

MODEL A36SB - ABSOLUTE SHAFT ENCODER



Ø36 mm

SSI **CANopen**
 Synchronous Serial Interface

FEATURES

Single Turn/Multi-Turn Absolute Encoder (16 Bit ST / 43 Bit MT)
 SSI or CANopen® communication
 Maintenance-free and environmentally friendly all-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

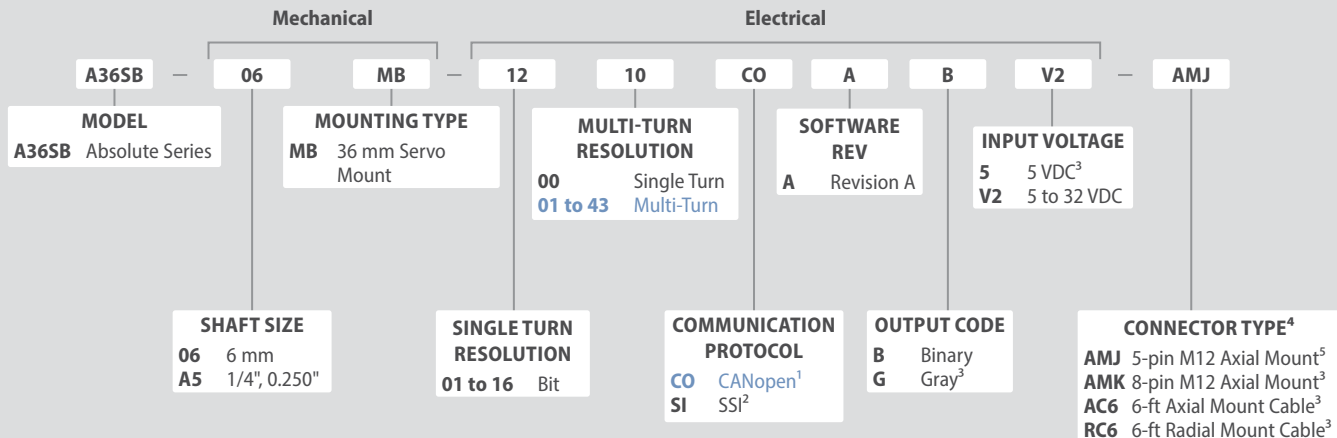
The Model A36SB absolute encoder offers a high performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be 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



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.

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 See encoder.com for more information.

MODEL A36SB - ABSOLUTE SHAFT ENCODER

MODEL A36SB SPECIFICATIONS

Electrical

| | |
|--------------------------|---|
| Input Voltage..... | 5 to 32 VDC max SSI or CANopen 5 VDC SSI Only |
| Input Current..... | .50 mA typical for 5 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..... | ± 0.0878° |
| Repeatability..... | ± 0.0878° |
| 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 |

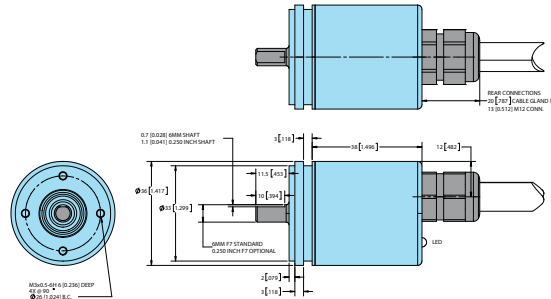
Mechanical

| | |
|------------------------|--|
| Max Shaft Speed..... | 12,000 RPM |
| Radial Shaft Load..... | 17 lb (80 N) = bearing life of 1.4x10 ⁸ revolutions |
| Axial Shaft Load..... | 11 lb (50 N) = bearing life of 1.4x10 ⁸ revolutions |
| Housing..... | All metal with protective finish |
| Weight..... | 5 oz typical |

