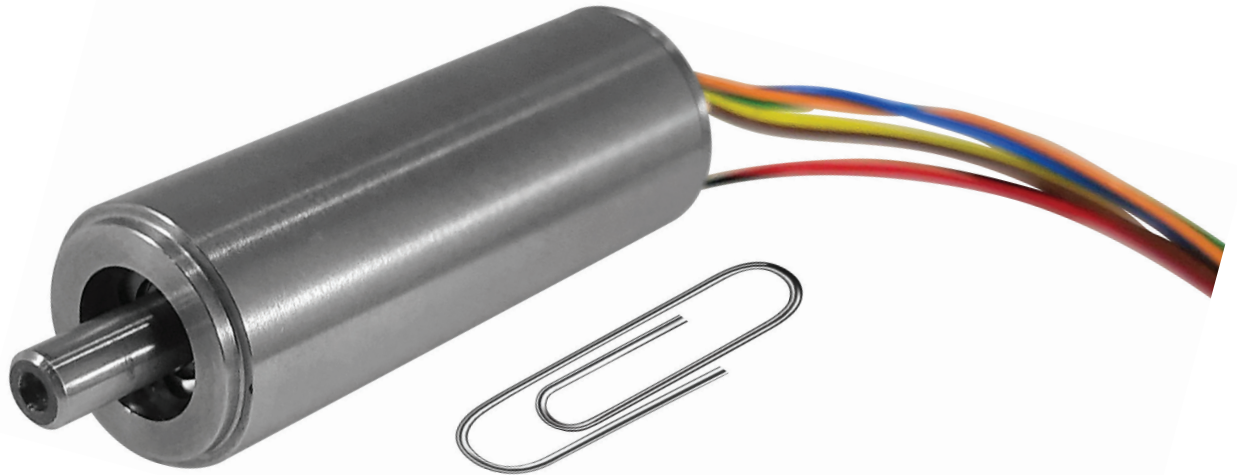


Miniature Brushless DC Motors PerformeX SL05 Series

High Speed, High Performance BLDC Motors



Patented technology in Allied Motion's PerformeX series enables these miniature slotless brushless motors to deliver up to double the performance of equivalently-sized motors.

The PerformeX Series was designed specifically to power precision instruments such as surgical handpieces and similar medical and dental power tools; however, they are also an ideal choice for any application that requires a small yet powerful, high speed BLDC motor, such as small high speed spindles, machine automation, or robotics.

Features & Benefits

- Size 5 (0.5" dia.) high performance brushless DC motor for surgical handpieces
- Double the performance of same sized competitive units
- Available options include planetary gearhead and autoclavability
- Size 5 (12.7 mm) diameter accommodates a wide range of handpiece designs
- Standard 24 and 48 VDC windings
- High speed capability up to 100,000 RPM
- High Km values mean high torque density and high performance
- Slotless design for smooth cog-free torque output
- Precision ball bearings for long life and low audible noise
- Hall-effect feedback as standard
- Grade-1, 2-plane balanced rotor

Options & Accessories

- Planetary gearhead (5:1, 25:1)
- Autoclavable version (minimum of 1000 autoclave cycles)
- Shaft seals
- Custom winding designs
- Custom shaft, cabling, materials designs

