

23MDSI Series - Integrated Stepper Motor/ Driver/Controllers



FEATURES

- **Eliminates Motor Wires**
- **Encoder Options Available**
- **MicroStep Divisors of 8, 4, 2, or Full Step**
- **Compact Package**
- **12-24V Power Requirement**
- **RS485 Communications**
- **TTL Logic or 24V Level Inputs Available**
- **0.225° Resolution at Eighth Step**
- **Efficient and Durable**

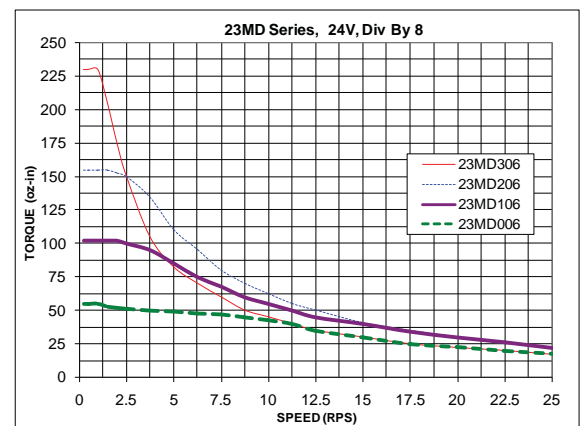


DESCRIPTION

The 23MDSI Series has a compact construction that integrates a simple indexer/controller, microstepping driver and a stepper motor in one streamline package. With the three parts combined into one casing, the need to include motor wires has been eliminated. The high-torque step motor can generate up to 230 oz-in of torque. The microstepping driver will operate off 12VDC minimum to 24VDC maximum with a maximum power intake of 40W. The inputs are capable of running from either open collector, TTL level logic outputs or 24VDC outputs from PLCs and are all active low. The microstepping driver features resolutions from 200 - 1600 steps/revolution, providing smooth rotary operation. The 23MDSI Series comes in either a single shaft versions or a double shaft version with optical encoder. Motor stack lengths of 1, 2, or 3 allow for varying amounts of start-up torque, dynamic torque and inertia. The 23MDSI Series features built in over temperature and short circuit shut down protection. It also has automatic 70% reduction in stepper motor current after indexing is complete and status LED's to indicate power on (green LED), motor running (yellow LED) and communication errors (red LED).

