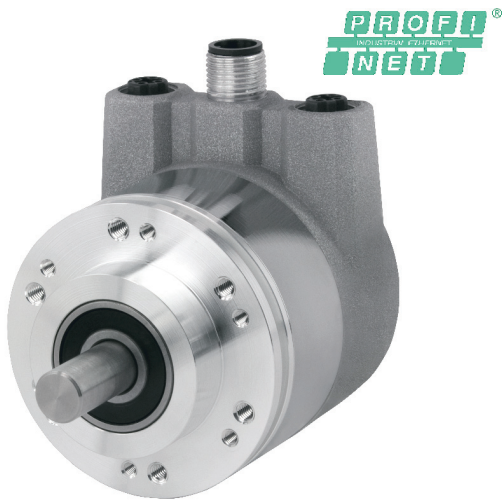


Model A58SE - Solid Shaft EtherNet Absolute Encoder



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
- Shaft loads up to 400 Newtons
- Color LEDs for operating condition, bus status, link activity
- 58 mm (2.28") diameter package
- MP Housing Option is most the compact EtherCAT model available
- Compact design with bus cover

BEPC Absolute Encoder - now with EtherCAT Connectivity

The Model A58SE 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 A58SE plugs directly into your network with minimal provisioning for rapid deployment, facilitating data exchange among myriad networked devices. The Model A58SE 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 A58SE and other applications has no influence on the control loop. The Model A58SE 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

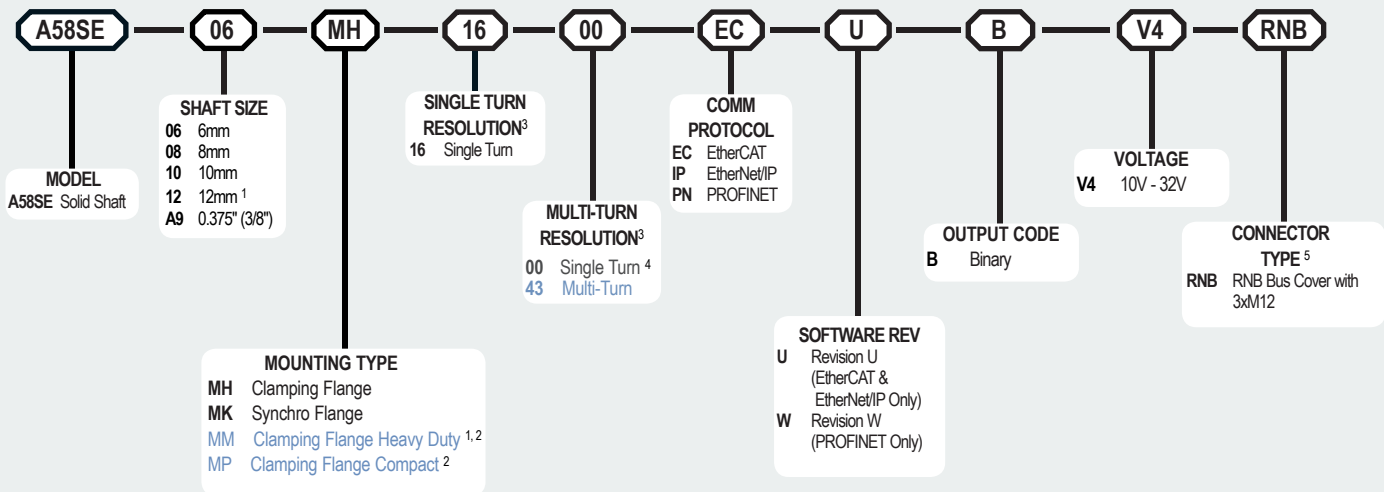
Common Applications

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

Model A58SE 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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See encoder.co.uk for more information.

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 The 12mm shaft is the only shaft option available with the MM, and is not available with any other Mount.
- 2 Additional lead times required.
- 3 Customer configures at setup.
- 4 Single turn encoders cannot be configured for multi-turn resolution.
- 5 For mating connectors, cables, and cordsets see [Accessories](#) at encoder.co.uk

Model A58SE - Solid Shaft EtherNet Absolute Encoder

Model A58SE Specifications

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

Sensor Specification
 Internal Cycle Time50 µs
 Resolution
 Single Turn.....Up 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 Turn.....Innovative Hall-sensor technology
 Multi-Turn.....Patented energy-harvesting technology, no battery and no gears

Turn on time.....< 1.5 s

Interface
 Interface.....Industrial Ethernet
 Protocol.....EtherCAT, EtherNet/IP, PROFINET-IO (CC-C)
 Device Profile.....EtherCAT: 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

Code.....Binary, 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; LLD; IRT
 See associated protocol Technical Reference Manual for full list of programmable attributes for that protocol.

