Model SA36H
Single Turn Absolute

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

Model SA36H Ordering Guide
For Multiturn applications see Model MA36H

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
- Up to 14 Bits of Single Turn Resolution
- SSI and CANopen Communications
- Flex Mount Eliminates Couplings and is Ideal for Motors or Shafts

The Model SA36H Single Turn 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, rugged magnetic technology and high sealing make the Model SA36H an excellent choice for all applications, especially ones with a high presence of noise. Available with a 1/4” or 6 mm hollow bore and a wide selection of flexible mounting options, the Model SA36H is easily designed into a variety of applications.

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SA36H

Mechanical

Model SA36H = Solid Shaft

SA36H
01
SF

BORE SIZE
01 0.250”
04 6mm

MOUNTING
SF 46mm Slotted Flex-Mount
SD 40mm Slotted Flex-Mount
SW 42mm Slotted Flex-Mount

Electrical Specification

INPUT VOLTAGE
05 5 Vcc (Note 2)
V3 10 to 30 Vcc

OUTPUT CODE
C1 Binary
C2 Gray

COMM PROTOCOL
P1 CANopen
P2 SSI

SOFTWARE REVISION
A Revision A

EMJ
Galvanic Isolation
No
G1 Yes
Note 2

Optional Features

Note 1
EMJ 5 Pin M12 End Mount

Note 2
EMK 8 Pin M12 End Mount
EC6 6 Ft End Mount Cable With Gland Nut
SC6 6 Ft Side Mount Cable (IP40 Sealing Only)

Notes:
1. Available with CANopen only
2. Available with SSI only

For specification assistance call Customer Service at +44 (0)1978 262100
**Model SA36H 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)**: 8 to 14 bit (SSI)
- **Resolution (Multi)**: Up to 40 bit multiturn (CANopen or SSI)
- **Accuracy**:
  - Less than 15° (CANopen)
  - Less than 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

**SSI Interface**
- **Clock Input**: via opto coupler
- **Clock Frequency**: 100KHz to 500KHz
- **Data Output**: RS485 / RS422 compatible
- **Output Code**: Gray or binary
- **SSI Output**: Angle 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
- **Bore Size**: 6 mm, 0.250"
- **Bore Depth**: 17 mm
- **User Shaft**: Hollow shaft with flex mount
- **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

**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>

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

**Model SA36H 46mm Slotted Flex Mount (SF)**

**Model SA36H Optional Flex Mounts**

- **40mm**: SD
- **42mm**: SW