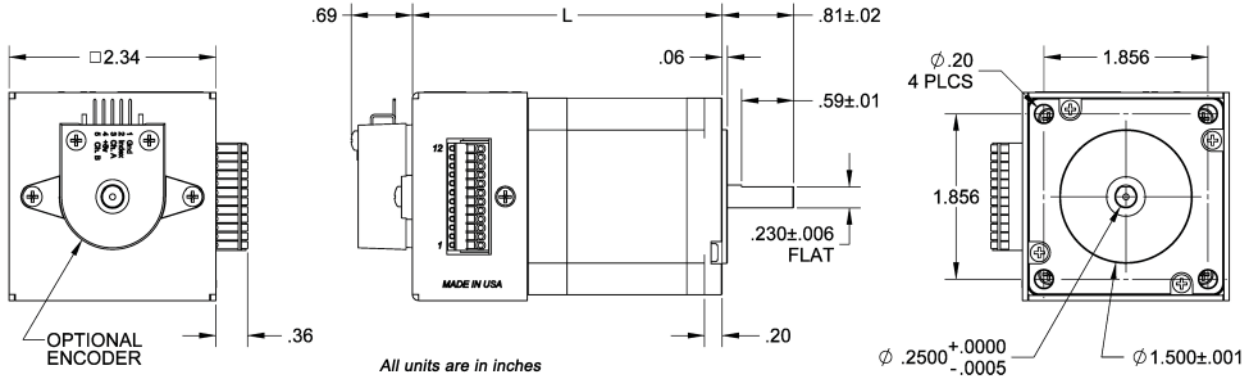
SPECIFICATIONS

| Model # | NEMA Size | Bipolar Torque (oz-in) | Encoder CPR | Rotor Inertia (oz-in-sec ²) | Weight (lbs) | L Length (in) |
|------------------|-----------|------------------------|-------------|---|--------------|---------------|
| 23MDSI006D-04-00 | 23 | 76 | 400 | 0.0017 | 1.22 | 2.914 |
| 23MDSI006D-10-00 | 23 | 76 | 1000 | 0.0017 | 1.22 | 2.914 |
| 23MDSI006D-00-00 | 23 | 76 | --- | 0.0017 | 1.22 | 2.914 |
| 23MDSI106D-04-00 | 23 | 175 | 400 | 0.0042 | 1.77 | 3.504 |
| 23MDSI106D-10-00 | 23 | 175 | 1000 | 0.0042 | 1.77 | 3.504 |
| 23MDSI106S-00-00 | 23 | 175 | --- | 0.0042 | 1.73 | 3.504 |
| 23MDSI206D-04-00 | 23 | 262 | 400 | 0.0068 | 2.43 | 4.292 |
| 23MDSI206D-10-00 | 23 | 262 | 1000 | 0.0068 | 2.43 | 4.292 |
| 23MDSI206S-00-00 | 23 | 262 | --- | 0.0068 | 2.39 | 4.292 |
| 23MDSI306D-04-00 | 23 | 425 | 400 | 0.0103 | 3.53 | 5.828 |
| 23MDSI306D-10-00 | 23 | 425 | 1000 | 0.0103 | 3.53 | 5.828 |
| 23MDSI306S-00-00 | 23 | 425 | --- | 0.0103 | 3.49 | 5.828 |

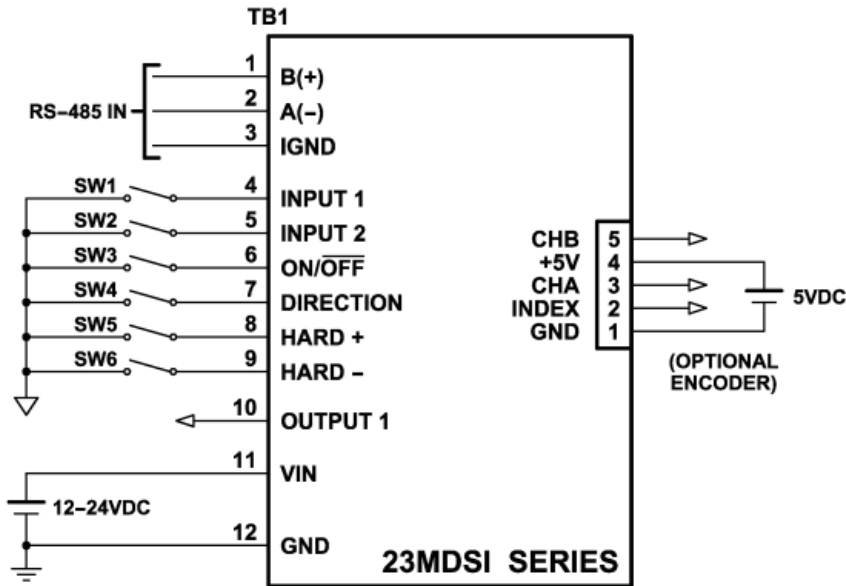


Note: The 10th character "S" denotes a single shaft, use "D" for double shaft. Custom leadwires, cables, connectors, and windings are available upon request.
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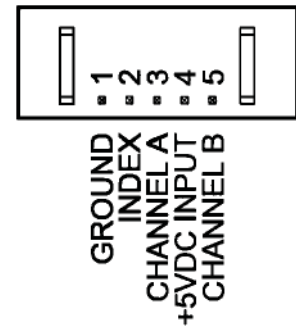
DIMENSIONS



WIRING DIAGRAM



TOP OF ENCODER FACING PLUG



SPECIFICATIONS

| | | | |
|-------------------------|-----------------------------|------------------------|------------------------------|
| Power Requirements: | 12-24VDC | Microstepping Res. | 1600 steps/rev (Div-by 8) |
| Input Voltage (Inputs): | 3.5 - 24VDC | Driver Type: | Bipolar Series |
| Step Angle Accuracy: | +/- 5% (Full Step, No Load) | Insulation Resistance: | 100M Ohm Min, 500VDC |
| Resistance Accuracy: | +/-10% | Dielectric Strength: | 500VDC for one minute |
| Inductance Accuracy: | +/-20% | Radial Play: | 0.02" at 1.0 lbs |
| Temperature Rise: | 80°C Max (2 Phases On) | End Play: | 0.08" at 1.0 lbs |
| Ambient Temperature: | -20° to +50° C | Max Radial Force: | 16.9 lbs (0.79" from flange) |
| Insulation Type: | Class B | Max Axial Force: | 3.4 lbs-Force |