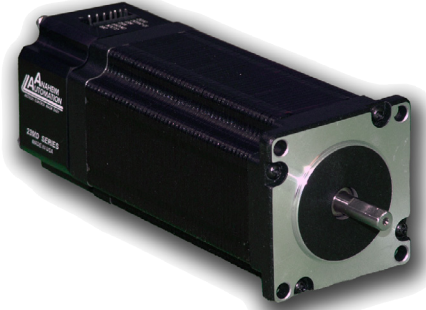


# 23MD Series - Integrated Stepper Motor/Drivers



FEATURES

- Stepper Motor/Microstep Driver Combination
- High Torque - Up to 425 oz-in
- Eliminates Motor Wires
- Microstep Divisors of 8, 4, 2 or Full Step
- Compact Package
- 12-24V Power Requirement
- TTL Logic or 24V Level Inputs Available
- Ideal for Precise Positioning
- 0.225° Resolution at Eighth Step
- Efficient and Durable
- RoHS Compliant



DESCRIPTION

The 23MD Series is a compact construction that implements a microstepping driver and a stepper motor in one streamline package. With the two parts combined into one casing, the need to include motor wires has been eliminated. The high-torque step motor can generate up to 425 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 or TTL level logic outputs, or sourcing 24VDC outputs from PLCs. The microstepping driver features resolutions from 200-1600 steps/revolution, providing smooth rotary operation. The 23MD series comes in either a single shaft version or a double shaft version with optional encoder, and motor stack lengths of 1/2, 1, 2, or 3, allowing for varying amounts of start-up torque and inertia. The 23MD series features include built-in over temperature and short circuit shut down, automatic 70% reduction in current after clock pulses stop being received, and status LED's to indicate power on (green LED) and clocks being received (yellow LED). A power supply is required (purchased separately).

CUSTOM ORDER LAYOUT

Example: **23MD106S-10-24-00**

Table 1						Table 2		Table 3	
Model #	Frame Size	Bipolar Torque (oz-in)	Rotor Inertia (oz-in-sec <sup>2</sup> )	Weight (lbs)	"L" Length (in)	Shaft Option	Description	Encoder Option	Description
23MD006	23	76	0.0017	1.20	2.88	S	Single	-00	No Encoder
23MD106	23	175	0.0042	1.75	3.32	D	Double	-04	400 Line Encoder
23MD206	23	262	0.0068	2.41	4.23			-10	1000 Line Encoder
23MD306	23	425	0.0103	3.51	5.23				

Table 4		Table 5	
Sourcing/Sinking Options	Description	Special Options	Description
-00	Sinking Inputs	-00	Standard Products
-24	Sourcing Inputs	##	Other Options

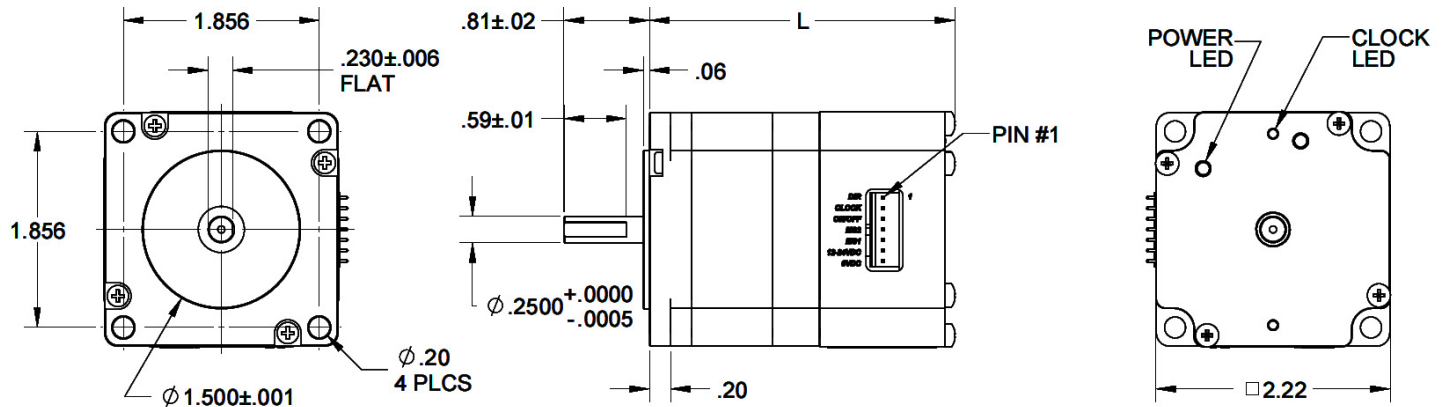
Note: Other Speed Options, Custom leadwires, cables, connectors, and windings are available upon request