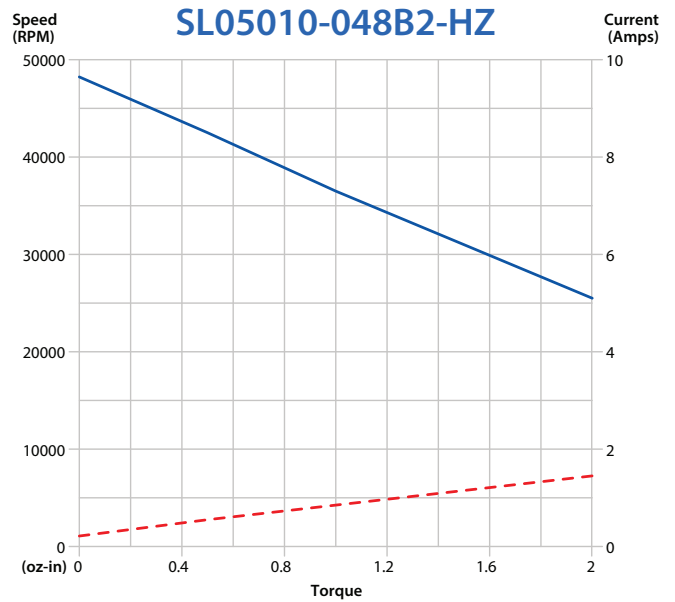
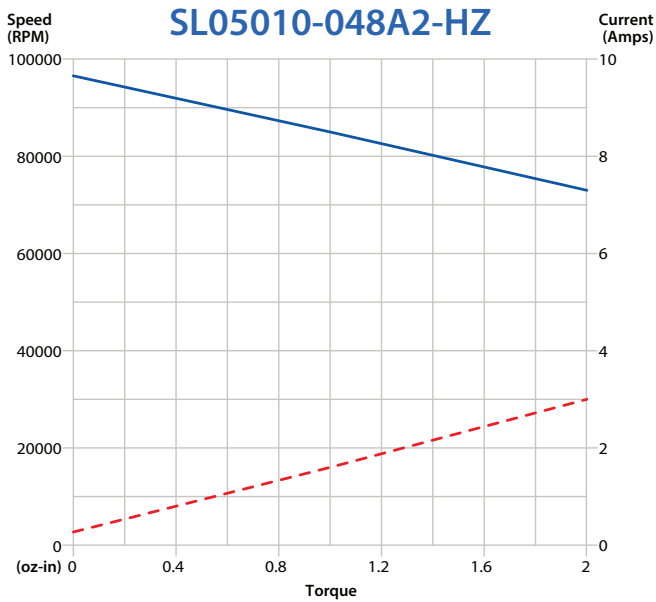
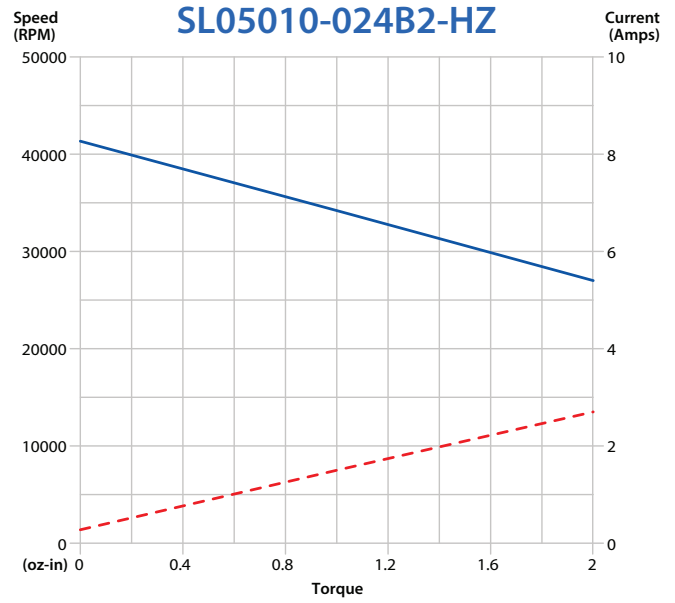
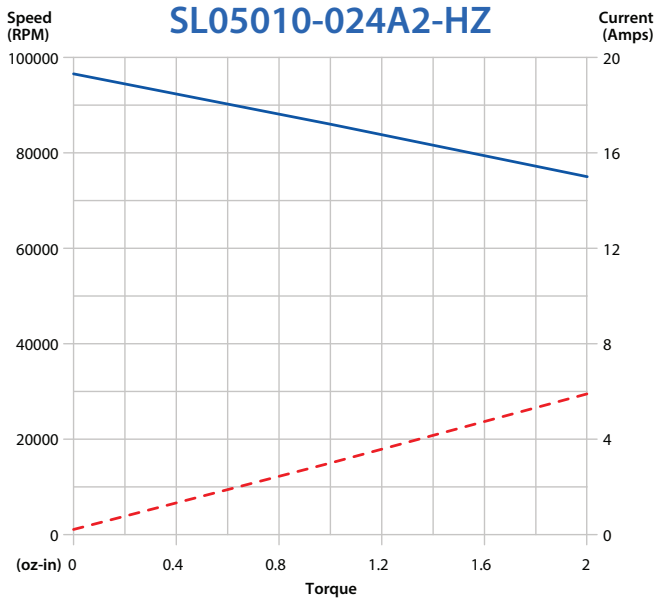
PerformeX SL05 Series – 24 mm Stack Length – Specifications

