Model SA36S
Single Turn Absolute

Features
- Standard Size 36 mm Package
- Durable Magnetic Technology
- Up to 14 Bits of Single Turn Resolution
- SSI and CANopen Communications

The Model SA36S Single Turn 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, rugged magnetic technology and high sealing make the Model SA36S an excellent choice for all applications, especially ones with a high presence of noise. Available with a 6 mm or 1/4” shaft and a servo mount, the Model SA36S is easily designed into a variety of applications.

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

Model SA36S Ordering Guide
For Multiturn applications see Model MA36S

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

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

Notes:
1. Available with CANopen only
2. Available with SSI only
Model SA36S Specifications

**Electrical**
- Input Voltage: 10 to 30 Vcc max SSI or CAN
- 5 Vcc SSI Only
- 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)
- Less than 0.35° (SSI)

**CANopen Interface**
- Protocol: CANopen:
  - Communication profile CiA 301
  - Device profile for encoder CiA 406
  - V3.2 class C2
- Node Number: 0 to 127 (default 127)
- Baud Rate: 10 Kbaud to 1 Mbaud with automatic bit rate detection

The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e.g. PDOs, scaling, heartbeat, node-ID, baud rate, etc.

**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 (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: Ferrus chrome-plated magnetic screening
- Weight: 630 gms typical

**Environmental**
- Operating Temp: -40° to +80° C
- Storage Temp: -40° to +130° 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

**Wiring Table**

<table>
<thead>
<tr>
<th>CANopen Encoders</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>CANHigh</td>
<td>4</td>
</tr>
<tr>
<td>CANLow</td>
<td>5</td>
</tr>
<tr>
<td>CAN_GND / shield</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SSI Encoders</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>
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<tr>
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<td>5</td>
<td>Gray</td>
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<tr>
<td>SSI DATA-</td>
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<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>Side Exit - Housing End Exit - N/C</td>
<td></td>
</tr>
</tbody>
</table>