Common Applications
Robotics, Telescopes, Antennas, Medical Scanners, Windmills, Elevators, Lifts, Motors, Automatic Guided Vehicles, Rotary and X/Y Positioning Tables

Model MA36H Ordering Guide
For Single turn applications see Model SA36H

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

Features
- Standard Size 36 mm Package
- Durable Magnetic Technology
- Multiturn Absolute Encoder (14 Bit/40 Bit)
- SSI and CANopen Communications
- Proven New Turns Counting Technology - No Gears or Batteries
- Flex Mount Eliminates Couplings and is Ideal for Motors or Shafts

The Model MA36H Multiturn Absolute Encoder is ideal for a wide variety of industrial applications that require an encoder with the capability of absolute positioning output. Its fully digital output and innovative use of battery-free multiturn technology make the Model MA36H an excellent choice for all applications, especially ones with a high presence of noise. Its durable magnetic technology and high sealing make it a perfect choice for dirty industrial environments. Available with a 1/4" or 6 mm hollow bore and a selection of flexible mounting options, the Model MA36H is easily designed into a variety of applications.
Model MA36H Specifications

**Electrical**
- **Input Voltage**: 10 to 30 Vcc max SSI or CAN
- **Input Current**: 50 mA max with no external load
- **Power Consumption**: 0.5 W max
- **Resolution (Single)**: 12 bit (CAN)
- **Accuracy**:
  - Less than 0.15° (CANopen)
  - Less than 0.35° (SSI)

**CANopen Interface**
- **Protocol**: CANopen: - Communication profile CiA 301 - Device profile for encoder CiA 406 - V2.2 class C2
- **Node Number**: 0 to 127 (default 127)
- **Baud Rate**: 10 Kbaud to 1 Mbaud with automatic bit rate detection

**Programmable CAN Transmission Modes**
- **Synchronous**: When a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independently.
- **Asynchronous**: A PDO message is triggered by an internal event (e.g., change of measured value, internal timer, etc.).

**SSI Interface**
- **Clock Input**: via opto coupler
- **Clock Frequency**: 100kHz to 500kHz
- **Data Output**: RS485 / RS422 compatible
- **Output Code**: Gray or binary
- **SSI Output**: Angular position value
- **Parity Bit**: Optional (even/odd)
- **Error Bit**: Optional
- **Turn On Time**: <1.5 sec
- **Pos. Counting Dir.**:
  - Connect DIR to GND for CW
  - Connect DIR to VDC for CCW
- **Set to Zero**: Apply Vcc for 2 sec

**Mechanical**
- **Max Shaft Speed**: 12,000 RPM
- **Bore Size**: 6 mm, 0.250°
- **Bore Depth**: 17 mm
- **Radial Runout**: 0.005° max
- **Starting Torque**: 0.45 oz-in typical
- **Housing**: Ferrous chrome-plated magnetic screening
- **Mounting**: Hollow shaft with flex mount
- **Weight**: 630 gms typical

**Environmental**
- **Operating Temp**: -40° to +80° C
- **Storage Temp**: -40° to +120° C
- **Humidity**: 95% RH non-condensing
- **Vibration**: 5 g @ 10 to 2000 Hz
- **Shock**: 100 g @ 6 ms duration
- **Sealing**: IP64, shaft sealed to IP65

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**Model MA36H 46mm Slotted Flex Mount (SF)**

**Model MA36H Optional Flex Mounts**
- **40mm**: SD
- **42mm**: SW

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**Wiring Table**

**CANopen Encoders**

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>U_B</td>
<td>2</td>
</tr>
<tr>
<td>Ground (GND)</td>
<td>3</td>
</tr>
<tr>
<td>CAN_High</td>
<td>4</td>
</tr>
<tr>
<td>CAN_Low</td>
<td>5</td>
</tr>
<tr>
<td>CAN_GND/shield</td>
<td>1</td>
</tr>
</tbody>
</table>

**SSI Encoders**

<table>
<thead>
<tr>
<th>Function</th>
<th>8-pin M12</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground (GND)</td>
<td>1</td>
<td>White</td>
</tr>
<tr>
<td>+Vcc</td>
<td>2</td>
<td>Brown</td>
</tr>
<tr>
<td>SSI CLK+</td>
<td>3</td>
<td>Green</td>
</tr>
<tr>
<td>SSI CLK-</td>
<td>4</td>
<td>Yellow</td>
</tr>
<tr>
<td>SSI DATA+</td>
<td>5</td>
<td>Gray</td>
</tr>
<tr>
<td>SSI DATA-</td>
<td>6</td>
<td>Pink</td>
</tr>
<tr>
<td>PRESET</td>
<td>7</td>
<td>Blue</td>
</tr>
<tr>
<td>DIR</td>
<td>8</td>
<td>Red</td>
</tr>
<tr>
<td>Shield housing</td>
<td></td>
<td>Side Exit - Housing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End Exit - N/C</td>
</tr>
</tbody>
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