### 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

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**MODEL A58HB ORDERING GUIDE**

Blue type indicates price adder options

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL A58HB</td>
<td>BORE SIZE</td>
</tr>
<tr>
<td>Absolute series blind hollow bore encoder</td>
<td>06 6 mm</td>
</tr>
<tr>
<td>MOUNTING TYPE</td>
<td>MULTI-TURN RESOLUTION</td>
</tr>
<tr>
<td>SQ 108 mm BC flex arm</td>
<td>00 Single Turn</td>
</tr>
<tr>
<td>SR 63 mm BC 2-pt. flex mount</td>
<td>01 to 43 Multi-Turn</td>
</tr>
</tbody>
</table>

**Notes:**
- 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.

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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………………….. <± 0.007°
Repeatability……………….. <± 0.007°
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
LS5 (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 time, 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 1x10⁶ revolutions
Axial Shaft Load…………….. 11 lb (50 N) max = bearing life of 1x10⁶ 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………………… 3.8 g (10 Hz up to 2000 Hz)
Shock………………… 310 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)

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

<table>
<thead>
<tr>
<th>Function</th>
<th>8-Pin M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground (GND)</td>
<td>1</td>
</tr>
<tr>
<td>+VDC</td>
<td>2</td>
</tr>
<tr>
<td>SSI CLK+</td>
<td>3</td>
</tr>
<tr>
<td>SSI CLK</td>
<td>4</td>
</tr>
<tr>
<td>SSI DATA+</td>
<td>5</td>
</tr>
<tr>
<td>SSI DATA-</td>
<td>6</td>
</tr>
<tr>
<td>PRESET</td>
<td>7</td>
</tr>
<tr>
<td>DIR</td>
<td>8</td>
</tr>
<tr>
<td>Shield</td>
<td>Housing</td>
</tr>
</tbody>
</table>

CANopen Encoders
5-pin M12

<table>
<thead>
<tr>
<th>Function</th>
<th>5-Pin M12</th>
</tr>
</thead>
<tbody>
<tr>
<td>+VDC</td>
<td>2</td>
</tr>
<tr>
<td>Ground (GND)</td>
<td>3</td>
</tr>
<tr>
<td>CANhigh</td>
<td>4</td>
</tr>
<tr>
<td>CANlow</td>
<td>5</td>
</tr>
<tr>
<td>CAN/GND / Shield</td>
<td>1</td>
</tr>
</tbody>
</table>

M12 connector is connected to encoder housing.