Model MA36H
MultiTurn Absolute

BRITISH ENCODER
PRODUCTS COMPANY

Features

- Standard Size 36 mm Package
- Durable Magnetic Technology
- Multiturn Absolute Encoder (14 Bit/40 Bit)
- *SSI and* CANopen Communications
- Proven New Turns Counting Technology - No Gears or Batteries
- Flex Mount Eliminates Couplings and is Ideal for Motors or Shafts

The Model MA36H Multiturn Absolute Encoder is ideal for a wide variety of industrial applications that require an encoder with the capability of absolute positioning output. Its fully digital output and innovative use of battery-free multiturn technology make the Model MA36H an excellent choice for all applications, especially ones with a high presence of noise. Its durable magnetic technology and high sealing make it a perfect choise for dirty industrial environments. Available with a 1/4" or 6 mm hollow bore and a selection of flexible mounting options, the Model MA36H is easily designed into a variety of applications.
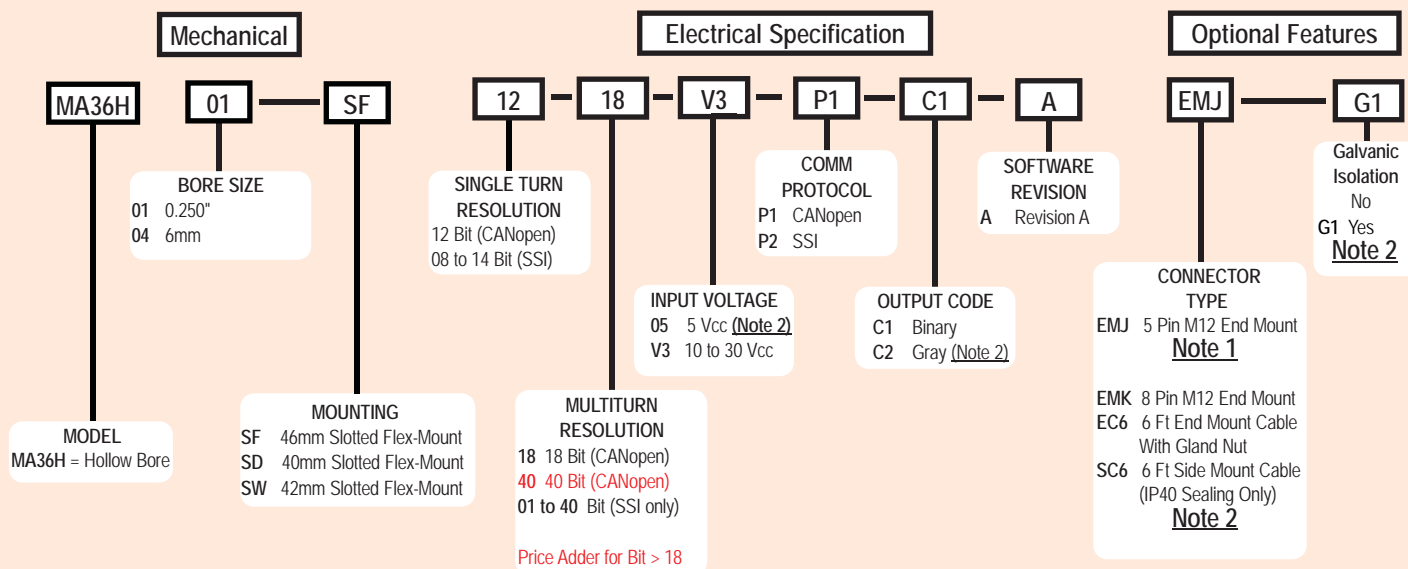
Ø36 mm

Common Applications

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

Model MA36H Ordering Guide

For Single turn applications see Model SA36H

Red type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details.

Mechanical

| MA36H | 01 | SF |

BORE SIZE
01 0.250"
04 6mm

MODEL
MA36H = Hollow Bore

MOUNTING
SF 46mm Slotted Flex-Mount
SD 40mm Slotted Flex-Mount
SW 42mm Slotted Flex-Mount

Electrical Specification

| 12 | 18 | V3 | P1 | C1 | A |

SINGLE TURN RESOLUTION
12 Bit (CANopen)
08 to 14 Bit (SSI)

MULTITURN RESOLUTION
18 18 Bit (CANopen)
40 40 Bit (CANopen)
01 to 40 Bit (SSI only)

Price Adder for Bit > 18

INPUT VOLTAGE
05 5 Vcc (Note 2)
V3 10 to 30 Vcc

COMM PROTOCOL
P1 CANopen
P2 SSI

OUTPUT CODE
C1 Binary
C2 Gray (Note 2)

SOFTWARE REVISION
A Revision A

Optional Features

| EMJ | G1 |

CONNECTOR TYPE
EMJ 5 Pin M12 End Mount
      Note 1
EMK 8 Pin M12 End Mount
EC6 6 Ft End Mount Cable
      With Gland Nut
SC6 6 Ft Side Mount Cable
      (IP40 Sealing Only)
      Note 2

Galvanic Isolation
      No
G1 Yes
Note 2

For specification assistance call Customer Service at +44 (0)1978 262100

Notes:
1 Only available with CANopen.
2 Only available with SSI.