SPECIFICATIONS

Step Angle:	1.8°	Insulation Resistance:	100M ohm Min., 500VDC
Step Angle Accuracy:	±5%	Dielectric Strength:	500VAC for one minute
Resistance Accuracy:	±10%	Shaft Radial Play:	0.02 Max. (1lb load)
Inductance Accuracy:	±20%	Shaft Axial Play:	0.08 Max. (1lb load)
Temperature Rise:	80°C Max. (rated current, 2 phase on)	Max. Radial Force:	16.9lbs (0.79 in from the flange)
Ambient Temperature:	-20°C to +50°C	Max. Axial Force:	3.37lbs

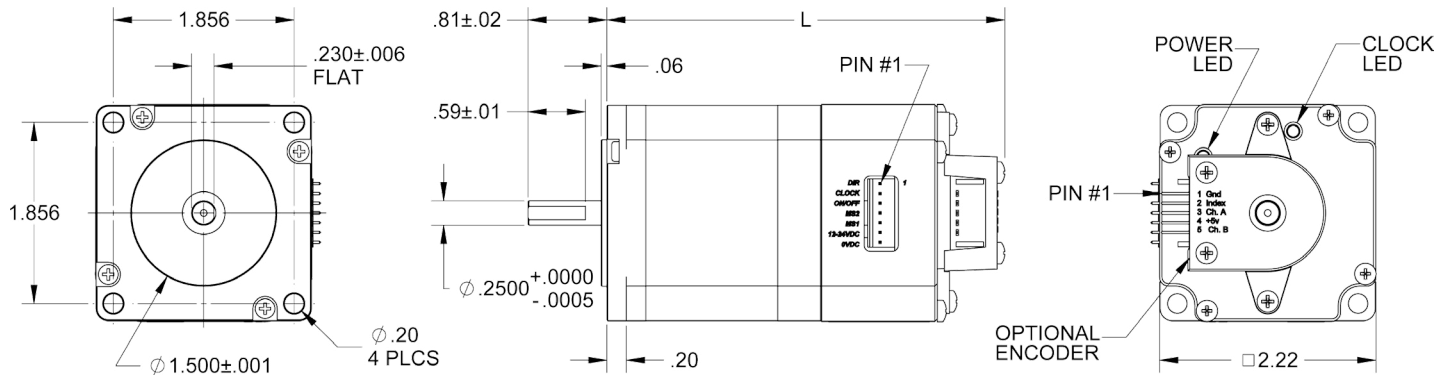
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### Single-Ended Shaft Dimensions



