

# Model MA36S MultiTurn Absolute



**BRITISH  
ENCODER**  
PRODUCTS COMPANY



## Features

- Standard Size 36 mm Package
- Durable Magnetic Technology
- Multiturn Absolute Encoder (12 Bit/40 Bit)
- *SSI and CANopen* Communications
- Proven New Turns Counting Technology - No Gears or Batteries

The Model MA36S Multiturn Absolute 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 MA36S 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 choice for dirty industrial environments. Available with a 6 mm or 1/4" shaft and a servo mount, the Model MA36S is easily designed into a variety of applications.

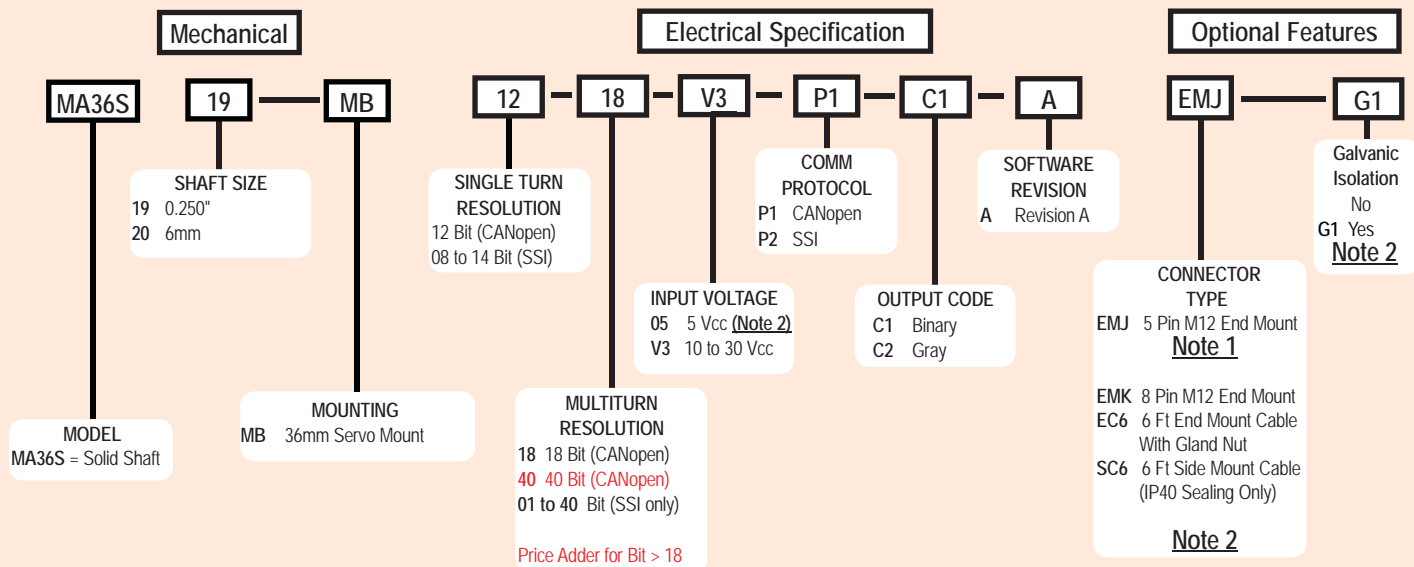
## Common Applications

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

## Model MA36S Ordering Guide

For Single turn applications see Model SA36S

**Red** 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**

### Notes:

- 1 Available with CANopen only
- 2 Available with SSI only

# Model MA36S MultiTurn Absolute



## Model MA36S 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..... 12 bit (CAN)  
8 to 14 bit (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 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 Vcc for 2 sec

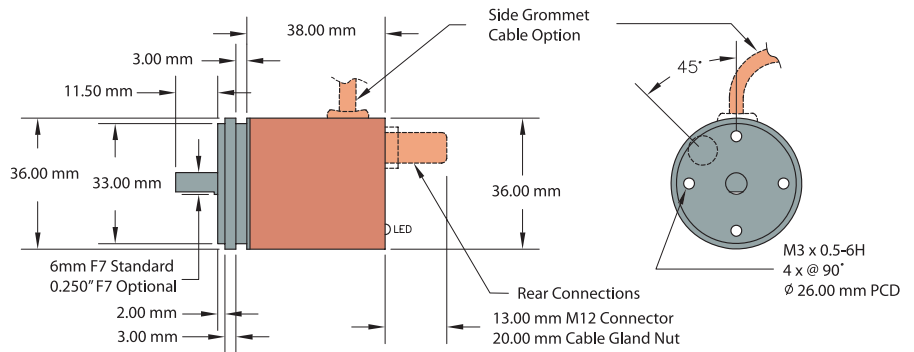
### Mechanical

Max Shaft Speed..... 12,000 RPM  
Shaft Size..... 6 mm, 0.250"  
Radial Shaft Load..... 7 lb (32 N) = bearing life 1.10<sup>10</sup> revs  
3.6 lb (16 N) = bearing life 1.10<sup>11</sup> revs  
Axial Shaft Load..... 5 lb (20 N) = bearing life 1.10<sup>10</sup> revs  
2.3 lb (10 N) = bearing life 1.10<sup>11</sup> revs  
Starting Torque..... <0.45 oz-in typical  
Housing..... Ferrous chrome-plated magnetic screening  
Mounting..... Flange or servo type  
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 MA36S Solid Shaft



## Wiring Table

### CANopen Encoders

Function	Pin
U <sub>B</sub>	2
Ground (GND)	3
CAN <sub>High</sub>	4
CAN <sub>Low</sub>	5
CAN <sub>GND</sub> / 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