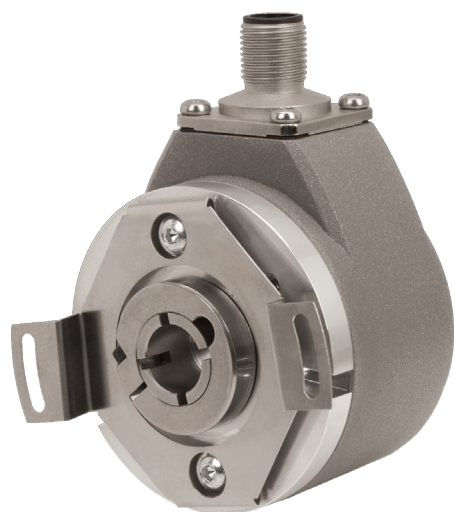


# MODEL MA58H – MULTI-TURN ABSOLUTE ENCODER



Ø58 mm

## FEATURES

- Multi-Turn Absolute Encoder (14 Bit/39 Bit)
- SSI and CANopen Communications
- 58 mm Diameter
- Durable Magnetic Technology
- Proven Turns Counting Technology – No Gears or Batteries
- Retains Absolute Position After a Power Outage

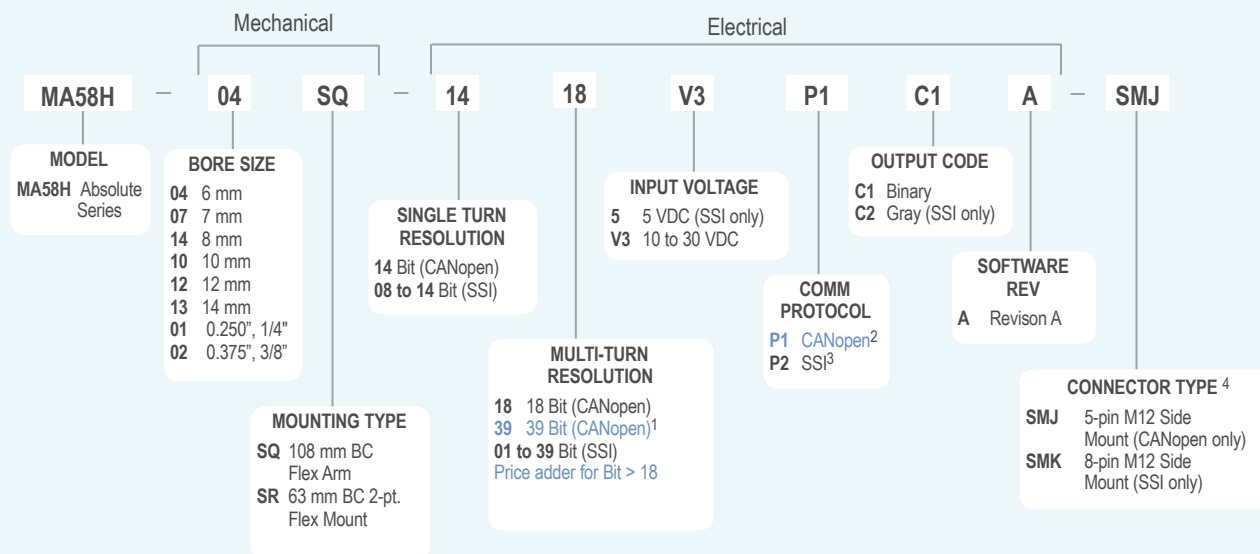
The Model MA58H absolute encoder is a heavy duty, rugged and reliable multi-turn hollow-bore absolute encoder. This encoder is designed for harsh factory and plant floor environments, and is especially suited to applications where you need an encoder to retain position information after power-off scenarios. The Model MA58H has an operating temperature range of -40° C to 85° C and a sealing rating of IP65 on the shaft, with the balance of the unit rated to IP67. Available with bores up to 3/8" or 14 mm, and with two flexible mounting options, the Model MA58H is easily designed into a variety of applications.

## COMMON APPLICATIONS

Motion Control Feedback, Machine & Elevator Controls, Food Processing, Robotics, Material Handling, Conveyors, Textile Machines

## MODEL MA58H ORDERING GUIDE

Blue type indicates price adder options. For single turn applications, see Model SA58H.



