**MODEL 30MT – INCREMENTAL ENCODER MODULE**

**FEATURES**
- Large Air Gap and Tolerance to Misalignment
- Resolutions of 1 to 1024 CPR (4096 PPR with Quadrature Counting)
- Sealing Options to IP69K
- Operating Temperature Range -40° to 120° C
- Easy Alignment and Installation

The Model 30MT Accu-Coder™ is a compact, incremental encoder module with advanced magnetic sensing and signal processing technology. With a built-in alignment feature, the threaded housing allows for quick, accurate air-gap setting. Featuring resolutions from 1 to 1024 CPR, several output types, and a wide range for supply voltage, it can be configured for a variety of industrial, commercial and consumer feedback applications. The non-contact magnetic sensor and optional sealing up to IP69K allows the Model 30MT to be applied in environments where dirt, dust and liquids are present.

**COMMON APPLICATIONS**

**MODEL 30MT ORDERING GUIDE**
Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.

**MODEL**
30MT Threaded Incremental Encoder Module

**MAGNET**
- 00 No Magnet
- RM Ø4 mm magnet
- Over Shaft Magnet Holders w/Bore Size (includes magnet)
  - 21 3/16", 0.1875"  
  - 01 1/4", 0.250"  
  - 03 5/16", 0.3125"  
  - 02 3/8", 0.375"  
  - 05 1/2", 0.500"  
  - 11 5/8", 0.625"  
  - 06 5 mm  
  - 04 6 mm  
  - 14 8 mm  
  - 10 10 mm  
  - 13 14 mm
- Press In/On Magnet Holder (Includes magnet)
  - 48 0.250" Bore/0.125" Shaft

**CYCLES PER REVOLUTION**
0001 to 1024

**OUTPUT TYPE**
- HV Differential Line Driver
- OC Open Collector
- PP Push-Pull

**INPUT VOLTAGE**
- V1 5 to 28 VDC

**CONNECTOR TYPE**
- K 8-Pin M12

**SEALING**
- Leave Blank for Standard Option
- IP50 (Std)
- IP69K

**INPUT VOLTagE**

| V1  | 5 to 28 VDC |

**CHANNEL**
- R3 Quadrature A&B w/ Index
- D3 Reverse Quad A&B w/ Index

**NOTES:**
1. A high-quality magnet is required to generate a reliable signal; magnet options provided by EPC have been pre-qualified to provide a clear and reliable signal.
MODEL 30MT SPECIFICATIONS

ELECTRICAL
- **Input Voltage**: 4.5 to 28 VDC (4.5 to 20 VDC over 105°C)
- **Input Current**: 80 mA max, 50 mA or less typical with no output load
- **Output Format**: Two square waves in quadrature with channel A leading B for clockwise magnet rotation as viewed from the encoder mounting face. Index gated to A and B.
- **Output Types**: Open Collector
  - Open Collector with Differential Outputs
  - Differential Line Driver (Meets RS422 at 5 VDC)
  - Push-Pull
- **Max Frequency**: 350 kHz
- **Electrical Protection**: Reverse voltage and output short circuit protected.
- **Min Edge Sep**: 20° electrical typical @ 25° C
- **Accuracy**: Typically within ±0.7° mechanical from true position. Accuracy improves at nominal air gap with minimized magnet runout, offset and endplay.

MECHANICAL/ENVIRONMENTAL
- **Operating Temp**: -40°C to 120°C; reduced to 110°C max above 200 kHz with 20V input and 20mA/channel output
- **Air Gap**: 0.022" nominal recommended
- **User Shaft Tolerances**:
  - Axial Endplay: ±0.020" max
  - Radial Runout: 0.008" max
  - Axial Offset: 0.008" max
- **Mounting Bolts**: Two M2.5 x 8mm screws with washers provided
- **Housing Material**: High Temp, Toughened Nylon Composite
- **Weight**: 0.7 oz typical or less (with clamping nut)
- **Humidity**: 98% RH non-condensing
- **Vibration**: 20 g @ 10 to 2000 Hz (MIL-STD-202G Method 204D)
- **Shock**: 100 g @ 11 ms duration (MIL-STD-202G Method 213B)
- **Sealing**: IP50 standard; IP69K available

WAVEFORM DIAGRAMS

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

| Function | 8-pin |
|----------|--
| Com      | M12  |
| +VDC     | 7    |
| A        | 1    |
| A'       | 3    |
| B        | 4    |
| B'       | 5    |
| Z        | 6    |
| Z'       | 8    |

UNIVERSAL MOUNTING ADAPTOR
Stock #176672
Provides the following mounting patterns, 2x @ 180°:
- Ø1.142 (Ø29.0) B.C.
- Ø1.280 (Ø32.5) B.C.
- Ø1.500 (Ø38.1) B.C.
- Ø1.575 (Ø40.0) B.C.
- Ø1.811 (Ø46.0) B.C.
OVER SHAFT MAGNET HOLDERS

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<th>ID</th>
<th>OD</th>
<th>BL</th>
<th>L</th>
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<tr>
<td>176596-01</td>
<td>3/16&quot; (0.1875&quot;)</td>
<td>0.365</td>
<td>0.375</td>
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<td>0.365</td>
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<td>176598-01</td>
<td>6mm (0.2362&quot;)</td>
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<td>176599-01</td>
<td>1/4&quot; (0.2500&quot;)</td>
<td>0.490</td>
<td>0.375</td>
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<td>5/16&quot; (0.3125&quot;)</td>
<td>0.490</td>
<td>0.475</td>
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<tr>
<td>176601-01</td>
<td>8mm (0.3150&quot;)</td>
<td>0.490</td>
<td>0.475</td>
<td>0.680</td>
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<tr>
<td>176602-01</td>
<td>5/8&quot; (0.3750&quot;)</td>
<td>0.615</td>
<td>0.475</td>
<td>0.680</td>
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<td>176603-01</td>
<td>10mm (0.3937&quot;)</td>
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<td>176604-01</td>
<td>1/2&quot; (0.5000&quot;)</td>
<td>0.740</td>
<td>0.750</td>
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<td>176605-01</td>
<td>14mm (0.5512&quot;)</td>
<td>0.740</td>
<td>0.750</td>
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<tr>
<td>176606-01</td>
<td>5/8&quot; (0.6250&quot;)</td>
<td>0.865</td>
<td>0.750</td>
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PRESS IN/ON MAGNET HOLDER

Stock # 176607-01

MATING CABLES/CORDSETS

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<td>8-Pin M12 Mating Cordset, 2 Meters</td>
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<td>8-Pin M12 Mating Cordset, 4 Meters</td>
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<td>075103</td>
<td>8-Pin M12 Mating Cordset, 6 Meters</td>
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<td>075104</td>
<td>8-Pin M12 Mating Cordset, 10 Meters</td>
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