

Model A36SB - Solid Shaft 36mm Absolute Encoder



SSI
Synchronous Serial Interface
CANopen®

Ø36 mm

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") Package
- Meets CE/EMC Standards for Immunity and Emissions

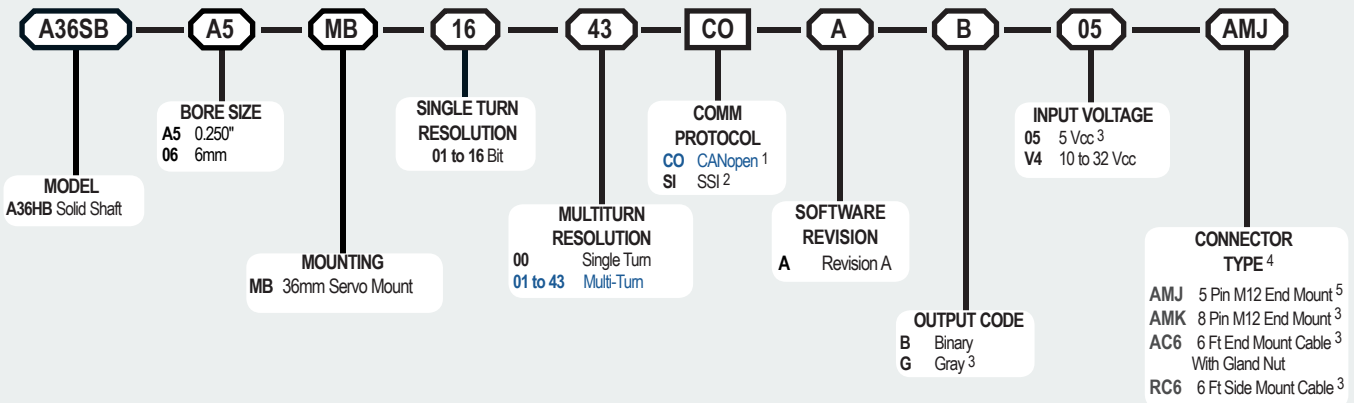
The Model A36SB Absolute Encoder offers a high performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be retained after loss of system power. Its rugged magnetic technology and high IP rating make the Model A36SB an excellent choice, even in tough industrial environments. Available with a 1/4" or 6 mm shaft and a servo mount, the Model A36SB 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 XY Positioning Tables

Model A36SB Ordering Guide

Blue 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 Please Refer to the [CANOpen Interface Technical Manual](http://www.encoder.co.uk) at www.encoder.co.uk
- 2 Please Refer to Technical Bulletin: [TB-529 Understanding BEPC SSI Encoders](http://www.encoder.co.uk) at www.encoder.co.uk
- 3 Available with SSI Only
- 4 For Connectors, Cables and Cordsets please visit the [Accessories](http://www.encoder.co.uk) section at www.encoder.co.uk or in our Catalogue.
- 5 Available with CANopen Only.

Model A36SB Solid Shaft 36mm Absolute Encoder

Model A36SB 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 $\pm 0.35^\circ$
Repeatability $\pm 0.2^\circ$
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 100KHz to 500KHz. 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 BEPC's SSI Encoders
Protection Galvanic Isolation

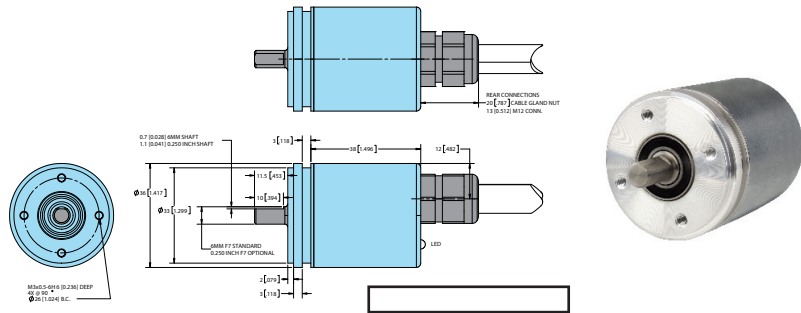
Mechanical

Max Shaft Speed 12,000 RPM
Starting Torque < 0.0032 N-m typical
Radial Shaft Load 17 lb (80 N) = bearing life of 1.4x108 rev-
olutions
Axial Shaft Load 11 lb (50 N) = bearing life of 1.4x108 rev-
olutions
Housing Ferrous chrome-plated magnetic screening
Mounting Hollow shaft with flex mount
Weight 630 grams typical

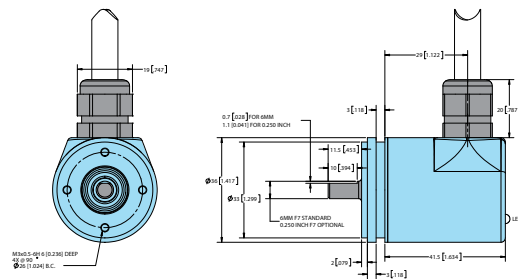
Environmental

Operating Temp -40° to $+80^\circ$ C
Storage Temp -40° to $+100^\circ$ 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

Model A36SB Solid Shaft Axial

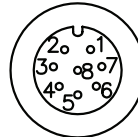


Model A36SB Solid Shaft Radial



WIRING TABLES

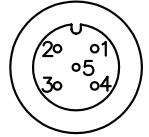
SSI Encoders 8-pin M12



| Function | Gland cable wire color† | 8-Pin M12 |
|--------------|-----------------------------------|-----------|
| Ground (GND) | White | 1 |
| +VDC | Brown | 2 |
| SSI CLK+ | Green | 3 |
| SSI CLK- | Yellow | 4 |
| SSI DATA+ | Gray | 5 |
| SSI DATA- | Pink | 6 |
| PRESET | Blue | 7 |
| DIR | Red | 8 |
| Shield | Side-exit housing End-Exit N/C | Housing |

†Standard cable is 24 AWG conductors with foil and braid shield.

CANopen Encoders 5-pin M12



| Function | Pin |
|-----------------------------|-----|
| +VDC | 2 |
| Ground (GND) | 3 |
| CAN _{High} | 4 |
| CAN _{Low} | 5 |
| CAN _{GND} / Shield | 1 |

Primary dimensions are in mm, secondary dimensions SI units[inches] in brackets for reference only.
All dimensions have a tolerance of ± 0.25 mm unless otherwise specified.