	UNIT	MODEL			
		SL05010-024A2-HZ	SL05010-024B2-HZ	SL05010-048A2-HZ	SL05010-048B2-HZ
DC Input Voltage	VDC	24 VDC		48 VDC	
Continuous Torque, Max	oz-in	0.898	0.898	0.899	0.863
Continuous Torque w/Heat Sink	oz-in	0.998	0.998	0.998	0.959
Peak Torque, Max	oz-in	9.153	4.569	9.139	4.564
Motor Constant	ozin/sqrt.w	0.449	0.449	0.449	0.449
Electrical Time Constant	mS	0.066	0.066	0.066	0.066
Mechanical Time Constant	mS	3.864	3.696	3.870	3.871
Thermal Resistance	°C/W	19.00	19.00	19.00	19.00
Thermal Resistance w/Heat Sink	°C/W	17.00	17.00	17.00	17.00
Damping Constant	oz-in/Krpm	1.49E-04	1.49E-04	1.49E-04	1.49E-04
Friction Torque	oz-in	0.050	0.050	0.050	0.050
Rotor Inertia	oz-in-sec ²	5.51E-06	5.51E-06	5.51E-06	5.51E-06
Weight	oz	1.240	1.240	1.240	1.240
Length	Inch	1.980	1.980	1.980	1.980
Continuous Current, Max	Amps	2.545	1.272	1.273	0.611
Continuous Current w/Heat Sink	Amps	2.827	1.414	1.414	0.679
Max. Peak Current	Amps	25.932	6.472	12.945	3.229
No-Load Current	Amps	0.270	0.216	0.270	0.216
Torque Constant	oz-in/A	0.353	0.706	0.706	1.413
No-Load Speed	RPM	96,552	48,276	96,552	48,230
Voltage Constant	V/kRPM	0.261	0.522	0.522	1.045
Resistance (ph-ph)	Ohms	0.617	2.472	2.472	9.909
Inductance (@1kHz)	mH	0.041	0.163	0.163	0.652
Max. Winding Temp	°C (°F)	150 (302)	150 (302)	150 (302)	150 (302)

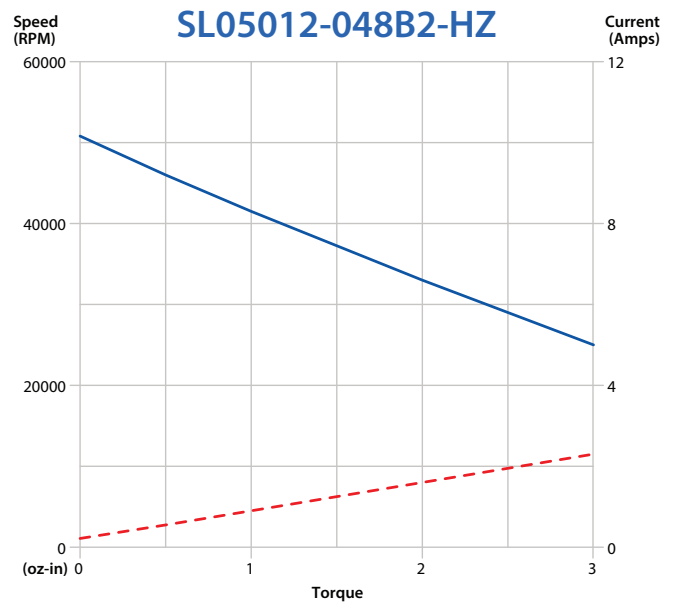
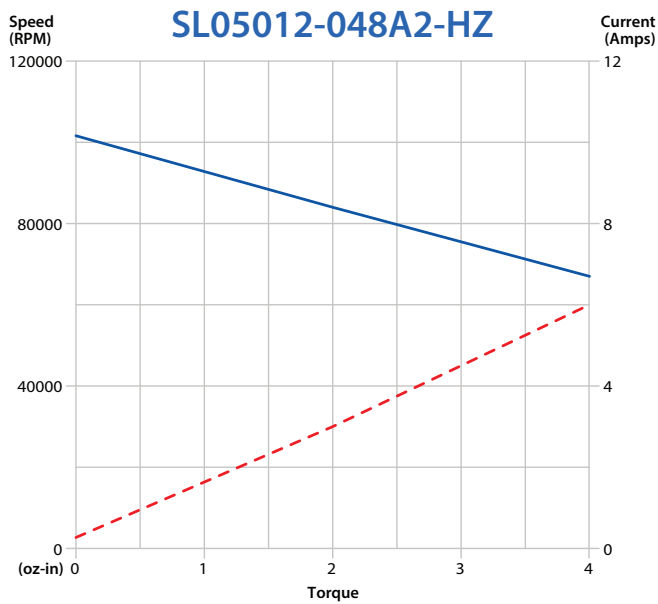
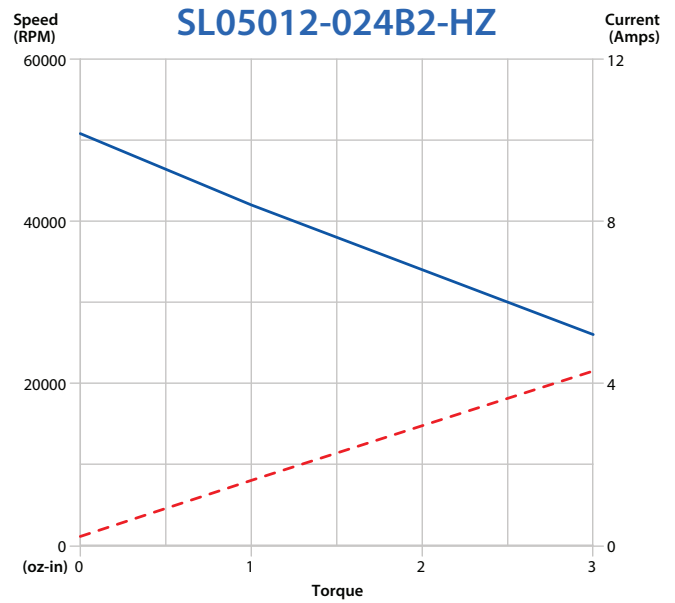
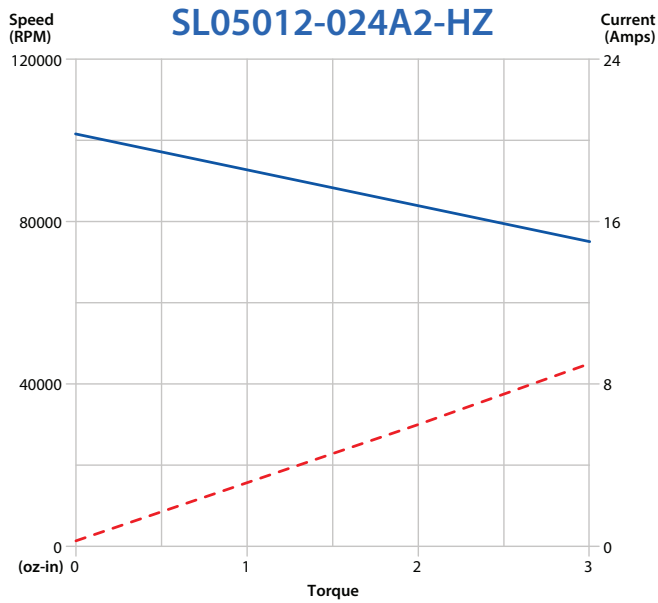
PerformeX SL05 Series – 29.5 mm Stack Length – Specifications

