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

Model MA36S Ordering Guide
For Single turn applications see Model SA36S
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 (12 Bit/40 Bit)
- SSI and CANopen Communications
- Proven New Turns Counting Technology - No Gears or Batteries

The Model MA36S Multiturn Absolute 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 MA36S 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 6 mm or 1/4" shaft and a servo mount, the Model MA36S is easily designed into a variety of applications.

Model MA36S MultiTurn Absolute

For specification assistance call Customer Service at +44 (0)1978 262100

Notes:
1. Available with CANopen only
2. Available with SSI only
Model MA36S 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**: 12 bit (CAN)
- **Accuracy**: Less than 0.15° (CANopen)
- **Input Current**: 50 mA max with no external load

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

**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 (when viewed from shaft end)
- **Set to Zero**: Apply Vcc for 2 sec

**Mechanical**
- **Max Shaft Speed**: 12,000 RPM
- **Shaft Size**: 6 mm, 0.250"
- **Radial Shaft Load**: 7 lb (32 N) = bearing life 1.10^12 revs
- **Axial Shaft Load**: 5 lb (20 N) = bearing life 1.10^12 revs
- **Starting Torque**: 0.45 oz-in typical
- **Housing**: Ferrous chrome-plated magnetic screening
- **Weight**: 630 gms typical

**Environmental**
- **Operating Temp.**: -40° to +80° C
- **Storage Temp.**: -40° to +100° C
- **Humidity**: 95% RH non-condensing
- **Vibration**: 5 g @ 10 to 2000 Hz
- **Shock**: 100 g @ 6 ms duration
- **Sealing**: IP-64, shaft sealed to IP-65

**Wiring Table**

<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>Pin</th>
<th>Color</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>
</tbody>
</table>

**Other Features**

- **Nickel Finish**
- **Contact Resistance**: 0.015 Ω max
- **Commutation**: 100 VAC 50/60Hz
- **Measuring Principle**: Incremental 
- **Accuracy**: ±1.0 degree at 10000 RPM
- **Operating Voltage**: 5 VDC max

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