

# MODEL MA36H – MULTITURN ABSOLUTE ENCODER



Ø36 mm

## FEATURES

- Standard Size 36 mm Package (1.42")
- Durable Magnetic Technology
- Multiturn Absolute Encoder (14 Bit/40 Bit)
- SSI and CANopen Communications
- Proven Turns Counting Technology—No Gears or Batteries
- Flex Mount Eliminates Couplings and is Ideal for Motors or Shafts

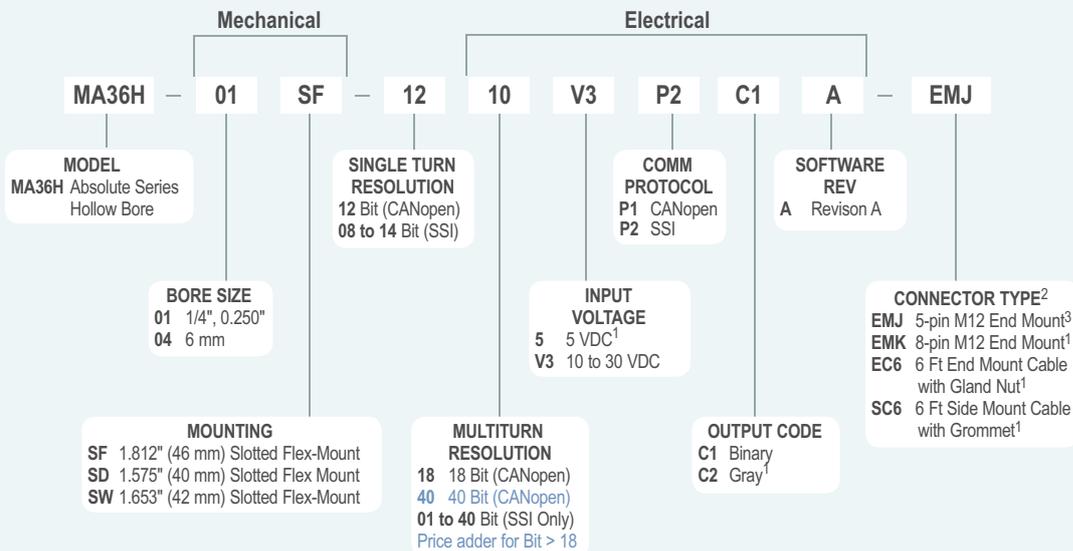
The Model MA36H Multiturn Absolute Accu-Coder™ is ideal for a wide variety of industrial applications that require an encoder with the capability of absolute positioning output, even in power off scenarios. Its fully digital output and innovative use of battery-free multiturn technology make the Model MA36H an excellent choice for all applications, especially ones with a high presence of noise. Its durable magnetic technology and high IP rating make it a perfect choice 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.

## COMMON APPLICATIONS

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

## MODEL MA36H ORDERING GUIDE

Blue type indicates price adder options. Not all configuration combinations may be available. Contact Customer Service for details. For single turn applications see Model SA36H.



### NOTES:

- Available with SSI only.
- For mating connectors, cables, and cordsets see Encoder Accessories on page 102 or visit [www.encoder.com](http://www.encoder.com). For Pin Configuration Diagrams, see page 107 or visit [www.encoder.com](http://www.encoder.com).
- Available with CANopen only.

Please note that configuration options for this product have changed. Confirm configuration options before ordering or contact Customer Service for assistance.

## MODEL MA36H SPECIFICATIONS

### Electrical

Input Voltage..... 10 to 30 VDC max SSI or CANopen  
5 VDC SSI Only  
Input Current ..... 50 mA max with no external load

### Power

Consumption..... 0.5 W max

Resolution (Single) ... 12 bit (CANopen)  
8 to 14 bit (SSI)

Resolution (Multi) ... Up to 40 bit multitrans (CANopen or SSI)

Accuracy ..... +/- 0.35°

Repeatability ..... +/- 0.2°

### 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 LSS (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 timer, etc.)

### SSI Interface

Clock Input ..... Via opto coupler

Clock Frequency..... 100KHz to 500KHz

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..... Apply VDC for 2 sec

Protection ..... Galvanic Isolation

### Mechanical

Max Shaft Speed ..... 12,000 RPM

Bore Size..... 6 mm, .250"

Bore Depth..... 17 mm [.669"]

### 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..... 5 oz typical

### Environmental

Operating Temp ..... -40° to +80° C

Storage Temp ..... -40° to +100° C

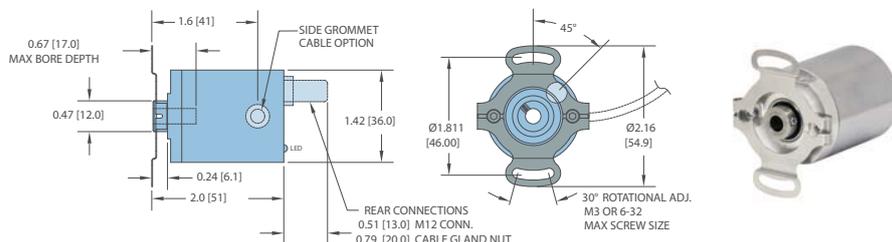
Humidity..... 95% RH non-condensing

Vibration..... 5 g @ 10 to 2000 Hz

Shock..... 100 g @ 6 ms duration

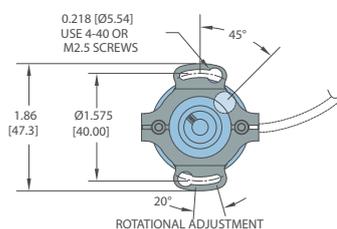
Sealing..... IP67, shaft sealed to IP65

## MODEL MA36H 1.812" (46 MM) SLOTTED FLEX MOUNT (SF)

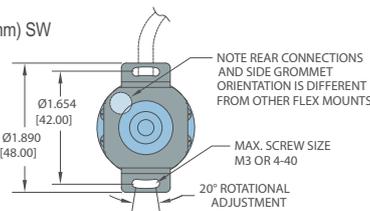


## MODEL MA36H OPTIONAL FLEX MOUNTS

### 1.575" (40 mm) SD



### 1.653" (42 mm) SW



All dimensions are in inches with a tolerance of +0.005" or +0.01" unless otherwise specified.  
Metric dimensions are given in brackets [mm].

## WIRING TABLES

SSI ENCODERS		
Function	Cable† Wire Color	8-pin M-12
Ground (GND)	White	1
+VDC	Brown	2
SSI CLK+	Green	3
SSI CLK-	Yellow	4
SSI DATA+	Gray	5
SSI DATA-	Pink	6
PRESET	Blue	7
DIR	Red	8
Shield	Side - Exit Housing End - Exit N/C	Housing

†Standard cable is 24 AWG conductors with foil and braid shield.

CANOPEN ENCODERS	
Function	Pin
+VDC	2
Ground (GND)	3
CAN <sub>High</sub>	4
CAN <sub>Low</sub>	5
CAN <sub>GND</sub> / Shield	1