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Model MA36H Specifications

Electrical
Input Voltage .... 10 to 30 Vcc max SSI or CAN
5 Vcc SSI Only
Input Current .... 50 mA max with no external load
Power Consumption . 0.5 W max
Resolution (Single) ... 12 bit (CAN)
8 to 14 bit (SSI)
Resolution (Multi) ..... Up to 40 bit multiturn (CANopen or SSI)
Accuracy .... Less than .15° (CANopen)
Less than .35° (SSI)

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
The standard settings as well as any customization in the software can be changed via LSS (CiA 305) and the SDO protocol, e.g. PDOs, scaling, heartbeat, node-ID, baud rate, etc

Programmable CAN Transmission Modes
Synchronous .... When a synchronisation telegram (SYNC) is received from another bus node, PDOs are transmitted independantly
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 ... 100KHz to 500KHz
Data Output .... RS485 / RS422 compatable
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)
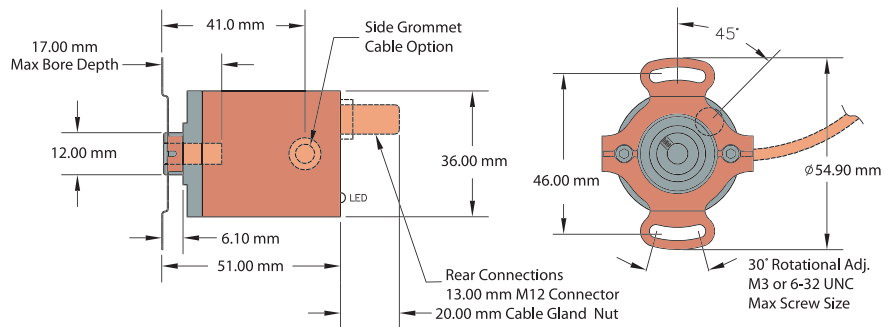Set to Zero .... Apply Vcc for 2 sec

Mechanical
Max Shaft Speed ...... 12,000 RPM
Bore Size .... 6 mm, .250"
Bore Depth .... 17 mm
User Shaft
Radial Runout .... 0.005" max
Starting Torque .... <0.45 oz-in typical
Housing .... Ferrous chrome-plated magnetic screening
Mounting .... Hollow shaft with flex mount
Weight .... 630 gms typical

Environmental
Operating Temp .... -40° to +80° C
Storage Temp .... -40° to +100° C
Humidity .... 95% RH non-condensing
Vibration .... 5 g @ 10 to 2000 Hz
Shock .... 100 g @ 6 ms duration
Sealing .... IP64, shaft sealed to IP65

Model MA36H 46mm Slotted Flex Mount (SF)

17.00 mm Max Bore Depth
41.0 mm
12.00 mm
6.10 mm
51.00 mm
Side Grommet Cable Option
36.00 mm
LED
Rear Connections
13.00 mm M12 Connector
20.00 mm Cable Gland Nut
45°
46.00 mm
∅54.90 mm
30° Rotational Adj.
M3 or 6-32 UNC
Max Screw Size

Model MA36H Optional Flex Mounts

40mm : SD

∅5.54 mm
Use 4-40 UNC or M2.5 Screws
45°
47.30 mm
∅40.00 mm
20°
Rotational Adjustment

42mm : SW

Note Rear Connections And Side Grommet Orientation Is Different From Other Flex Mounts.
∅42.00 mm
∅48.00 mm
Max. Screw Size M3 or 4-40 UNC
20° Rotational Adjustment
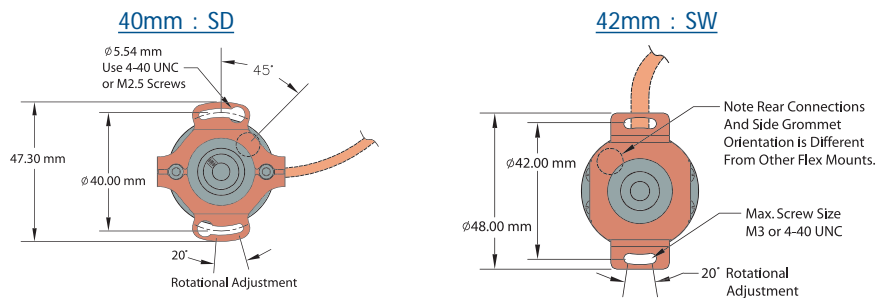
Wiring Table

CANopen Encoders

Function	Pin
U$_B$	2
Ground (GND)	3
CAN$_{High}$	4
CAN$_{Low}$	5
CAN$_{GND}$ / shield	1

SSI Encoders

Function	8-pin M12	Cable
Ground (GND)	1	White
+Vcc	2	Brown
SSI CLK+	3	Green
SSI CLK-	4	Yellow
SSI DATA+	5	Gray
SSI DATA-	6	Pink
PRESET	7	Blue
DIR	8	Red
Shield	housing	Side Exit - Housing End Exit - N/C