The Model A36HB Absolute Encoder offers a high performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be retained after loss of system power. Its rugged magnetic technology and high IP rating make the Model A36HB an excellent choice, even in tough industrial environments. Available with a 1/4" or 6 mm hollow bore (blind) and a wide selection of flexible mounting options, the Model A36HB is easily designed into a variety of applications.

**COMMON APPLICATIONS**
Robotics, Telescopes, Antennas, Medical Scanners, Wind Turbines, Elevators, Lifts, Motors, Automatic Guided Vehicles, Rotary and X/Y Positioning Tables

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**FEATURES**
- Single Turn/Multi-Turn Absolute Encoder (16 Bit ST / 43 Bit MT)
- SSI or CANopen Communication
- Maintenance-Free and Environmentally Friendly Magnetic Design
- Energy Harvesting Magnetic Multi-Turn Technology
- No Gears or Batteries
- Standard Size 36 mm (1.42") Hollow Bore (Blind) Encoder
- Flex Mount Eliminates Couplings and Is Ideal for Motors or Shafts
- Meets CE/EMC Standards for Immunity and Emissions

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**CLASSIFICATIONS**
- **CLASS**
  - A36HB (Absolute Series)
  - Hollow Bore (Blind)
- **BORE SIZE**
  - 06: 6 mm
  - A5: 1/4", 0.250"
- **MOUNTING**
  - SF: 1.812" (46 mm) Slotted Flex Mount
  - SD: 1.575" (40 mm) Slotted Flex Mount
  - SW: 1.653" (42 mm) Slotted Flex Mount

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**ORDERING INFORMATION**
- **MODEL**
  - A36HB
- **BORE SIZE**
  - 06: 6 mm
  - A5: 1/4", 0.250"
- **MOUNTING**
  - SF: 1.812" (46 mm) Slotted Flex Mount
  - SD: 1.575" (40 mm) Slotted Flex Mount
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**NOTES:**
3. Available with SSI only.
4. For mating connectors, cables, and cordsets see Accessories at encoder.com. For Connector Pin Configuration Diagrams, see Technical Information or see Connector Pin Configuration Diagrams at encoder.com.
5. Available with CANopen only.
MODEL A36HB SPECIFICATIONS

Electrical
Input Voltage............ 10 to 32 VDC max SSI or CANopen
5 VDC SSI Only
Input Current............. 50 mA typical for 10 to 32 VDC
80 mA typical for 5 VDC
Power Consumption...... 0.5 W max
Resolution (Single)..... 01 to 16 bit
Resolution (Multi)..... 01 to 43 bit
Accuracy...................... ± 0.35°
Repeatability............ ± 0.2°
CE/EMC .................. Immunity tested per EN 61000-6-2:2006
Emissions tested per EN 61000-6-3:2011

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
Note: 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 CANopen Transmission Modes
Synchronous............. When a synchronization 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........ 1000Hz to 5000kHz. Higher frequencies may be available. Contact Customer Service.
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.............. Yes, see Technical Bulletin TB-529: Understanding EPC’s SSI Encoders
Protection.............. Galvanic Isolation

Mechanical
Max Shaft Speed........ 12,000 RPM
Bore Depth............. 17 mm (0.669")
User Shaft..............
Radial Runout.......... 0.005" max
Starting Torque.......... 0.45 in·oz typical
Radial Shaft Load....... 17 lb (80 N) = bearing life of 1.4x10^8 revolutions
Axial Shaft Load....... 11 lb (50 N) = bearing life of 1.4x10^8 revolutions
Housing................. Ferrous chrome-plated magnetic screening
Weight................. 5 oz typical

Environmental
Operating Temp......... -40° to 85° 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................. IP67; shaft sealed to IP65

WIRING TABLE
For EPC-supplied mating cables, refer to wiring table provided with cable.
For CE (Conformity European) requirements, use M12 cordset with shield connected to M12 coupling nut.
Trim back and insulate unused wires.

SSI ENCODERS

<table>
<thead>
<tr>
<th>Function</th>
<th>Gland Cable†</th>
<th>8-pin M-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground (GND)</td>
<td>White</td>
<td>1</td>
</tr>
<tr>
<td>+VDC</td>
<td>Brown</td>
<td>2</td>
</tr>
<tr>
<td>SSI CLK+</td>
<td>Green</td>
<td>3</td>
</tr>
<tr>
<td>SSI CLK-</td>
<td>Yellow</td>
<td>4</td>
</tr>
<tr>
<td>SSI DATA+</td>
<td>Gray</td>
<td>5</td>
</tr>
<tr>
<td>SSI DATA-</td>
<td>Pink</td>
<td>6</td>
</tr>
<tr>
<td>PRESET</td>
<td>Blue</td>
<td>7</td>
</tr>
<tr>
<td>DIR</td>
<td>Red</td>
<td>8</td>
</tr>
<tr>
<td>Shield</td>
<td>Side - Exit Housing</td>
<td>End - Exit N/C</td>
</tr>
</tbody>
</table>

CANOPEN ENCODERS

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>+VDC</td>
<td>2</td>
</tr>
<tr>
<td>Ground (GND)</td>
<td>2</td>
</tr>
<tr>
<td>CAN_high</td>
<td>4</td>
</tr>
<tr>
<td>CAN_low</td>
<td>5</td>
</tr>
<tr>
<td>CAN_enc/_Shield</td>
<td>1</td>
</tr>
</tbody>
</table>

† Standard cable is 24 AWG conductors with foil and braided shield

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