

Brushless DC Outer-Rotor Motors with Integral Drive

KINETIMAX 68 EB SERIES

68 mm diameter, up to 170 mNm cont. torque, up to 50 W output power

The KinetiMax 68 EB series of brushless DC motors with integrated drive electronics are compact yet powerful outer-rotor motors. The external rotor and iron core stator minimize cogging and maximizes output torque. The KinetiMax 68 motors are designed with a bearing system capable of handling high side loads.

High quality components ensure the KinetiMax 68 motor life exceeds 20,000 hours. The output torque range of this family has a maximum of 170 mNm, and the speed range extends to 6000 RPM.



KEY FEATURES & BENEFITS

Outer-Rotor, Precision Design:

68 mm diameter outer rotor, brushless DC motor with integrated drive electronics.

Power Output:

Rated at 35 and 50 W output power, rated torque up to 170 mNm.

Control:

Integrated speed control loop with a speed set input to adjust motor speed from 300 to 4000 RPM.

Thermal Protection/IP Rating:

Motor features thermal overload protection with automatic recovery. IP43 protection rating standard.

Low EMI Compliance:

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

Rotational Direction/Speed Input:

Adjustable speed and direction selection.

Model Specifics:

Model 01658033 includes integral electrical brake.

MJK, Inc.

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OPTIONS & ACCESSORIES

Customized Shaft/Mounting Flange:

Tailored to meet specific application requirements.

Custom Leads and Connector Configurations:

Adaptable to various electrical connections.

Special Winding Configurations:

Optimized for specific performance characteristics.

Gearbox Mounting:

Engineered to support easy integration with planetary or spur gearboxes.

Optional IP55 Rating:

Enhanced protection against dust and water jets, ensuring reliable performance.

PWM or Frequency Speed Set:

Flexible speed control options.

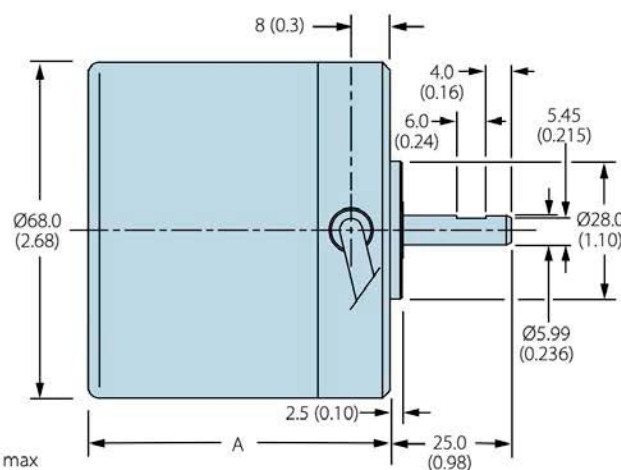
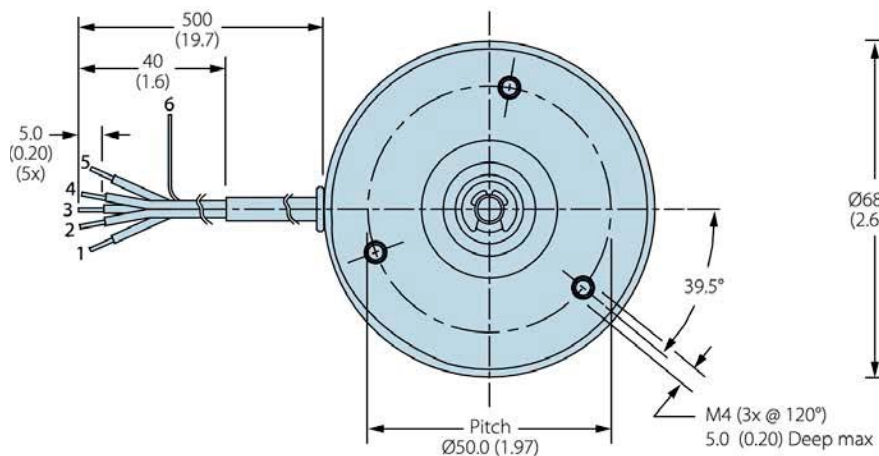
APPLICATIONS

The KinetiMax 68 EB Series motors are an ideal solution for a variety of applications:

Including

- Gear Pumps
- Peristaltic pumps
- High-end fans and blowers
- Labratory equipment

DIMENSIONS



	Length A
KMX-01658041	49.1 (1.93)
KMX-01658033	
KMX-01658013	62.1 (2.44)
KMX-01658023	

