MODEL A58HB - ABSOLUTE HOLLOW BORE ENCODER

Ø58 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
58 mm (2.28") diameter blind hollow bore encoder
Flex mount eliminates couplings and is ideal for motors and 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

Mechanical | Electrical

A58HB	–	06	SQ	–	14	18	CO	A	B	V2	–	RMJ

MODEL
A58HB Absolute series blind hollow bore encoder

BORE SIZE
06 6 mm
07 7 mm
08 8 mm
10 10 mm
12 12 mm
14 14 mm
A5 0.250", 1/4"
A9 0.375", 3/8"

MOUNTING TYPE
SQ 108 mm BC flex arm
SR 63 mm BC 2-pt. flex mount

SINGLE TURN RESOLUTION
01 to 16 Bit

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

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

SOFTWARE REV
A Revision A

OUTPUT CODE
B Binary
G Gray[3]

INPUT VOLTAGE
5 5 VDC[3]
V2 5 to 32 VDC

CONNECTOR TYPE[4]
RMJ 5-pin M12 radial mount[5]
RMK 8-pin M12 radial mount[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.

1-800-366-5412 | encoder.com | sales@encoder.com

MODEL A58HB - ABSOLUTE HOLLOW BORE ENCODER

MODEL A58HB SPECIFICATIONS

Electrical

Input Voltage ..... 5 to 32 VDC max
5 VDC SSI Only

Input Current ..... 50 mA typical for 5 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 ..... <± 0.0878°

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 ..... 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 EPC's SSI Encoders*

Protection ..... Galvanic Isolation with SSI option

Mechanical

Max Shaft Speed ..... 6,000 RPM

Shaft Rotation ..... Bi-directional

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

Axial Endplay ..... ±0.030" max

Radial Shaft Load ..... 17 lb (80 N) = bearing life of $1x10^9$ revolutions

Axial Shaft Load ..... 11 lb (50 N) max = bearing life of $1x10^9$ 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° to 85° C

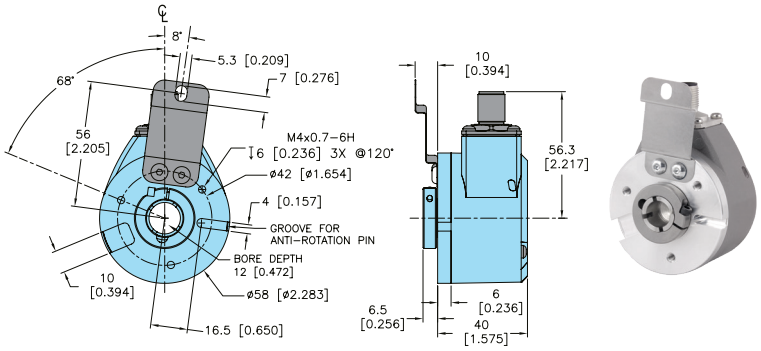
Storage Temp ..... -40° to 100° C

Vibration ..... 30.6 g (10 Hz up to 2000 Hz)

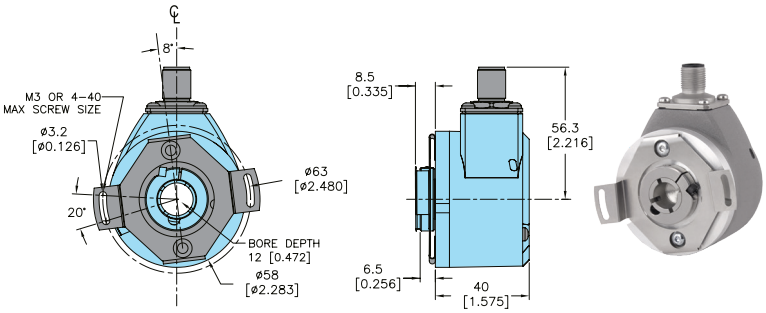
Shock ..... 510 g (6 ms)

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

MODEL A58HB 108 MM BC FLEX ARM (SQ)



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



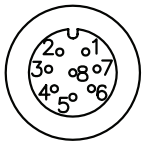
All dimensions are in inches with a tolerance of +0.005" or +0.01" unless otherwise specified. Metric dimensions are given in brackets [mm].

WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable.

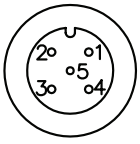
For CE (Conformity European) requirements, use M12 cordset with shield connected to M12 coupling nut. Trim back and insulate unused wires.

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_{High}	4
CAN_{Low}	5
CAN_{GND} / Shield	1

M12 connector is connected to encoder housing.

1-800-366-5412 | encoder.com | sales@encoder.com