

# MODEL A58HB – ABSOLUTE HOLLOW BORE ENCODER



Ø58 mm



## 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**
- 58 mm (2.28") Diameter Hollow Bore (Blind) Encoder**
- Flex Mount Eliminates Couplings and Is Ideal for Motors or Shafts**
- Meets CE/EMC Standards for Immunity and Emissions**

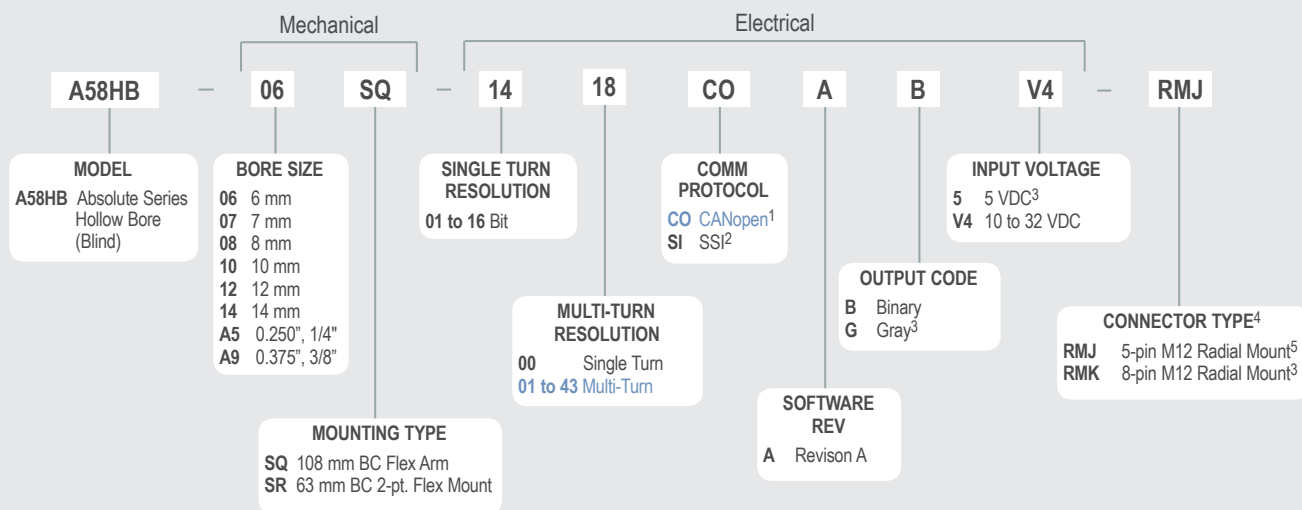
The Model A58HB Absolute Encoder offers a high performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be retained after loss of system power. Its rugged magnetic technology and high IP rating make the Model A58HB an excellent choice, even in tough industrial environments. Available with bores up to 3/8" or 14 mm and two flexible mounting options, the Model A58HB 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 A58HB 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.

## MODEL A58HB SPECIFICATIONS

### Electrical

Input Voltage.....10 to 32 VDC max  
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.....1 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 TB529:**

**Understanding EPC's SSI Encoders**

Protection.....Galvanic Isolation with SSI option

### Mechanical

Max Shaft Speed.....6000 RPM

Shaft Rotation.....Bi-directional

Radial Run-out.....0.007" max

Axial Endplay..... $\pm 0.030$ " max

Radial Shaft Load.....17 lb (80 N) = bearing life of

$1 \times 10^9$  revolutions

Axial Shaft Load.....11 lb (50 N) = bearing life of

$1 \times 10^9$  revolutions

Starting Torque.....2.3 oz-in typical

Housing.....All metal with protective finish

Bearings.....2 precision ball bearings

Weight.....7.5 oz typical

### Environmental

Operating Temp..... $-40^\circ$  to  $85^\circ$  C

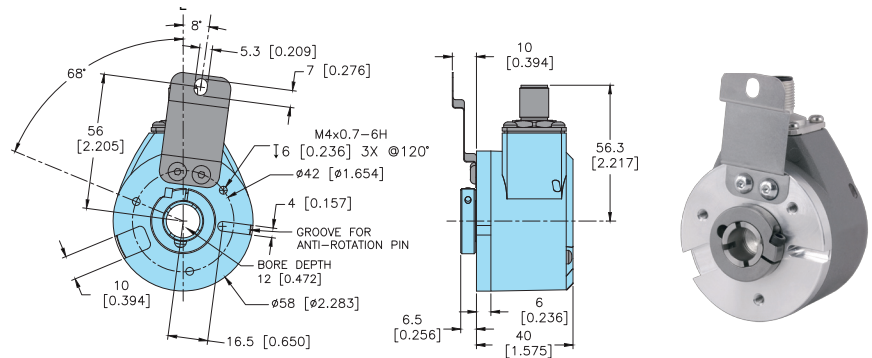
Storage Temp..... $-40^\circ$  to  $100^\circ$  C

Vibration.....5.1 g (10 Hz up to 2000 Hz)

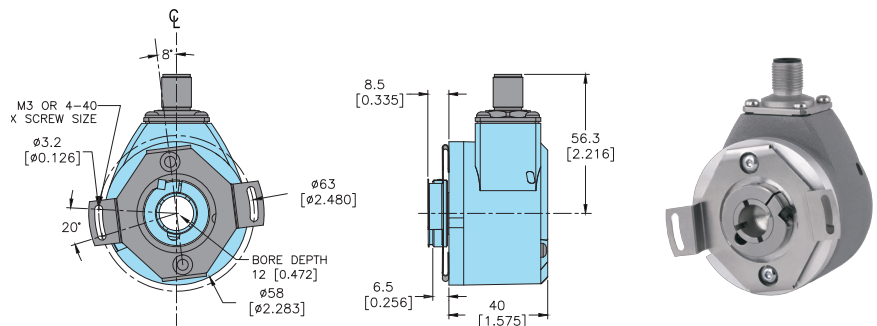
Shock.....100 g (6 ms)

Sealing.....IP67, shaft sealed to IP65

## MODEL A58HB 108 MM BC FLEX ARM (SQ)



## MODEL A58HB 63 MM 2 PT. FLEX MOUNT (SR)



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

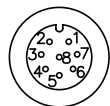
### WIRING TABLE

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.

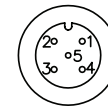
#### SSI ENCODERS



8-pin  
M12

Function	8-Pin M12
Ground (GND)	1
+VDC	2
SSI CLK+	3
SSI CLK-	4
SSI DATA+	5
SSI DATA-	6
PRESET	7
DIR	8
Shield	Housing

#### CANopen ENCODERS



5-pin  
M12

Function	5-Pin M12
+VDC	2
Ground (GND)	3
CAN <sub>HIGH</sub>	4
CAN <sub>LOW</sub>	5
CAN <sub>SHIELD</sub> / Shield*	1

\*M12 connector is connected to encoder housing.