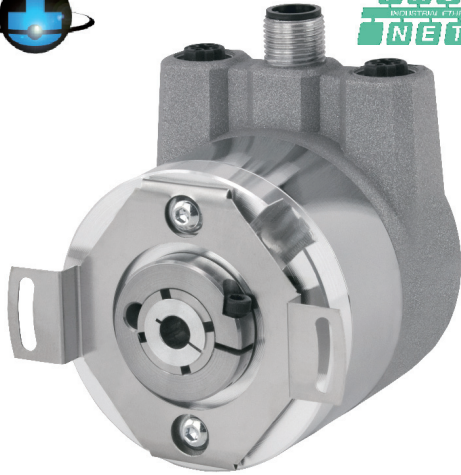


Model A58HE - Hollow Bore EtherNet Absolute Encoder




Features

- Single/Multi-Turn Absolute Encoder (16 Bit ST / 43 Bit MT)
- Available in two industrial Ethernet protocols:
EtherCAT with CoE, FoE, EoE – device profile: CiA DS-406 V4.0.2, Class 3
EtherNet/IP™ position sensor, DLR
PROFINET I-O (CC-C) – device profile: switchable V4.1, Class 3, 4
- Maintenance-free and environmentally-friendly magnetic design
- Energy-harvesting magnetic multi-turn technology
- No gears or batteries
- Low TCO and easy provisioning with internal web server
- Color LEDs for operating condition, bus status, link activity
- 58 mm (2.28") diameter package
- Compact design with bus cover

BEPC Absolute Encoder - now with EtherCAT Connectivity

The Model A58HE is an EtherCAT®, EtherNet/IP™, or PROFINET® protocol, multi-turn absolute encoder designed for heavy duty industrial applications. It is particularly suited to applications where Ethernet-based connectivity is required, and the encoder must retain position information after power-off events. Easily designed into a wide variety of system applications, the A58HE plugs directly into your network with minimal provisioning for rapid deployment, facilitating data exchange among myriad networked devices. The Model A58HE retains absolute position information even after a power loss, facilitating speedy system recovery at start-up without the need for system re-homing.

Ready for Industry 4.0 and for the Industrial Internet of Things (IIoT), data exchange between the Model A58HE and other applications has no influence on the control loop. The Model A58HE is non-reactive and can work independently from the PLC or master, transferring data through network gateways to other automation networks and sites, and up to the cloud for analysis.

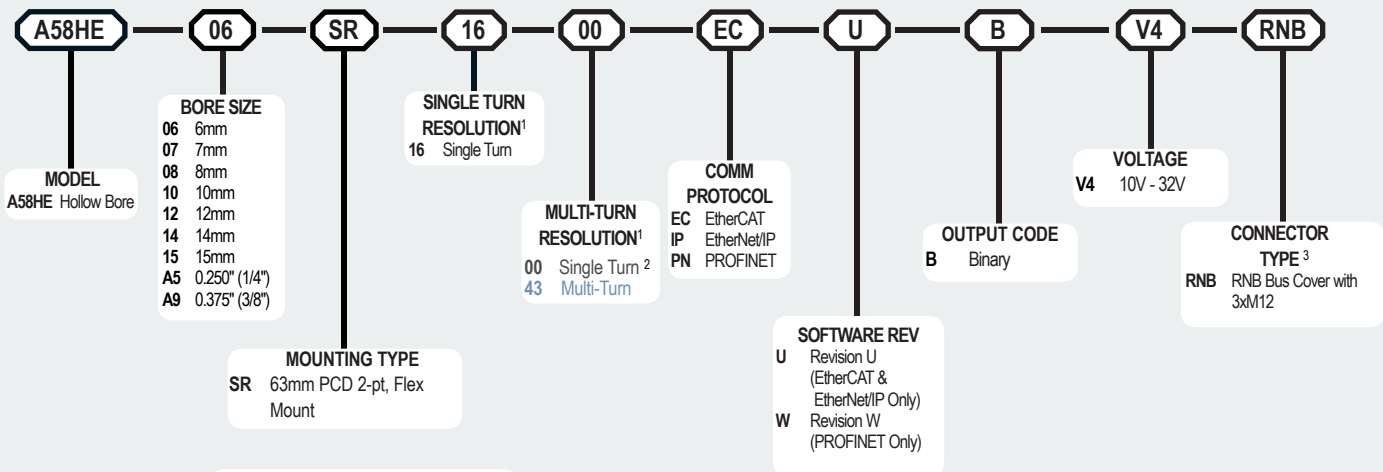
EtherCAT®  **EtherNet/IP™**
Ø58.0 mm

Common Applications

Robotics, Telescopes, Antennas, Medical Scanners, Wind Turbines, Elevators, Lifts, Motors, Automatic Guided Vehicles, Rotary and X/Y Positioning Tables

Model A58HE 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

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EtherCAT® (Ethernet for Control and Automation Technology) is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany. EtherNet/IP™ is a trademark of ODVA, Inc. PROFINET® is a registered trademark and patented technology, licensed by PU (PROFIBUS & PROFINET) International.

