MODEL A36SB – ABSOLUTE SHAFT ENCODER

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 Package (1.42")
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.

Mechanical | Electrical

A36SB	–	06	MB	–	12	10	CO	A	B	V4	–	AMJ

MODEL
A36SB Absolute Series

SHAFT SIZE
06 6 mm
A5 1/4", 0.250"

MOUNTING
MB 36 mm Servo Mount

SINGLE TURN RESOLUTION
01 to 16 Bit

MULTI-TURN RESOLUTION
00 Single Turn
01 to 43 Multi-Turn

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

SOFTWARE REV
A Revison A

OUTPUT CODE
B Binary
G Gray[3]

INPUT VOLTAGE
5 5 VDC[3]
V4 10 to 32 VDC

CONNECTOR TYPE[4]
AMJ 5-pin M12 Axial Mount[5]
AMK 8-pin M12 Axial Mount[3]
AC6 6-foot Axial Mount Cable[3]
RC6 6-foot Radial Mount Cable[3]

NOTES:
1. Please refer to ***CANopen Interface Technical Reference Manual*** at encoder.com.
2. Please refer to Technical Bulletin ***TB-529: Understanding EPC's SSI Encoders*** at encoder.com.
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 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
80mA 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..... 100 KHz to 500 KHz. 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

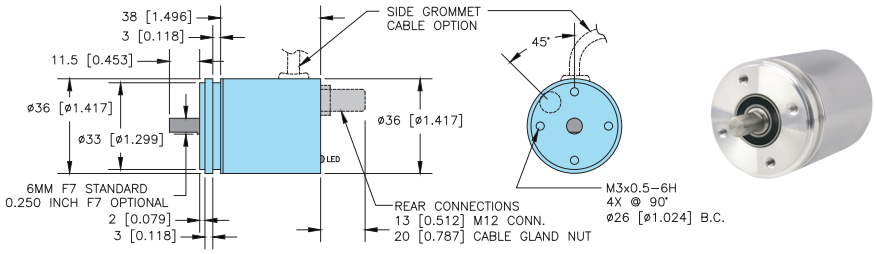
Mechanical

Max Shaft Speed..... 12,000 RPM
Radial Shaft Load ..... 17 lb (80 N) = bearing life of 1.4×10^8 revolutions
Axial Shaft Load ..... 11 lb (50 N) = bearing life of 1.4×10^8 revolutions
Starting Torque ..... < 0.45 oz-in typical
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

MODEL A36SB SOLID SHAFT

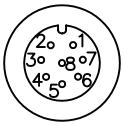


Primary dimensions are in mm, secondary dimensions SI units [inches] in brackets for reference only.

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

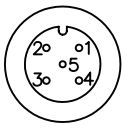


8–pin M12

Function	Gland Cable† Wire Color	8-pin M-12
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