

Brushless DC Outer-Rotor Motors with Integral Drive

KINETIMAX 42 EB SERIES

42 mm diameter, 70 mNm max. torque, up to 31 W output power

The KinetiMax 42 EB is a highly compact brushless DC motor with integrated drive electronics. This motor features an outer-rotor motor with a robust bearing system capable of handling high side loads.

The external rotor and iron core stator design maximizes torque production, ensuring reliable performance. Built with high-quality components, the KinetiMax 42 EB guarantees a minimum operating life of 20,000 hours.



KEY FEATURES & BENEFITS

Outer-Rotor, Precision Design:

42 mm diameter brushless DC motors with integrated drive electronics and robust bearing system.

Power Output:

Rated 70 mNm (9.9 oz-in) and 31 W at 4300 RPM.

Voltage Options:

12 or 24 VDC windings.

Protection/Voltage Reversal:

IP54 level protection sealing. Motors include reverse supply voltage protection, and feature thermal overload protection with automatic recovery.

Low EMI Compliance:

Meets EN 55014-1/2, 61000-6-1/3 standards.

Control:

Integrated speed control loop with a speed set input to adjust motor speed from 150 to 5000 RPM.

Direction Reversal:

Input available for enabling direction reversal.

Tachometer Output:

Six-wire version features tachometer output (18 pulses per rev) for speed monitoring, speed input and direction input.

MJK, Inc.

396 Chase PKWY, Waterbury, CT 06708 USA
Telephone (203) 596-1258 Fax (203) 757-1724
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OPTIONS & ACCESSORIES

Customized Shaft/Mounting Flange:

Tailored to meet specific application requirements, including double shaft versions with front and back shafts.

Custom Leads and Connector Configurations:

Adaptable to various electrical connections.

Special Winding Configurations:

Optimized for specific performance characteristics.

Hall Sensors Integration:

Enhances motor control and feedback accuracy.

Encoder and/or Gearbox Integration:

Provides additional torque and speed options, precise position and speed feedback.

APPLICATIONS

The KinetiMax 42 EB Series motors are an ideal solution for a variety of applications:

Including

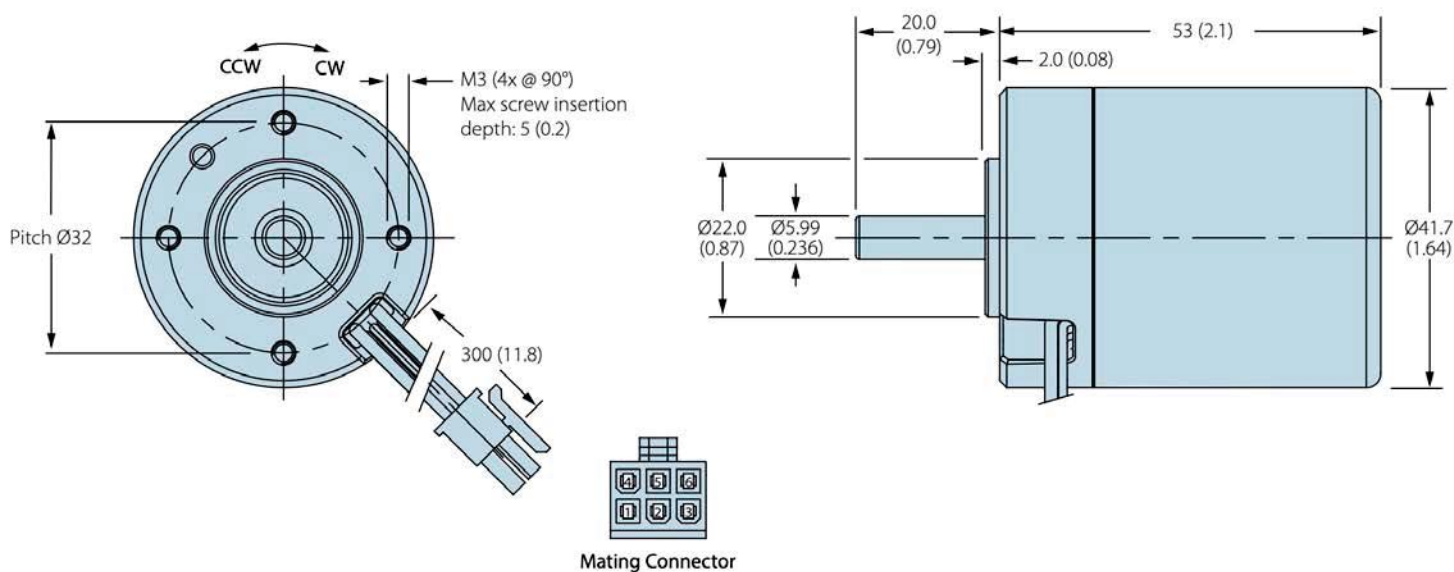
Small membrane pumps

Peristaltic pumps

Blowers & fans

Medical applications

DIMENSIONS



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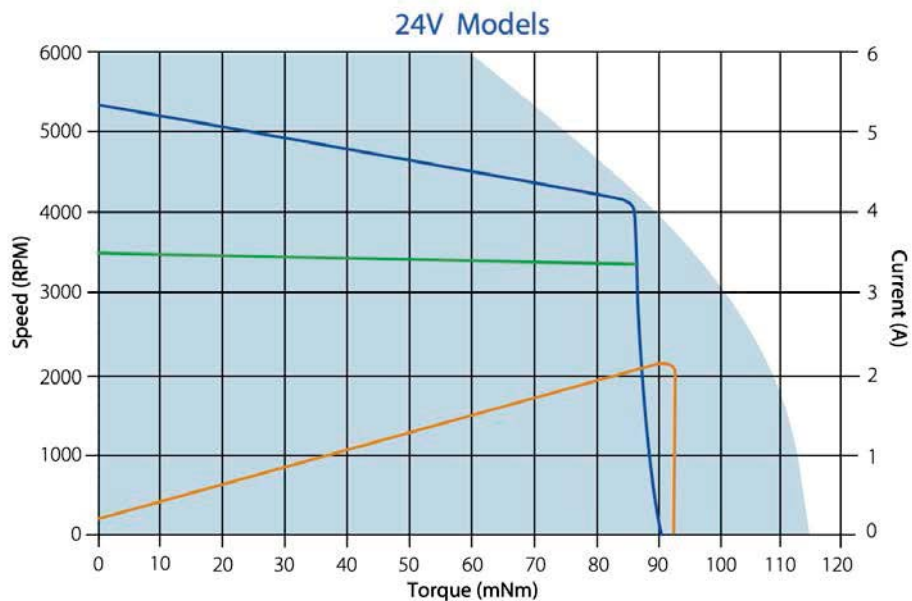
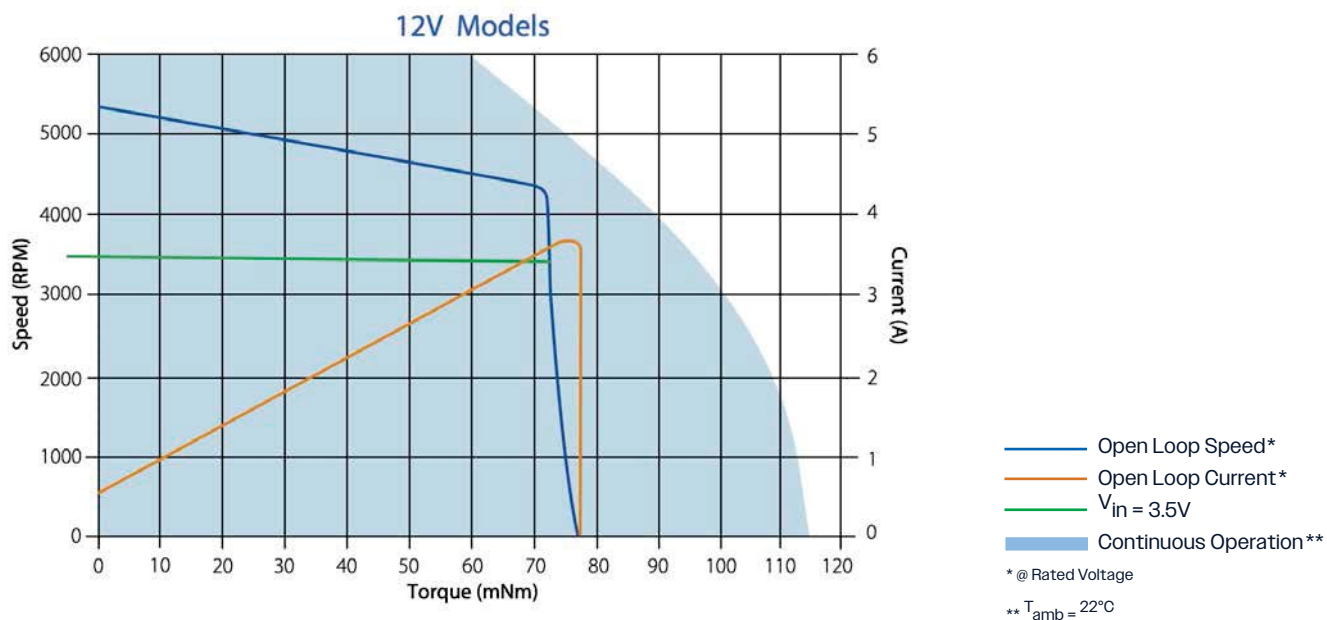
SPECIFICATIONS