Diagnostic LEDTraffic and connection management
 L/A1: Port 1 (IN) L/A2: Port 2 (OUT)

Status LEDSTAT, MOD: status of encoder and bus

Mechanical
 Flange.....Synchro, Clamping, Clamping Heavy Duty, Clamping Compact
 Flange Material.....Aluminum
 Shaft Material.....Stainless steel

Shaft Length
 6 mm dia.....12 mm length
 8 mm dia.....19 mm length
 10 mm dia.....20 mm length
 3/8" dia.....20 mm / 0.787" length
 12 mm dia.....25 mm length

Housing Cap.....Steel case chrome-plated, magnetic shielding
 Connection Cover.....Die cast aluminum, powder coated

Weight24.7 oz / 700 g approx

Max Radial Shaft Load
 MH and MK.....125 N (28.1 lb) for 6 mm and 8 mm shafts
 220 N (49.4 lb) for 10 mm and 3/8" shafts
 MM.....400 N (89.9 lb)
 MP.....60 N (13.5 lb)

Max Axial Shaft Load
 MH and MK.....120 N (27 lb)
 MM.....400 N (89.9 lb)
 MP.....50 N (11.2 lb)

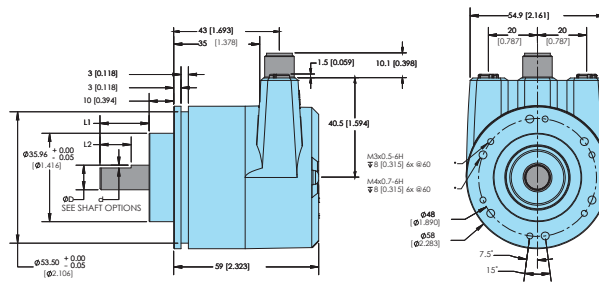
Starting Torque.....Approximately 1 Ncm (1.416 oz-in) at ambient temperature.

Max Shaft Speed.....8000 RPM

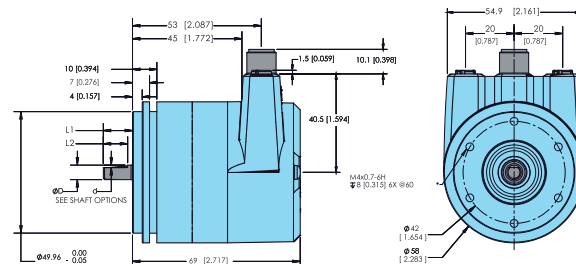
Bearings
 Bearings Type.....2 precision ball bearings
 Nominal Service Life1 x 109 revs. at 100% rated shaft load
 1 x 1010 revs. at 40% rated shaft load
 1 x 1011 revs. at 20% rated shaft load

Environmental
 Operating Temp.....-40° to 85° C
 Storage Temp.....-40° to 100° C
 SealingIP65 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
 Vibration200 m/s² (10 Hz up to 1000 Hz)
 (20.3 g (10Hz up to 1000 Hz) tested per EN 60068-2-6
 Shock5000 m/s² (6 ms)
 509.8 g (6 ms)
 tested per EN 60068-2-27
 Design.....According to DIN VDE 0160

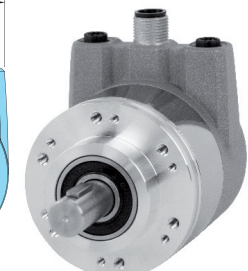
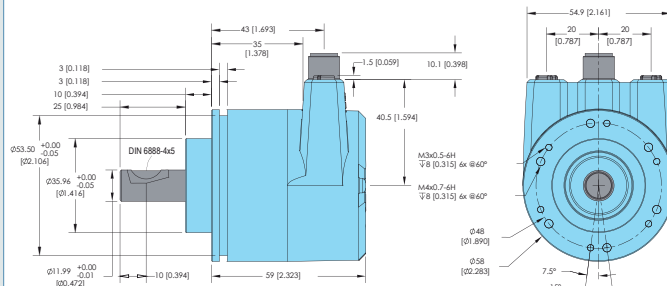
Model A58SE Clamping Flange (MH)



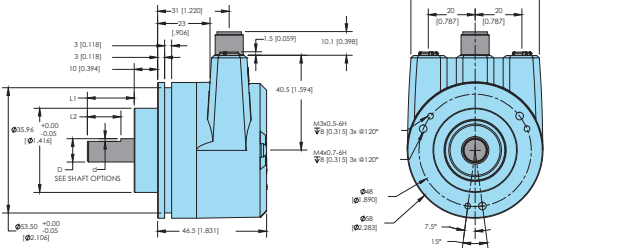
Model A58SE Synchro Flange (MK)



Model A58SE Clamping Flange Heavy Duty (MM)



Model A58SE Clamping Flange Compact (MP)



Primary dimensions are in mm, secondary dimensions SI units [inches] in brackets for reference only.
 For Shaft Sizes please refer to table below

SHAFT SIZE	Ø D	L1	d	L2
6mm	6 [0.236]	12 [0.472]	0.7 [0.028]	10 [0.394]
8mm	8 [0.315]	19 [0.748]	0.5 [0.020]	15 [0.591]
10mm	10 [0.394]	20 [0.787]	no flat	n/a
3/8"	9.5 [0.375]	20 [0.787]	1.2 [0.047]	10 [0.394]

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