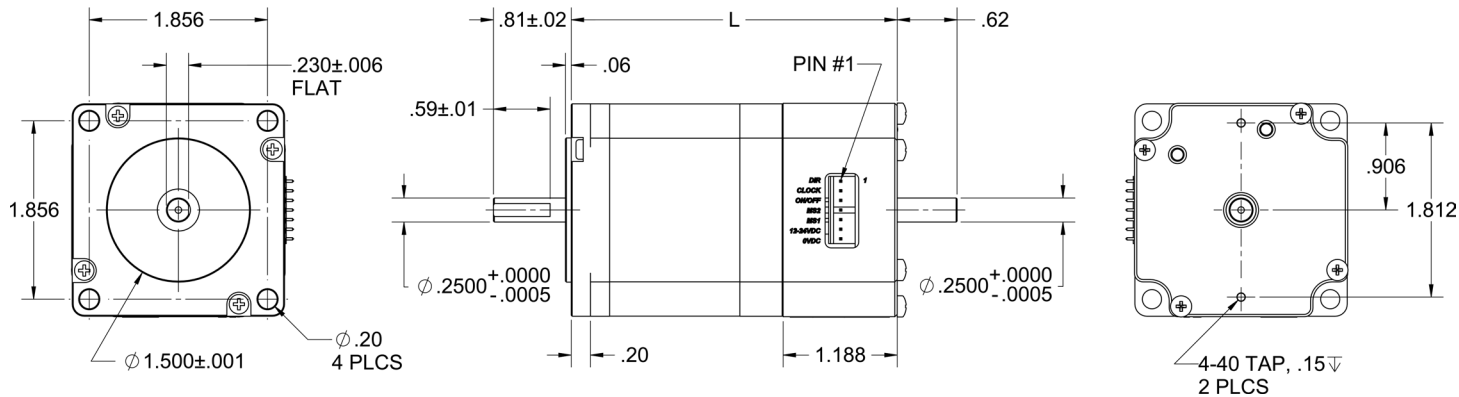
\*All units in inches

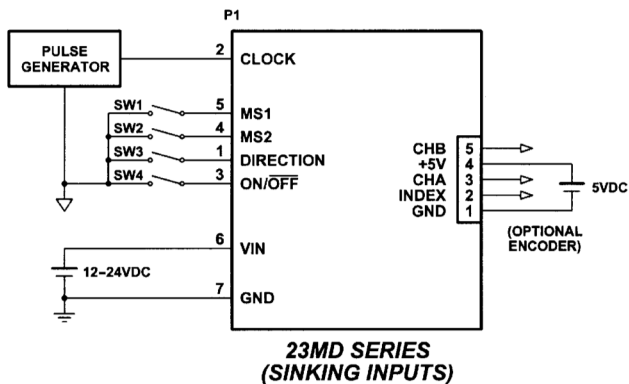
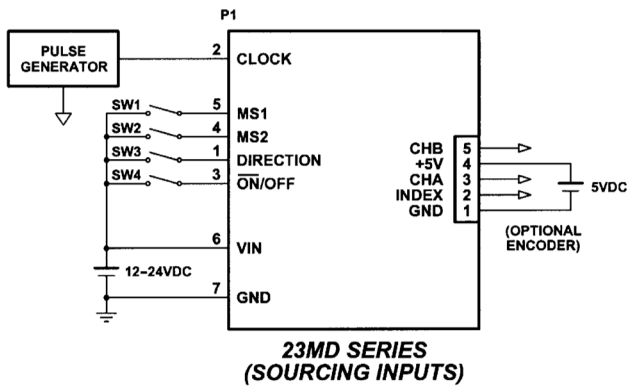
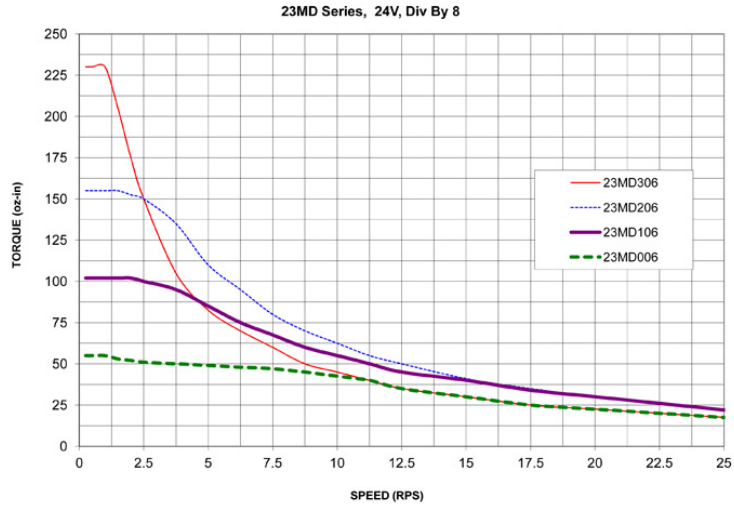
### Double-Ended Shaft with Encoder Dimensions



DIMENSIONS

### Double-Ended Shaft without Encoder Dimensions





Terminal Block Pin	Description	CBL-AA4031 Wire Color
1	Direction	Brown
2	Clock	Red
3	On/Off	Orange
4	MS2	Yellow
5	MS1	Green
6	12VDC-24VDC	Blue
7	0VDC (Gnd)	Violet