**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

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**MODEL A58HB ORDERING GUIDE**

Blue type indicates price adder options.

<table>
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<tr>
<th>Mechanical</th>
<th>Electrical</th>
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<td>A58HB</td>
<td></td>
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<tr>
<td>06</td>
<td>SQ</td>
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<tr>
<td>6 mm</td>
<td>14</td>
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<td>18</td>
<td>CO</td>
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<tr>
<td>01 to 16 Bit</td>
<td>Single Turn Resolution</td>
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<tr>
<td>00</td>
<td>A</td>
</tr>
<tr>
<td>01 to 43 Multi-Turn</td>
<td>Comm Protocol</td>
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<tr>
<td>00</td>
<td>B</td>
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<tr>
<td>14 mm</td>
<td>V4</td>
</tr>
<tr>
<td>A5</td>
<td>INPUT VOLTAGE</td>
</tr>
<tr>
<td>0.250&quot;, 1/4&quot;</td>
<td>5 VDC*</td>
</tr>
<tr>
<td>A9</td>
<td>V4</td>
</tr>
<tr>
<td>0.375&quot;, 3/8&quot;</td>
<td>10 to 32 VDC</td>
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<tr>
<td>SQ</td>
<td>CONNECTOR TYPE</td>
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<tr>
<td>108 mm BC Flex Arm</td>
<td>RMJ</td>
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<tr>
<td>SR</td>
<td>5-pin M12 Radial Mount</td>
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<tr>
<td>63 mm BC 2-pi. Flex Mount</td>
<td>8-pin M12 Radial Mount</td>
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**NOTES:**

3. Available with SSI only.
4. For mating connectors, cables, and cordsets see Accessories 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.............. <± 0.35°
Repeatability......... <± 0.2°
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

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........ ± 0.030” max
Radial Shaft Load.... 17 lb (80 N) = bearing life of 1x10^9 revolutions
Axial Shaft Load.... 11 lb (50 N) = 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.............. 5.1 g (10 Hz up to 2000 Hz)
Shock................... 100 g (6 ms)
Sealing............... IP67, shaft sealed to IP65

WIRING TABLE
For EPC-supplied mating cables, refer to wiring table provided with cable.
For CE (Conformity European) requirements, use M12 connector with shield connected to M12 coupling nut.
Trim back and insulate unused wires.

SSI ENCODERS
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
Function 5-Pin M12
Ground (GND) 2
+VDC 3
CAN CLK 4
CAN DATA 5
CAN _/ Shield* 1

* M12 connector is connected to encoder housing.

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

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