

Model A58SB Absolute Shaft Encoder



SSI
Synchronous Serial Interface

Ø58.0 mm

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
- 58mm Diameter Solid Shaft Encoder
- Meets CE/EMC Standards for Immunity and Emissions

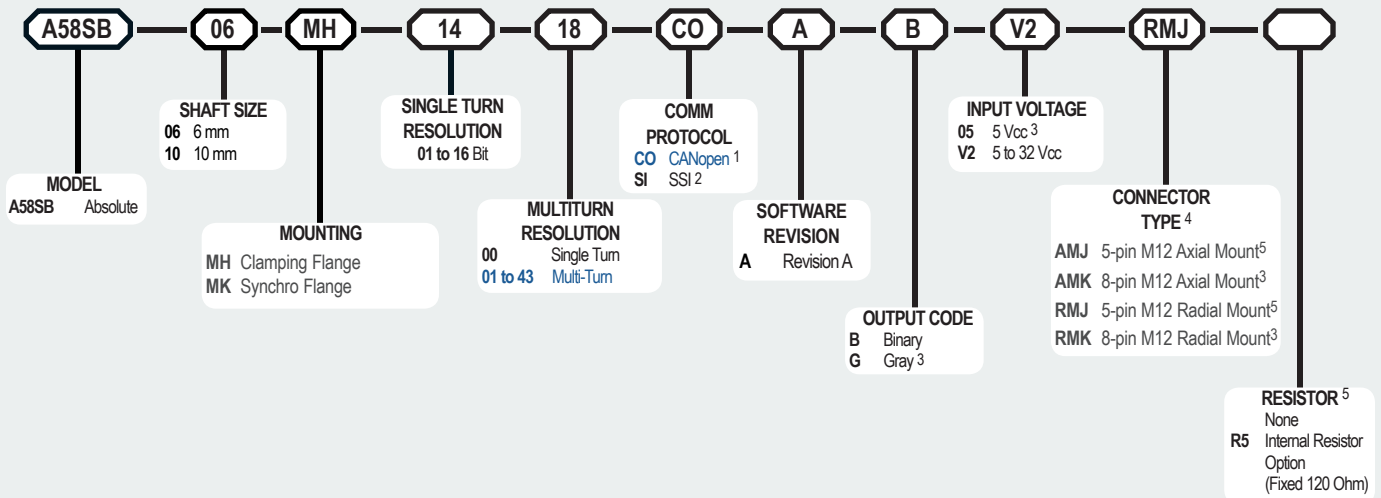
The Model A58SB Absolute Encoder offers a high performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be retained after loss of system power. Its rugged magnetic technology and high IP rating make the Model A58SB an excellent choice, even in tough industrial environments. Available with 2 shaft sizes, 6mm and 10mm and two mounting options, the Model A58SB 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 XY Positioning Tables

Model A58SB Ordering Guide

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



For specification assistance call
Customer Service at
+44 (0)1978 262100

NOTES:

- 1 Please Refer to the [CANOpen Interface Technical Manual](http://www.encoder.co.uk) at www.encoder.co.uk
- 2 Please Refer to Technical Bulletin: [TB-529 Understanding BEPC SSI Encoders](http://www.encoder.co.uk) at www.encoder.co.uk
- 3 Available with SSI Only.
- 4 For Connectors, Cables and Cordsets please visit the [Accessories](http://www.encoder.co.uk) section at www.encoder.co.uk or in our Catalogue.
- 5 Available with CANopen Only.

Model A58SB Absolute Shaft Encoder

Model A58SB 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 $\pm 0.35^\circ$
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

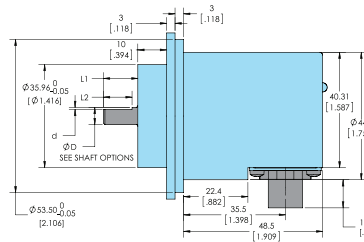
Mechanical

Max Shaft Speed 6,000 RPM
Shaft Rotation Bi-directional
Radial Shaft Load Bearing life of 1x10⁹ Revolutions: 6mm
dia - 125N; 10mm dia - 220N
Axial Shaft Load Bearing life of 1x10⁹ Revolutions: 6mm
dia - 120N; 10mm dia - 120N
Starting Torque 0.0162 N-m typical
Housing All metal with protective finish
Bearings 2 precision ball bearings
Weight 210 grams typical

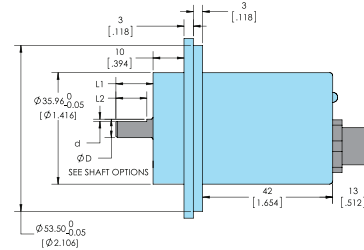
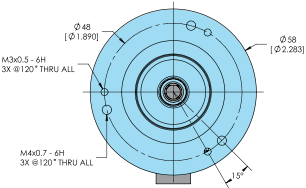
Environmental

Operating Temp -40° to +85° C
Storage Temp -25° to +100° C
Vibration 5.1 g @ 10 Hz to 2000 Hz
Shock 100 g @ 6 ms duration
Sealing IP67, shaft sealed to IP65

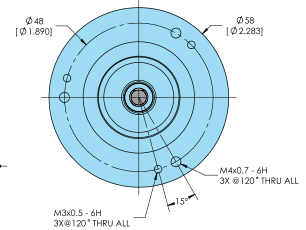
Model A58SB Clamping Flange (MH)



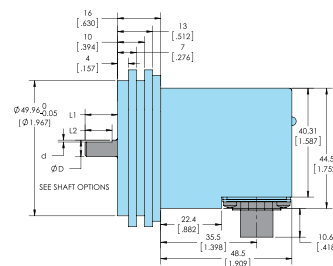
Radial Connector



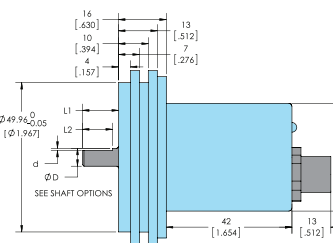
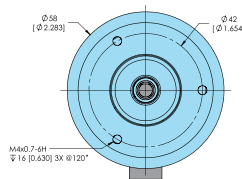
Axial Connector



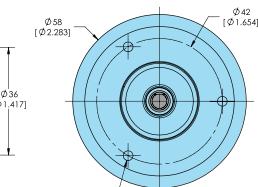
Model A58SB Synchro Flange (MK)



Radial Connector



Axial Connector

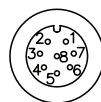


Primary dimensions are in mm, Secondary dimensions SI (Inches) in brackets for reference only

Shaft Sizes

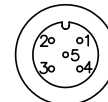
SHAFT SIZE	ØD	L1	d	L2
6mm	6 [0.236]	12 [0.472]	0.70 [0.028]	10 [0.394]
10mm	10 [0.394]	20 [0.787]	no flat	n/a

Wiring Tables



SSI Encoders 8 Pin M12

Function	8-pin M-12
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 M-12
+VDC	2
Ground (GND)	3
CAN _{High}	4
CAN _{Low}	5
CAN _{GND} / Shield	1

For BEPc supplied mating cables, refer to the wiring table provided with cable.

For CE requirements, use M12 cordset with shield connected to Connector Case.