MODEL MA36H – MULTI-TURN ABSOLUTE ENCODER

DISCONTINUED - PLEASE SEE REPLACEMENT MODEL A36HB

FEATURES
Standard Size 36 mm Package (1.42"
Durable Magnetic Technology
Multi-Turn Absolute Encoder (14 Bit ST / 39 Bit MT)
SSI and CANopen Communication
Proven Turns Counting Technology – No Gears or Batteries
Flex Mount Eliminates Couplings and is Ideal for Motors or Shafts
Meets CE/EMC Standards for Immunity and Emissions

The Model MA36H Multi-Turn Absolute Encoder offers a high performance solution for your absolute feedback needs. It provides maintenance-free feedback thanks to its innovative battery-free and gear-free multi-turn technology. This encoder is especially suited for applications where position information must be retained after loss of system power (i.e., system resets, outages, etc.). Its rugged magnetic technology and high IP rating make the Model MA36H an excellent choice, even in the harshest industrial environments. Available with a 1/4" or 6 mm hollow bore and a wide selection of flexible mounting options, the Model MA36H is easily designed into a variety of applications.

COMMON APPLICATIONS
Robotics, Telescopes, Antennas, Medical Scanners, Wind Turbines, 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.

Mechanical

Electrical

MECHANICAL

Electrical

BoRE SIZe

01 1/4", 0.250"
04 6 mm

SINGLE TURN RESOLUTION 12 Bit (CANopen)¹
08 to 14 Bit (SSI)²

INPUT VOLTAGE 5 5 VDC³
V3 10 to 30 VDC

MULTI-TURN RESOLUTION 18 18 Bit (CANopen)
39 39 Bit (CANopen)
01 to 39 Bit (SSI Only)

OUTPUT CODE C1 Binary
C2 Gray⁴

SOFTWARE REV A Revision A

CONNECTOR TYPE⁴
EMJ 5-pin M12 End Mount⁵
EMK 8-pin M12 End Mount⁵
EC6 6 Ft End Mount Cable with Gland Nut³
SC6 6 Ft Side Mount Cable with Grommet³

NOTES:
3 Available with SSI only.
4 For mating connectors, cables, and cordsets see Accessories at encoder.com.
For Connector Pin Configuration Diagrams, see Technical Information or see Connector Pin Configuration Diagrams at encoder.com.
5 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.

1-800-366-5412 • www.encoder.com • sales@encoder.com
MODEL MA36H SPECIFICATIONS

Electrical
- Input Voltage: 10 to 30 VDC max SSI or CANopen
  - 5 VDC SSI Only
- Input Current: 50 mA typical for 10 to 30 VDC
  - 80 mA typical for 5 VDC
- Power Consumption: 0.5 W max
- Resolution (Single): 12 bit (CANopen)
  - 8 to 14 bit (SSI)
- Resolution (Multi): Up to 39 bit multi-turn (CANopen or SSI)
- Accuracy: ± 0.35°
- Repeatability: ± 0.2°
- CE/EMC: Immunity tested per EN 61000-6-2:2006
- Emissions tested per EN 61000-6-3:2011

CANopen Interface
- Protocol: CANopen
  - Communication profile CiA 301
  - Device profile for encoder CiA 406 V3.2 class C2
- Node Number: 1 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: 1000kHz to 500KHz. Higher frequencies may be available. Contact Customer Service.
- 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: Yes, see Technical Bulletin TB-529:
  - Understanding EPC’s SSI Encoders
- Protection: Galvanic Isolation

Mechanical
- Max Shaft Speed: 12,000 RPM
- Bore Depth: 17 mm (0.669")
- User Shaft
- Radial Runout: 0.005" max
- Starting Torque: < 0.45 oz-in typical
- Housing: Ferrous chrome-plated magnetic screening
- Weight: 5 oz typical

Environmental
- Operating Temp: -40° to 85° 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

WIRING TABLE

For EPC-supplied mating cables, refer to wiring table provided with cable.

For CE (Conformity European) requirements, use M12 cordset with shield connected to M12 coupling nut. Trim back and insulate unused wires.