications. The Model 776 conveniently features a clamp type mount for fast and easy mounting over a large range of shaft sizes. An optional anti-rotation flex mount maintains housing stability.

**COMMON APPLICATIONS**
Motor Feedback, Velocity & Position Control, Robotics, Conveyors, Material Handling

---

**MODEL 776 ORDERING GUIDE**

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

### MODEL 776 - INCREMENTAL ENCODER

**FEATURES**

- Slim Profile – Only 1.36" In Depth
- Thru-Bore Design For Easy Mounting
- Incorporates Opto-ASIC Technology
- Resolutions to 4096
- Bore Options to 1.875"
- CE Marking Available

The Thru-Bore Series Accu-Coder™ Model 776 encoder is designed to fit directly on either a motor or other shaft where position, direction, or velocity information is needed. The advanced Opto-ASIC based electronics provide the superior noise immunity necessary in many industrial applications. The Model 776 conveniently features a clamp type mount for fast and easy mounting over a large range of shaft sizes. An optional anti-rotation flex mount maintains housing stability.

**COMMON APPLICATIONS**
Motor Feedback, Velocity & Position Control, Robotics, Conveyors, Material Handling

---

**MODEL 776 ORDERING GUIDE**

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

### MODEL 776 ORDERING GUIDE

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

**MODEL 776 ORDERING GUIDE**

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

### MODEL 776 ORDERING GUIDE

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

---

**NOTES:**

1. Contact Customer Service for index gating options.
2. 5 to 24 VDC max for high temperature option.
3. Line Driver not available with 5-pin M12 or 6-pin MS connector. Available with 7-pin MS connector only without Index Z.
4. 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.
5. For non-standard cable lengths, add a forward slash (/) plus cable length expressed in feet. Example: P/6 = 6 feet of cable.
6. Connector options other than 9D and P require extended housing. See drawing, next page.

---

**MODEL 776 CPR OPTIONS**

<table>
<thead>
<tr>
<th>CPR Options</th>
<th>0060</th>
<th>0100</th>
<th>0120</th>
<th>0240</th>
<th>0256</th>
<th>0256</th>
<th>0500</th>
<th>0512</th>
<th>1000</th>
<th>1024</th>
<th>2048</th>
<th>2500</th>
<th>4096</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contact Customer Service for other disk resolutions; not all disk resolutions available with all output types.

**CONTACT:**

1-800-366-5412 • www.encoder.com • sales@encoder.com

Rev. 03/26/19
MODELC776 SPECIFICATIONS

Electrical

- Input Voltage: 4.75 to 28 VDC max for temperatures up to 70° C
- Input Current: 100 mA max with no output load
- Input Ripple: 100 mV peak-to-peak at 0 to 100 kHz
- 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 – 100 mA max per channel
  - Pull-Up – Open Collector with 2.2K ohm internal resistor, 100 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.
- Max Frequency: 200 kHz
- Electrical Protection: Reverse voltage and output short circuit protected. NOTE: Sustained reverse voltage may result in permanent damage.
- Noise Immunity: Tested to BS EN61000-4-2; IEC801-3; BS EN61000-4-4; DDENV 50141; DDENV 50204; BS EN55022 (with European compliance option); BS EN61000-6-2; BS EN50081-2

Quadrature: 67.5° electrical or better is typical,

Edge Separation: 54° electrical minimum at temperatures > 99° C

Rise Time: Less than 1 microsecond

Mechanical

- Max Shaft Speed: 3500 RPM. Higher shaft speeds may be achievable, contact Customer Service.
- User Shaft Tolerances:
  - Radial Runout: 0.005"
  - Axial Endplay: ±0.030" with appropriate flex mount
- Moment of Inertia: 3.3 x 10^3 oz-in^2 typical
- Housing: All metal construction
- Weight: 1.0 lb with gland nut or D-sub connector option 1.5 lb with MS connector option
  - Note: All weights typical

Environmental

- Storage Temp: -25° to 100° C
- Humidity: 98% RH non-condensing
- Vibration: 10 g @ 58 to 500 Hz
- Shock: 50 g @ 11 ms duration
- Sealing: IP50

MODELC776 WITH GLAND NUT CABLE (P)

MODEL776 WITH 9-PIN D-SUB CONNECTOR (9D)

MODEL776 EXTENDED HOUSING (W, X, Y, J, K)

MODEL776 SHOWN WITH ANTI-ROTATION FLEX MOUNT

All dimensions are in inches with a tolerance of ±0.005" or ±0.01" unless otherwise specified.
**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>Gland Cable†</th>
<th>Wire Color</th>
<th>5-pin M12++</th>
<th>8-pin M12++</th>
<th>10-pin MS</th>
<th>7-pin MS HV</th>
<th>7-pin MS PU, PP, OC</th>
<th>6-pin MS PU, PP, OC</th>
<th>9-pin D-sub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Com</td>
<td>Black</td>
<td>3</td>
<td>7</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>A, F</td>
<td>A, F</td>
<td>9</td>
</tr>
<tr>
<td>+VDC</td>
<td>Red</td>
<td>1</td>
<td>2</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>B</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>White</td>
<td>4</td>
<td>1</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>D</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A'</td>
<td>Brown</td>
<td>--</td>
<td>3</td>
<td>H</td>
<td>C</td>
<td>--</td>
<td>--</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Blue</td>
<td>2</td>
<td>4</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>E</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B'</td>
<td>Violet</td>
<td>--</td>
<td>5</td>
<td>I</td>
<td>E</td>
<td>--</td>
<td>--</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>Orange</td>
<td>5</td>
<td>6</td>
<td>C</td>
<td>--</td>
<td>C</td>
<td>C</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Z'</td>
<td>Yellow</td>
<td>--</td>
<td>8</td>
<td>J</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Case</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>G**</td>
<td>G**</td>
<td>G**</td>
<td>--</td>
<td>8*</td>
<td></td>
</tr>
<tr>
<td>Shield</td>
<td>Bare*</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

*CE Option: Cable shield (bare wire) is connected to internal Case.
*CE Option: Pin G is connected to Case. Non-CE Option: Pin G has No Connection.
†CE Option: Use cable cordset with shield connected to M12 connector coupling nut.
†Standard cable is 24 AWG conductors with foil and braid shield.

**WAVEFORM DIAGRAMS**

Line Driver and Push-Pull

Open Collector and Pull-Up

NOTE: ALL DEGREE REFERENCES ARE ELECTRICAL DEGREES. INDEX IS POSITIVE GOING.