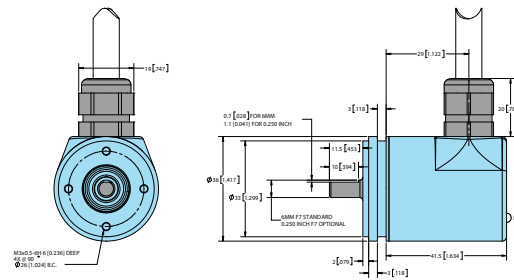
Environmental

| | |
|---------------------|----------------------------|
| Operating Temp..... | -40° to 85° C |
| Storage Temp..... | -40° to 100° C |
| Humidity..... | 95% RH non-condensing |
| Vibration..... | 30.6 g @ 10 to 2000 Hz |
| Shock..... | 510 g @ 6 ms duration |
| Sealing..... | IP67; shaft sealed to IP65 |

MODEL A36SB SOLID SHAFT AXIAL



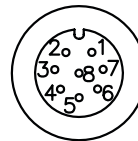
MODEL A36SB SOLID SHAFT RADIAL



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.

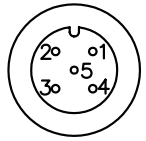
SSI Encoders 8-pin M12



| Function | Gland cable wire color† | 8-Pin 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

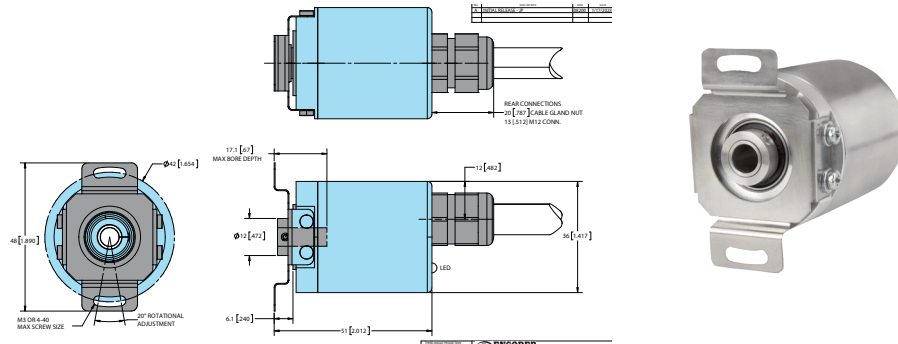


| Function | Pin |
|-----------------------------|-----|
| +VDC | 2 |
| Ground (GND) | 3 |
| CAN _{High} | 4 |
| CAN _{Low} | 5 |
| CAN _{GND} / Shield | 1 |

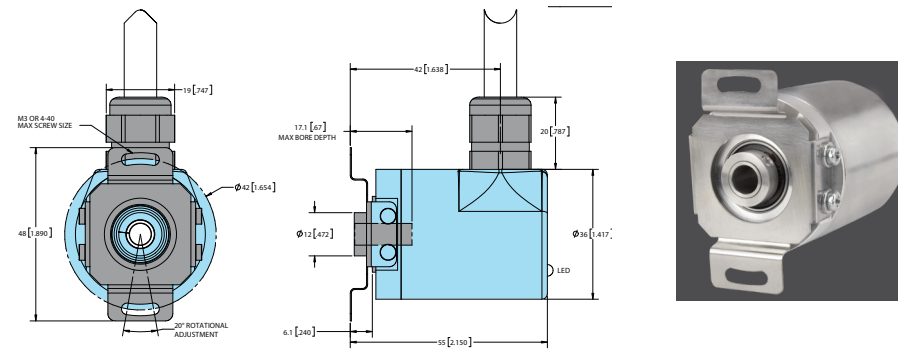
Primary dimensions are in mm, secondary dimensions [inches] in brackets for reference only.

MODEL A36SB - ABSOLUTE SHAFT ENCODER

1.653" (42 MM) SW AXIAL



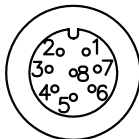
1.653" (42 MM) SW RADIAL



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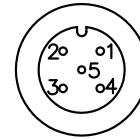
SSI Encoders 8-pin M12



| Function | Gland cable wire color† | 8-Pin M12 |
|--------------|-----------------------------------|-----------|
| Ground (GND) | v | 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 |