Model A36HB - Hollow Blind Bore 36mm Absolute Encoder

BRITISH ENCODER PRODUCTS COMPANY

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") Hollow Bore (Blind) Encoder
- Flex Mount Eliminates Couplings and Is Ideal for Motors or Shafts
- Meets CE/EMC Standards for Immunity and Emissions

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

Model A36HB Ordering Guide

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

A36HB	A5	SF	16	43	CO	A	B	05	AMJ

MODEL
A36HB Hollow Bore

BORE SIZE
A5 0.250"
06 6mm

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

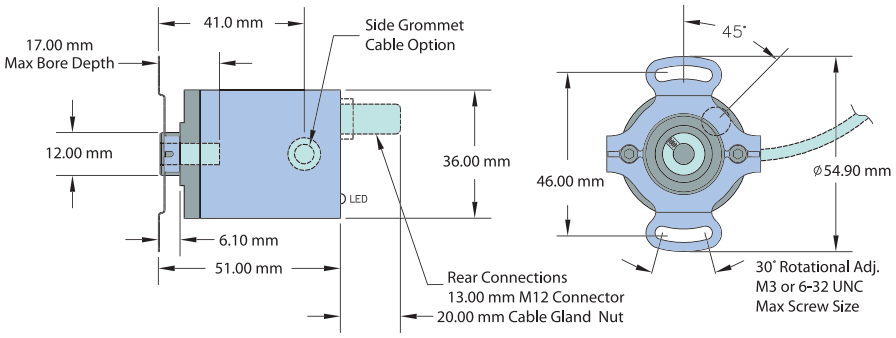
Mechanical

Max Shaft Speed..... 12,000 RPM
Bore Size ..... 6 mm, .250"
Bore Depth ..... 17 mm
User Shaft
Radial Runout..... 0.005" max
Starting Torque ..... <0.0032 N-m typica
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

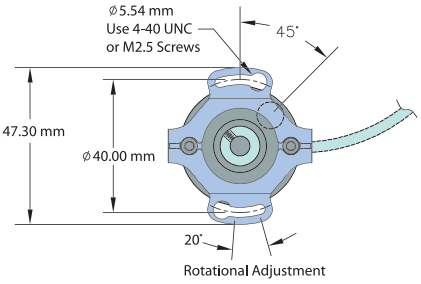
Operating Temp..... -40° to +80° C
Storage Temp ..... -40° to +100° C
Humidity..... 95% RH non-condensing
Vibration..... 5 g @ 10 to 2000 Hz
Shock..... 100 g @ 6 ms duration
Sealing..... IP67, shaft sealed to IP65

Model A36HB 46mm Slotted Flex Mount (SF)

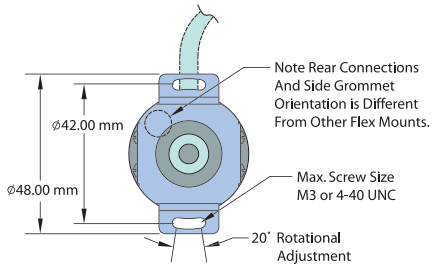


Model A36HB Optional Flex Mounts (SD) (SW)

40mm : SD



42mm : SW

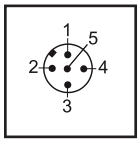


All dimensions are in mm with a tolerance of ±0.127 or ±0.254 unless otherwise specified.

Wiring Table

CANopen Encoders

Function	Pin
+Vcc	2
Ground (GND)	3
CAN_{High}	4
CAN_{Low}	5
CAN_{GND} / shield	1



SSI Encoders

Function	8-pin M12	Cable
Ground (GND)	1	White
+Vcc	2	Brown
SSI CLK+	3	Green
SSI CLK-	4	Yellow
SSI DATA+	5	Grey
SSI DATA-	6	Pink
PRESET	7	Blue
DIR	8	Red
Shield	housing	Side Exit - Housing End Exit - N/C