### NOTES:

- Additional lead time required.
- See *CANopen Interface Technical Reference Manual* at [www.encoder.com](http://www.encoder.com).
- See *Technical Bulletin TB529: Understanding EPC's SSI Encoders* at [www.encoder.com](http://www.encoder.com).
- For mating connectors and cordsets, see Accessories or visit [www.encoder.com](http://www.encoder.com). For Connector Pin Configuration Diagrams, see Wiring Table on following page.

## MODEL MA58H SPECIFICATIONS

### Electrical

Input Voltage..... 10 to 30 VDC max  
 5 VDC SSI Only  
 Input Current ..... 50 mA typical for 10 to 30 VDC  
 80 mA typical for 5 VDC

### Power:

Consumption..... 0.5 W max

### Resolution:

Single Turn..... 14 bit (CANopen)  
 8 to 14 bit (SSI)  
 Multi-Turn..... Up to 39 bit multi-turn  
 Accuracy.....  $\pm 0.35^\circ$   
 Repeatability.....  $\pm 0.2^\circ$

### 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 proto-  
 col (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

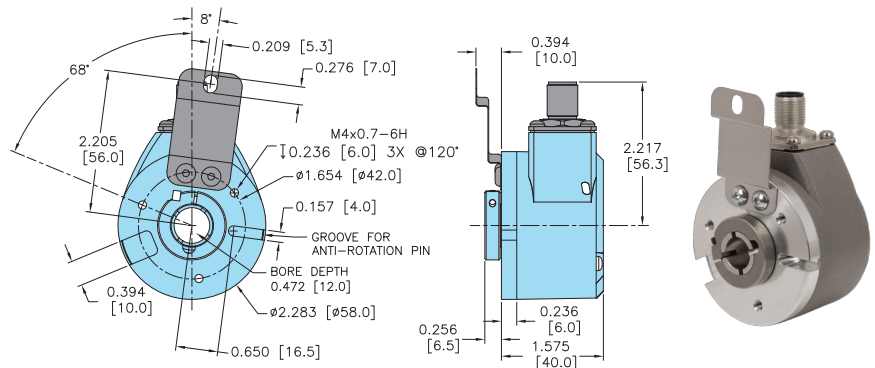
### Mechanical

Max Shaft Speed..... 6000 RPM  
 Shaft Rotation..... Bi-directional  
 Radial Run-out..... 0.007" max  
 Axial Endplay.....  $\pm 0.030$ " max  
 Radial Shaft Load..... 18 lb max. Max load bearing life of  $1 \times 10^9$   
 revolutions  
 Axial Shaft Load..... 11 lb max. Max load 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

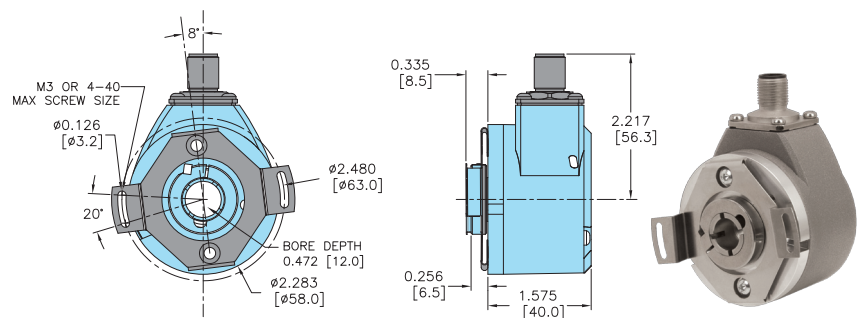
### Environmental

Operating Temp.....  $-40^\circ$  to  $85^\circ$  C  
 Storage Temp.....  $-25^\circ$  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 MA58H 108 MM BC FLEX ARM (SQ)



## MODEL MA58H 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.

SSI ENCODERS		CANopen ENCODERS	
Function	8-Pin M12	Function	5-Pin M12
Ground (GND)	1	+VDC	2
+VDC	2	Ground (GND)	3
SSI CLK+	3	CAN <sub>HIGH</sub>	4
SSI CLK-	4	CAN <sub>LOW</sub>	5
SSI DATA+	5	CAN <sub>GND</sub> / Shield*	1
SSI DATA-	6		
PRESET	7		
DIR	8		
Shield	Housing		

\*M12 connector is connected to encoder housing.

For CE requirements, use cable cordset with shield connected to M12 coupling nut.