Model A36SB - Solid Shaft 36mm Absolute Encoder

BRITISH ENCODER PRODUCTS COMPANY

Ø36 mm

SSI
Synchronous Serial Interface

CANopen®

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
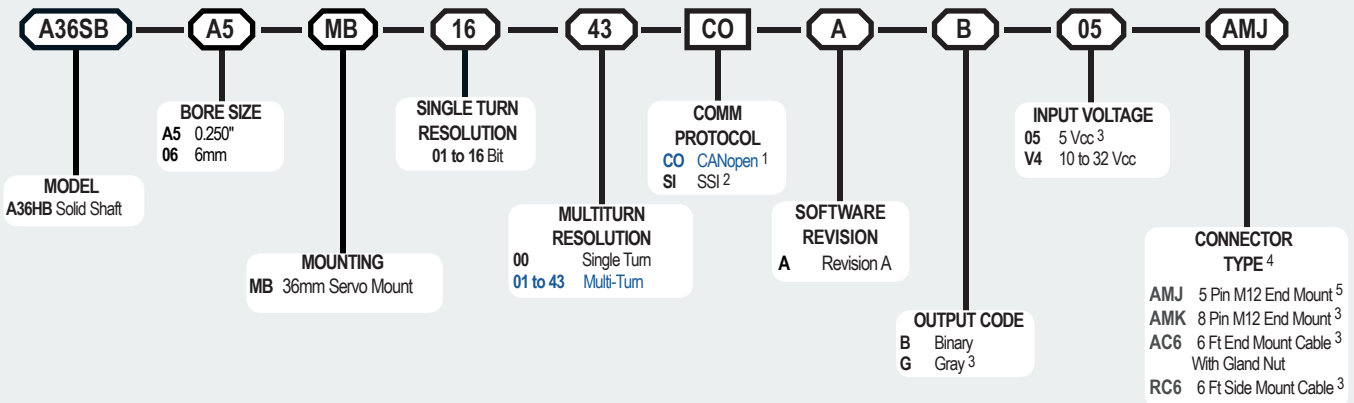- Meets CE/EMC Standards for Immunity and Emissions

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 X/Y Positioning Tables

Model A36SB Ordering Guide

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

| A36SB | A5 | MB | 16 | 43 | CO | A | B | 05 | AMJ |

MODEL
A36HB Solid Shaft

BORE SIZE
A5 0.250"
06 6mm

MOUNTING
MB 36mm Servo Mount

SINGLE TURN RESOLUTION
01 to 16 Bit

MULTITURN RESOLUTION
00   Single Turn
01 to 43   Multi-Turn

COMM PROTOCOL
CO CANopen [1]
SI SSI [2]

SOFTWARE REVISION
A Revision A

OUTPUT CODE
B Binary
G Gray [3]

INPUT VOLTAGE
05 5 Vcc [3]
V4 10 to 32 Vcc

CONNECTOR TYPE [4]
AMJ 5 Pin M12 End Mount [5]
AMK 8 Pin M12 End Mount [3]
AC6 6 Ft End Mount Cable [3]
      With Gland Nut
RC6 6 Ft Side Mount Cable [3]

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

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

Rev: A

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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 ....± 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..........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 revolutions
Axial Shaft Load ....11 lb (50 N) = bearing life of 1.4x108 revolutions
Housing.....................Ferrous chrome-plated magnetic screening
Mounting ....Hollow shaft with flex mount
Weight.......................630 grams 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.....................IP67, shaft sealed to IP65

Model A36SB Solid Shaft Axial
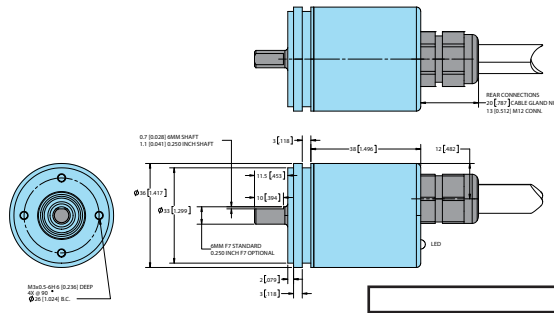
Model A36SB Solid Shaft Radial
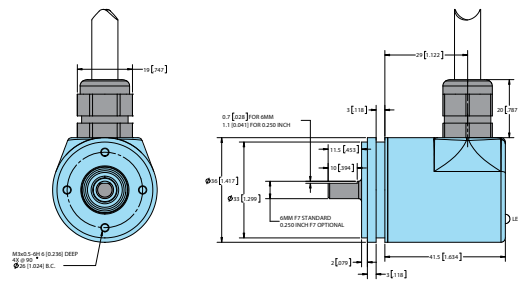
WIRING TABLES

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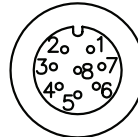
Function	Gland cable wire color†	8-Pin M12
Ground (GND)	White	1
+VDC	Brown	2
SSI CLK+	Green	3
SSI CLK-	Yellow	4
SSI DATA+	Gray	5
SSI DATA-	Pink	6
PRESET	Blue	7
DIR	Red	8
Shield	Side-exit housing End-Exit N/C	Housing

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

CANopen Encoders
5-pin M12
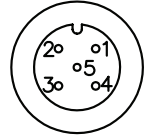
Function	Pin
+VDC	2
Ground (GND)	3
CAN$_{High}$	4
CAN$_{Low}$	5
CAN$_{GND}$ / Shield	1

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

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