Parameter		Unit		
Shaft Diameter	4 mm		4322-016-38002	4322-016-38007
	5 mm		4322-016-38003	4322-016-38008
	6 mm		4322-016-38004	4322-016-38009
Voltage	Nominal	VDC	12	24
	Range ¹		10 - 18	10 - 28
Rated Output Power		W	29	32
Torque	Rated	mNm (oz.in.)	70 (9.9)	
	Max		72 (10.2)	100 (14.2)
Speed	Rated	RPM	4300	
	No-Load		5200	5300
Current	Rated	A	3.5	1.75
	Max		3.6	2.3
	Loaded		0.46	0.25
Rotor Inertia		kgm ² (oz.in.s ²)	17.5 E-6 (26 E-4)	
Thermal Resistance	Housing-Ambient	°C/W	7.6	
Weight		g (oz)	225 (4.0)	
Protection Level			IP54	
Speed Command	Ratio	RPM/V	1000	
	Range	V	0 - 7	
	Threshold	V	0.1	
Direction Input	CW	V	Low < 1	
	CCW		High > 4	
Speed Output	Pulse Rate	PPR	18	
	Low Time	µsec	195	
Operating Temperature Range		°C (°F)		
Thermal Limit Protection		°C (°F)	90 (194) flange temp. / 80 (176) restart	

Values valid for nominal voltage and Tamb = 22°C

¹ Power supply provided with appropriate 1000 µF buffer capacitor between supply voltage and common to comply with EN 55014-1/2; protection against wrong connection up to ±28 volt.

PERFORMANCE

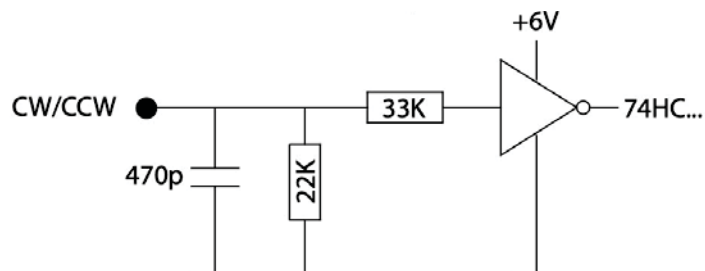


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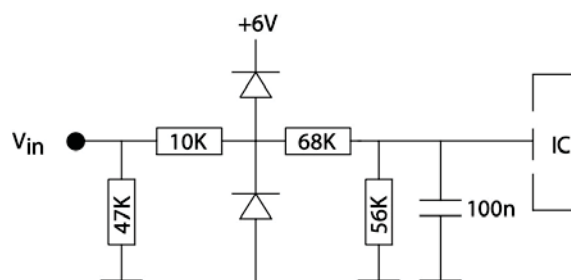
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I/O SCHEMATICS

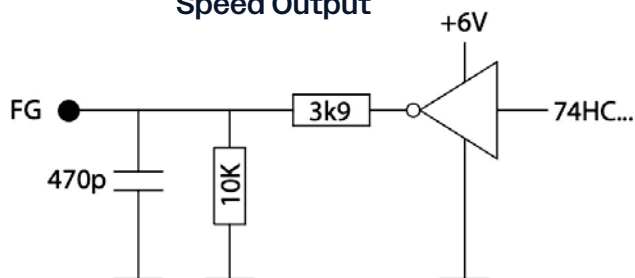
Direction Input



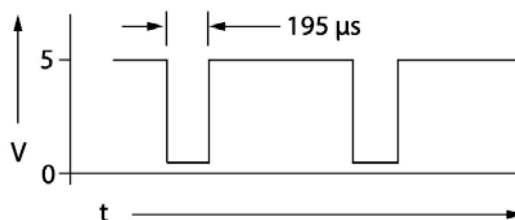
Speed Input



Speed Output

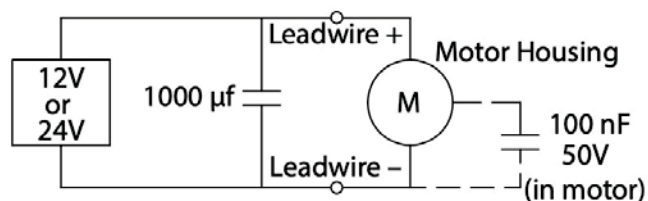


Speed Output Signal



EMC

To meet EMC directive EN 55014, the power supply must be provided with a capacitor 1000 μ f, 35V at the output:



Electrical Connections

Version	Description	Wire Color (AWG 24)
6-wire	1 Supply Voltage	Red
	2 Ground	Black
	3 Tachometer Output (FG)	Green
	4 Speed Control Input (V_{in})	White
	5 Direction Input (CW/CCW)	Brown
	6 Shield	Yellow

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