

BLWS23MDA Integrated BLDC Motor/ Controller Series



FEATURES

- **Constant Velocity Mode**
- **0.5 to 5V External Voltage Speed Control**
- **2-Quadrant Operation**
- **Hall Sensor Feedback**
- **Short Circuit Protection**
- **Maximum Current Limit Setting at 15.0 Amps
(20.0 Amps for the BLWS23MDA5 version)**
- **Speed Out**
- **Direction Input**
- **Improved Closed-Loop Control**
- **Motor Frame: 2.3" Square (Similar to NEMA23)**

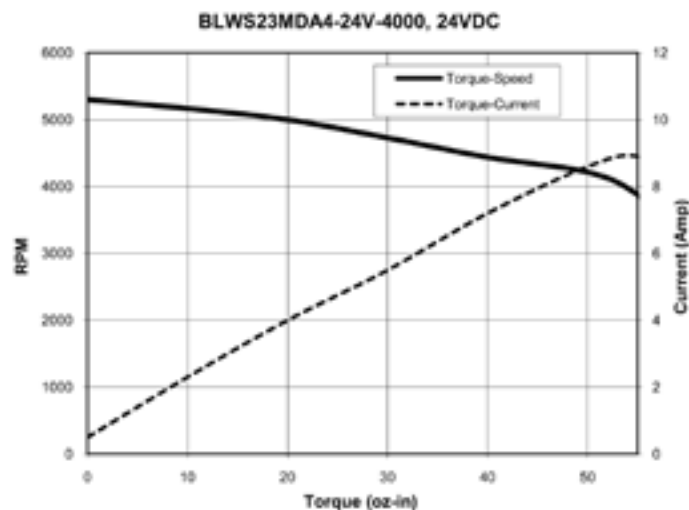


DESCRIPTION

The BLWS23MDA Series is a compact construction that implements a DC Brushless controller and a DC Brushless motor in one streamline package. With the two parts combine into one casing, the need to wire the motor has been eliminated. The DC Brushless controller operates off 24VDC. The high-speed DC Brushless motor can operate at 4,000 RPM, can generate up to 70 oz-in of continuous torque, and deliver as much as 180W, with the BLWS23MDA5 offering. Using hall sensor feedback, the DC Brushless controller operates in a constant velocity mode. The driver is protected against over current (cycle-by-cycle), hall sensor error and under voltage. An external potentiometer (10K) or external voltage (0.5-5VDC) can be used to control the speed. For top speed open loop operation, 7VDC must be applied on the Vspeed input. The direction of the motor can be present by the direction control input. A stop function can be done by grounding the Run/Stop input.

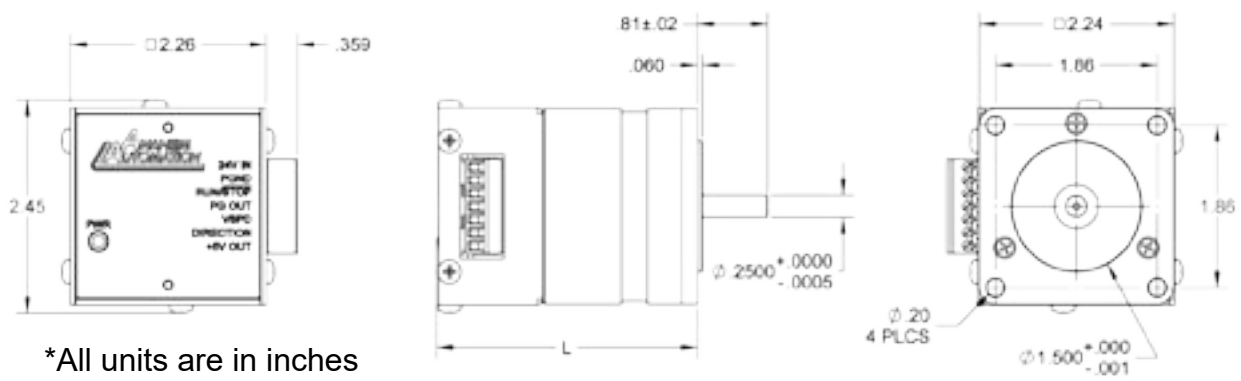
SPECIFICATIONS

Model #	Motor Frame	Rated Voltage (V)	Rated Speed (RPM)	No Load Speed (RPM)	Rated Torque (oz-in)	Torque Constant (oz-in/A)	Rated Power (W)	Weight (lbs)	L Length (inch)
BLWS23MDA1S-24V-4000	2.3 in. Square	24	4000	5900	8	4.9	25	0.8	2.97
BLWS23MDA2S-24V-4000	2.3 in. Square	24	4000	5100	15	5.5	50	1.3	3.37
BLWS23MDA3S-24V-4000	2.3 in. Square	24	4000	5000	31	6.1	95	1.9	4.15
BLWS23MDA4S-24V-4000	2.3 in. Square	24	4000	5300	45	5.6	135	2.4	4.92
BLWS23MDA5S-24V-4000	2.3 in. Square	24	4000	5600	62	5.5	185	3.0	5.77



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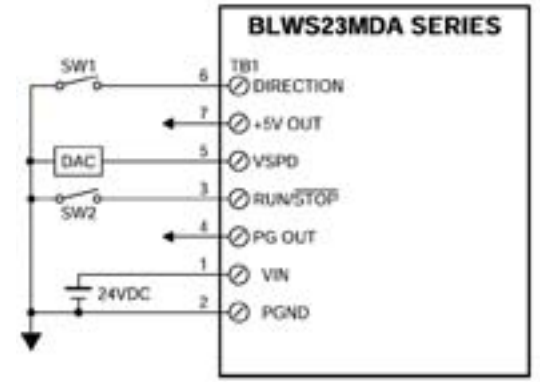
DIMENSIONS



*All units are in inches

WIRING INFORMATION

Pin #	Description	Pin #	Description
1	VIN (18-35 VDC) 24V (nominal)	1	VIN (18-35 VDC) 24V (nominal)
2	PGND	2	PGND/Pot (-) Bottom
3	Run/Stop	3	Run/Stop
4	PG Out	4	PG Out
5	Vspeed	5	Pot Wiper
6	Direction	6	Direction
7	+5Vout	7	+5Vout/Pot (+) Top



TB1: Power In, Control Inputs and Outputs

TB1: with 10K External Pot

SPECIFICATIONS

Winding Type:	Delta, 4 Poles	Max Radial Force:	28N @ 10mm from Flange
Hall Effect Angle:	120 Degree Electrical Angle	Max Axial Force:	10N - Force
Shaft Run Out:	0.025mm	Insulation Class:	Class B
Radial Play:	0.02mm@450g	Dielectric Strength:	500VDC for one minute
End Play:	0.08mm@450g	Insulation Resistance:	100Mohm, 500VDC
Humidity Range:	75% (RH) non-condensing	Operating Temp. Range:	0 - 45 degrees C