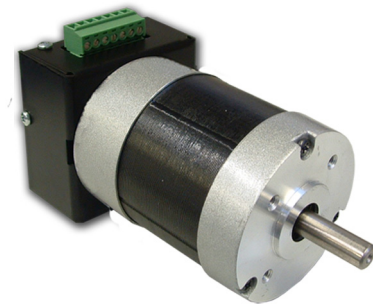


# BLWR23MDA Integrated BLDC Motor/ Controller Series



## 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 BLWR23MDA5 version)**
- **Speed Out**
- **Direction Input**
- **Improved Closed-Loop Control**
- **Motor Frame: 2.3" Round**

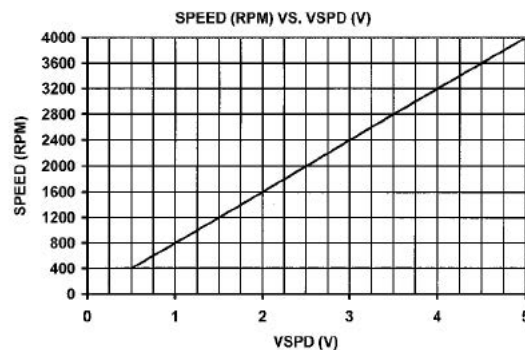


## DESCRIPTION

The BLWR23MDA Series is a compact construction that implements a DC Brushless controller and a DC Brushless motor in one streamline package. With the two parts combined 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 BLWR23MDA5 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.

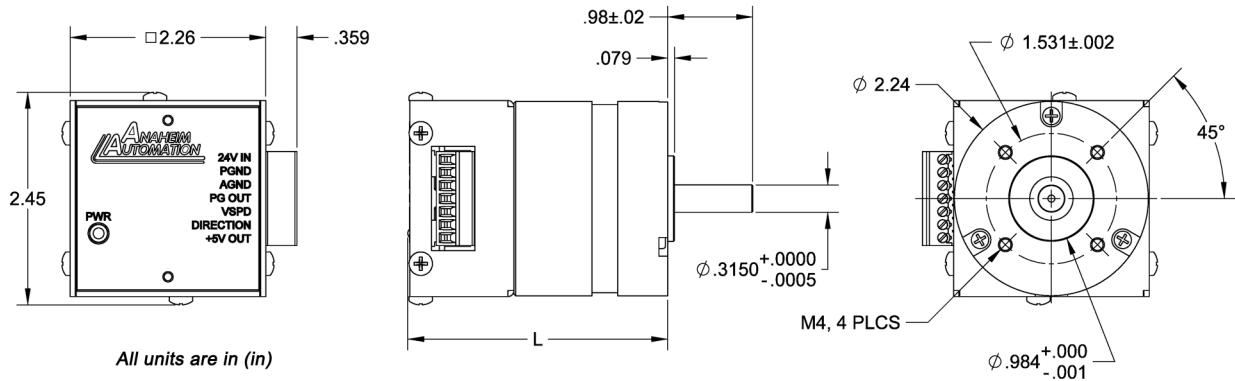
## SPECIFICATIONS

Model #	Rated Voltage (V)	Rated Speed (RPM)	No Load Speed (RPM)	Rated Torque (oz-in)	Torque Constant (oz-in/A)	Rated Power (W)	Rotor Inertia (oz-in-sec <sup>2</sup> )	Weight (lbs)	L Length (inch)
BLWR23MDA1S-24V-4000	24	4000	5900	5	5	26	0.00042	0.8	2.97
BLWR23MDA2S-24V-4000	24	4000	5100	15	5.5	52	0.00106	1.3	3.37
BLWR23MDA3S-24V-4000	24	4000	5000	31	6	95	0.00169	1.9	4.15
BLWR23MDA4S-24V-4000	24	4000	5300	45	5.5	135	0.00245	2.4	4.92
BLWR23MDA5S-24V-4000	24	4000	5600	62	5.5	180	0.00326	3.0	5.77



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DIMENSIONS



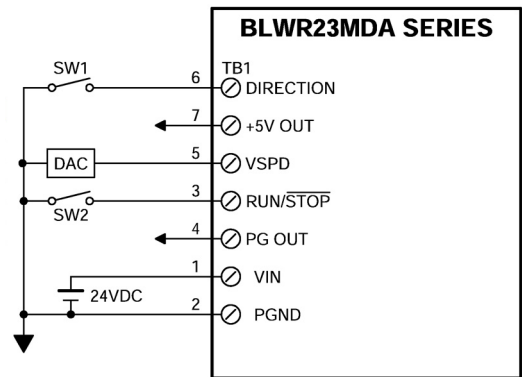
WIRING INFORMATION

Pin #	Description
1	VIN (18-35 VDC)
2	PGND
3	Run/Stop
4	PG Out
5	Vspeed
6	Direction
7	+5Vout

TB1: Power In, Control Inputs and Outputs

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

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