NOTES:

- 1 Customer configures at setup.
- 2 Single turn encoders cannot be configured for multi-turn resolution.
- 3 For mating connectors, cables, and cordsets see [Accessories](http://encoder.co.uk) at encoder.co.uk

Model A58HE - Hollow Bore EtherNet Absolute Encoder

Model A58HE Specifications

Electrical

Power Supply10 VDC up to 32 VDC
 Current Consumption typ. 125 mA
 Power Consumption..typ. 3 W

Sensor Specification

Internal Cycle Time....50 µs
 Resolution
 Single TurnUp to 65,536 steps/360° (16 bit)
 Multi-Turn.....43 bit
 Accuracy
 Single Turn± 0.0878° (≤ 12 bit)
 Single Turn, Repeat Accuracy ± 0.0878° (≤ 12 bit)
 Technology
 Single TurnInnovative Hall-sensor technology
 Multi-Turn.....Patented energy-harvesting technology,
 no battery and no gears
 Turn on time< 1.5 s

Interface

InterfaceIndustrial Ethernet
 Protocol.....EtherCAT, EtherNet/IP, PROFINET-IO (CC-C)
 Device ProfileEtherCAT: CiA DS-406 V4.0.2, Class 3;
 EtherNet/IP: Conformance per CT-18,
 Specification Vol 2, Ed 1.29, CIP
 Specification Vol 1, Ed 3.31;
 PROFINET: V4.1, Class 3, 4
 Data Transfer100BASE-TX
 Cycle timeEtherCAT: up to 50 µs
 EtherNet/IP: 1 ms
 PROFINET: 250 µs, applicable for up to
 125 µs
 CodeBinary, CW default, programmable
 Programmable Parameters Steps per revolution; counts of
 revolution; preset; scale; counting direction
 EtherCAT: 2x 8 cam switches; DC-Mode
 EtherNet/IP: CAMs, warning messages
 PROFINET: MRPD; MRP; LLDP; IRT
 See associated protocol Technical
 Reference Manual for full list of program-
 mable attributes for that protocol.
 Diagnostic LEDTraffic and connection management:
 L/A1: Port 1 (IN) L/A2: Port 2 (OUT)
 Status LED.....STAT, MOD: status of encoder and bus

Mechanical

Flange.....Blind hollow bore
 Flange Material.....Aluminum
 Shaft MaterialStainless steel
 Shaft Length17 mm
 Insertion depth
 min.....10 mm
 max.....19 mm
 Housing Cap.....Steel case chrome-plated, magnetic
 shielding
 Connection Cover.....Die cast aluminum, powder coated
 Weight14.462 oz / 410 g approx
 Max Radial Shaft Load 80 N (17.9 lb)
 Max Axial Shaft Load 50 N (11.2 lb)
 Starting TorqueApproximately 1.6 Ncm (2.226 oz-in) at
 ambient temperature.
 Max Shaft Speed.....6000 RPM

Bearings

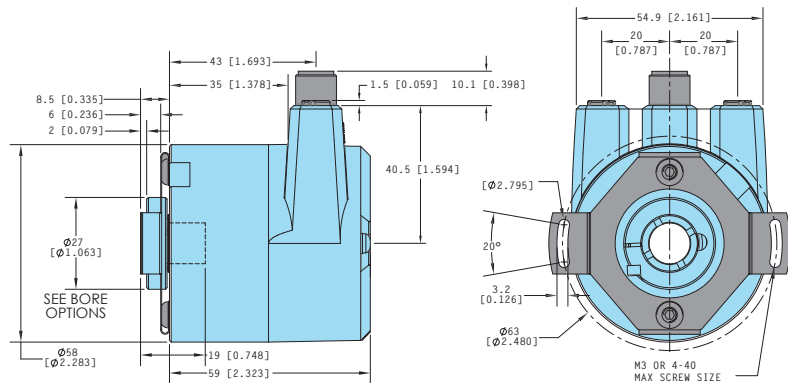
Bearings Type2 precision ball bearings
 Nominal Service Life 1 x 109 revs. at 100% rated shaft load
 1 x 1010 revs. at 40% rated shaft load
 1 x 1011 revs. at 20% rated shaft load

Environmental

Operating Temp.....-40° to 85° C
 Storage Temp-40° to 100° C
 Sealing.....IP65 tested per EN 60529
 ESD8 kV tested per EN 61000-4-2
 Burst2 kV tested per 61000-4-4
 EMCEN 61000-6-2; EN 61000-6-3
 Vibration.....200 m/s² (10 Hz up to 1000 Hz)
 (20.3 g [10Hz up to 1000 Hz])
 tested per EN 60068-2-6
 Shock.....5000 m/s² (6 ms)
 509.8 g (6 ms)
 tested per EN 60068-2-27
 DesignAccording to DIN VDE 0160



Model A58HE 63 mm 2 pt. Flex mount (SR)



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

NETWORK BUS CONNECTOR PINOUT

Bus cover with 3x M12x1

For BEPC-supplied mating cables, wiring table is provided with cable. Trim back and insulate unused wires.

| Female Connector Port 1 (In) | | Power | | Female Connector Port 2 (Out) | |
|------------------------------|-----------------------|-------------|-----------------------|-------------------------------|-----------------------|
| Assignments | RNB | Assignments | RNB | Assignments | RNB |
| | | | | | |
| Function | M12x1, 4-pin, D-coded | Function | M12x1, 4-pin, A-coded | Function | M12x1, 4-pin, D-coded |
| Tx+ | 1 | (+) Vcc | 1 | Tx+ | 1 |
| Rx+ | 2 | n. c. | 2 | Rx+ | 2 |
| Tx- | 3 | GND | 3 | Tx- | 3 |
| Rx- | 4 | n. c. | 4 | Rx- | 4 |

MATING CABLES/CORDSETS

| DC Power Cable A-Code | | Signal Cable D-Code, M12 4-Pin to RJ-45 | | Signal Cable D-Code, M12 4-Pin to M12 4-Pin | |
|-----------------------|--------|---|--------|---|--------|
| Stock # | Length | Stock # | Length | Stock # | Length |
| 075241 | 2 m | 075245 | 2 m | 075249 | 2 m |
| 075242 | 5 m | 075246 | 5 m | 075250 | 5 m |
| 075243 | 10 m | 075247 | 10 m | 075251 | 10 m |
| 075244 | 20 m | 075248 | 20 m | 075252 | 20 m |