SPECIFICATIONS 30.4 mm (1.20 in) length units

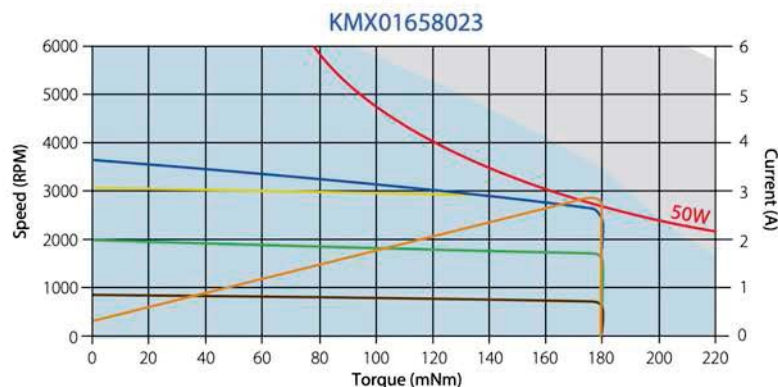
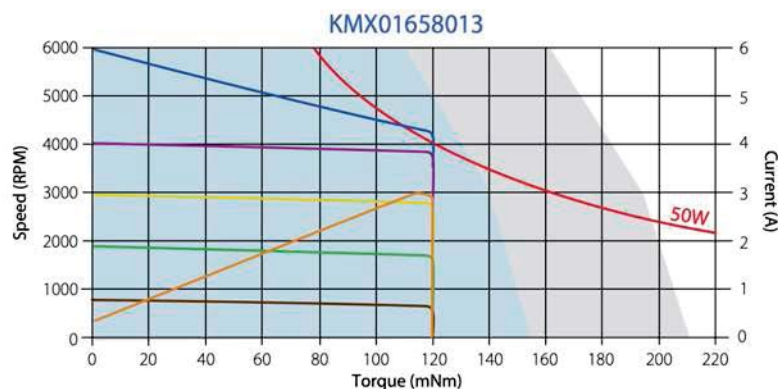
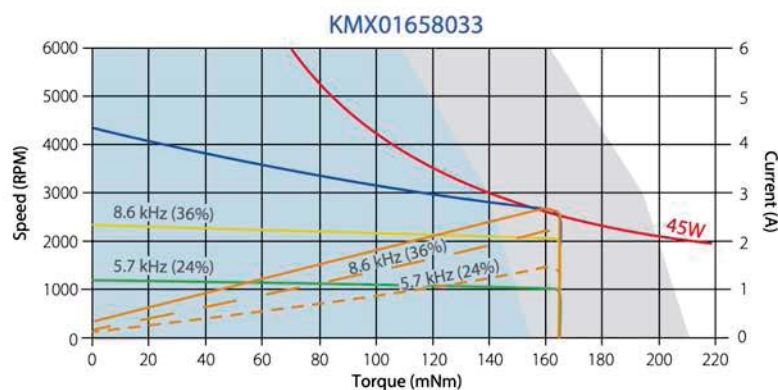
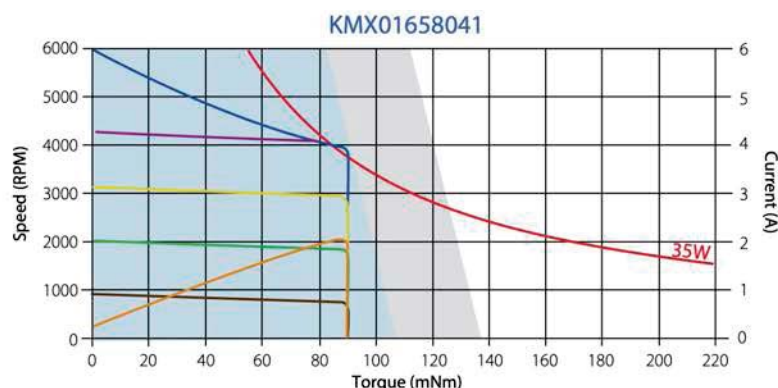
Parameter		Unit				
Model			KMX-01658041	KMX-01658033	KMX-01658013	KMX-01658023
Length		mm (in)	49.1 (1.93)	62.1 (2.44)		
Voltage	Nominal	VDC	24			
	Range ¹		14 - 30			
Rated Output Power		W	35		50	
Torque	Rated	mNm (oz.in.)	70 (9.9)	110 (15.6)		170 (24.0)
	Max		90 (12.7)	150 (21.2)	120 (17.0)	180 (25.5)
Speed	Rated	RPM	3650	2500	3750	2400
	No-Load		6000	4330	6000	3650
Current	Rated	A	2		3	
	Max		2.3	3.4		
	No-load		0.215	0.18	0.26	0.265
Rotor Inertia		kgm² (oz.in.s²)	0.75 E-4 (0.0106)	1.2 E-4 (0.017)		
Mechanical Time Constant		ms	30	40		25
Thermal Resistance	Housing-Ambient	°C/W	4.2	3.7		
Weight		g (oz)	450 (15.9)	550 (19.4)		
Protection Level			IP43			
Gearbox (option)			On Request			
Speed-Voltage Input Ratio		RPM/V	1000	1100	1000	
Speed Input	Set Point	V	0 - 6			
	Threshold		0.25	N/A	0.25	
	Brake Active		N/A	0 to 0.4	N/A	
	Motor Disable		N/A	0.4 to 0.7..1.05	N/A	
Direction Input	CW	V	<1			
	CCW		>4			
Speed Output Signal		PPR	36			
	Low Time	µsec	168			
Operating Temperature Range		°C (°F)	0 – 70 (32 – 158)			
Thermal Limit Protection ²		°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;
(See additional EMC information on page 5.)

