Model MA36S - Solid Shaft 36mm MultiTurn Absolute

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 - Please see the Model SA36S Page

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

Mechanical			Electrical Specification						Optional Features	
MA36S	19	MB	12	18	V3	P1	C1	A	EMJ	G1

MODEL
MA36S Solid Shaft

SHAFT SIZE
19 0.250"
20 6mm

MOUNTING
MB 36mm Servo Mount

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 [2]
V3 10 to 30 Vcc

COMM PROTOCOL
P1 CANopen
P2 SSI

OUTPUT CODE
C1 Binary
C2 Gray [2]

SOFTWARE REVISION
A Revision A

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

GALVANIC ISOLATION
No
G1 Yes [2]

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

NOTES:
1 ONLY available with CANopen.
2 ONLY available with SSI.

Model MA36S - Solid Shaft
36mm 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 (Single)... 12 bit (CAN)
8 to 14 bit (SSI)
Resolution (Multi) ..... Up to 40 bit multiturn (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

The standard settings as well as any customisation 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 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

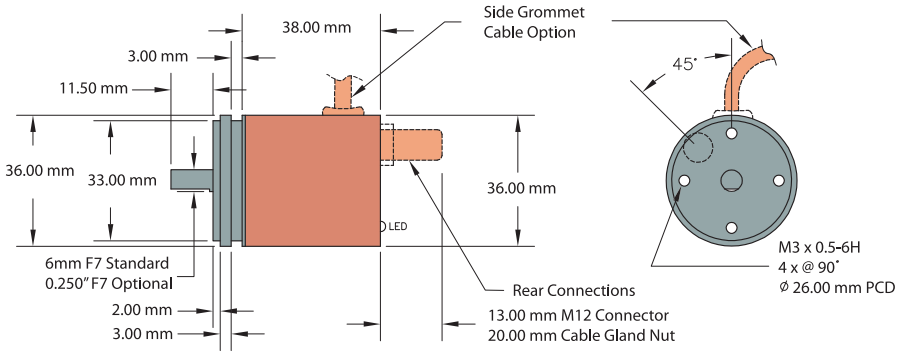
Mechanical

Max Shaft Speed..... 12,000 RPM
Shaft Size..... 6 mm, 0.250"
Radial Shaft Load..... 32 N = bearing life 1.10^{10} revs
16 N = bearing life 1.10^{11} revs
Axial Shaft Load..... 20 N = bearing life 1.10^{10} revs
10 N = bearing life 1.10^{11} revs
Starting Torque ..... <0.0032 N-m typical
Housing..... Ferrous chrome-plated magnetic screening
Mounting..... Flange or servo type
Weight..... 630 grams 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

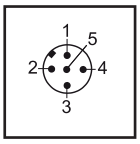


All dimensions are in mm with a tolerance of ±0.127 or ±0.254 unless otherwise specified.

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	Grey
SSI DATA-	6	Pink
PRESET	7	Blue
DIR	8	Red
Shield	housing	Side Exit - Housing End Exit - N/C