² Motor temperature measured at aluminum bearing support.

PERFORMANCE



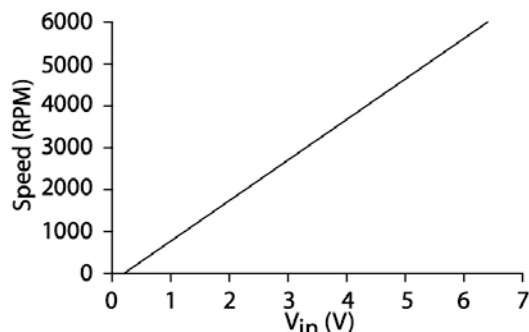
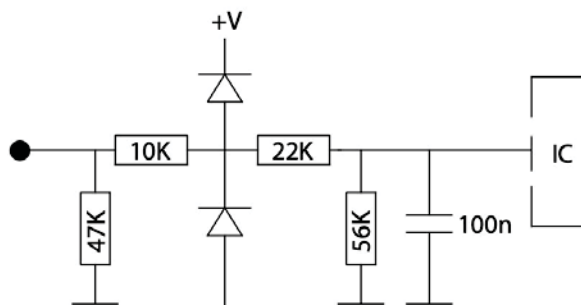
- Assigned Power Rating
- Open Loop Speed*
- Open Loop Current*
- $V_{in} = 2V$
- $V_{in} = 4V$
- $V_{in} = 3V$
- $V_{in} = 1V$
- Continuous Operation**
- Short Term or Extra Cooling

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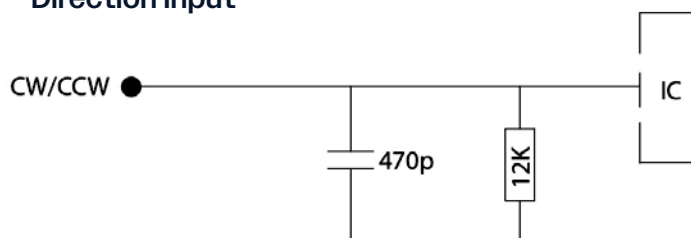
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I/O SCHEMATICS

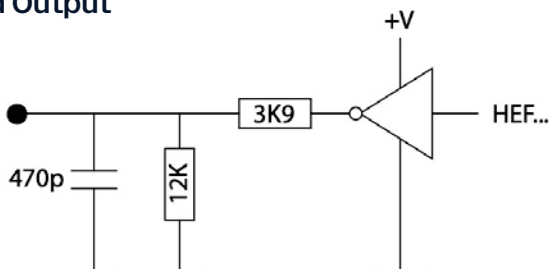
Speed Input



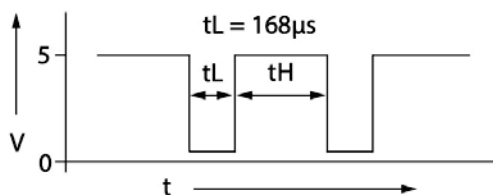
Direction Input



Speed Output

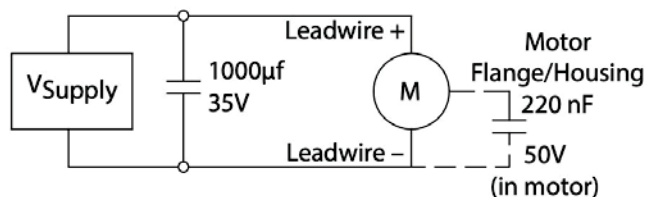


Speed Output Signal



EMC

To meet EMC directive EN 55014, the power supply must be provided with a capacitor 470 μ f, 35V at the output:



Electrical Connections

Version	Description	Wire Color (AWG 24)
5-Wire	1 Supply Voltage (+24V)	Red
	2 Ground	Black
	3 Speed control (V _{in}) 0 - 5V (1V/1000 RPM)	White
	4 Speed output (FG) 36 pulses/rev tachometer	Green
	5 Direction input (Fw/Rv) CCW/CW	Brown
	6 Shield/ground to motor housing	-

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