	UNIT	MODEL			
		SL05010-024A2-HZ	SL05010-024B2-HZ	SL05010-048A2-HZ	SL05010-048B2-HZ
DC Input Voltage	VDC	24 VDC		48 VDC	
Continuous Torque, Max	oz-in	1.055	1.054	1.054	1.052
Continuous Torque w/Heat Sink	oz-in	1.172	1.171	1.171	1.169
Peak Torque, Max	oz-in	12.48	6.229	12.458	6.214
Motor Constant	ozin/sqrt.w	0.511	0.511	0.511	0.510
Electrical Time Constant	mS	0.067	0.068	0.068	0.068
Mechanical Time Constant	mS	3.296	3.302	3.302	3.310
Thermal Resistance	°C/W	17.00	17.00	17.00	17.00
Thermal Resistance w/Heat Sink	°C/W	16.00	16.00	16.00	16.00
Damping Constant	oz-in/Krpm	1.93E-04	1.93E-04	1.93E-04	1.93E-04
Friction Torque	oz-in	0.050	0.050	0.050	0.050
Rotor Inertia	oz-in-sec ²	6.09E-06	6.09E-06	6.09E-06	6.09E-06
Weight	oz	1.670	1.670	1.670	1.670
Length	Inch	2.140	2.140	2.140	2.140
Continuous Current, Max	Amps	3.145	1.571	1.571	0.784
Continuous Current w/Heat Sink	Amps	3.495	1.746	1.746	0.871
Max. Peak Current	Amps	37.209	9.286	18.572	4.632
No-Load Current	Amps	0.270	0.216	0.270	0.216
Torque Constant	oz-in/A	0.335	0.671	0.671	1.342
No-Load Speed	RPM	101,613	50,806	101,613	50,806
Voltage Constant	V/kRPM	0.248	0.496	0.496	0.992
Resistance (ph-ph)	Ohms	0.430	1.723	1.723	6.909
Inductance (@1kHz)	mH	0.029	0.117	0.117	0.469
Max. Winding Temp	°C (°F)	150 (302)	150 (302)	150 (302)	150 (302)

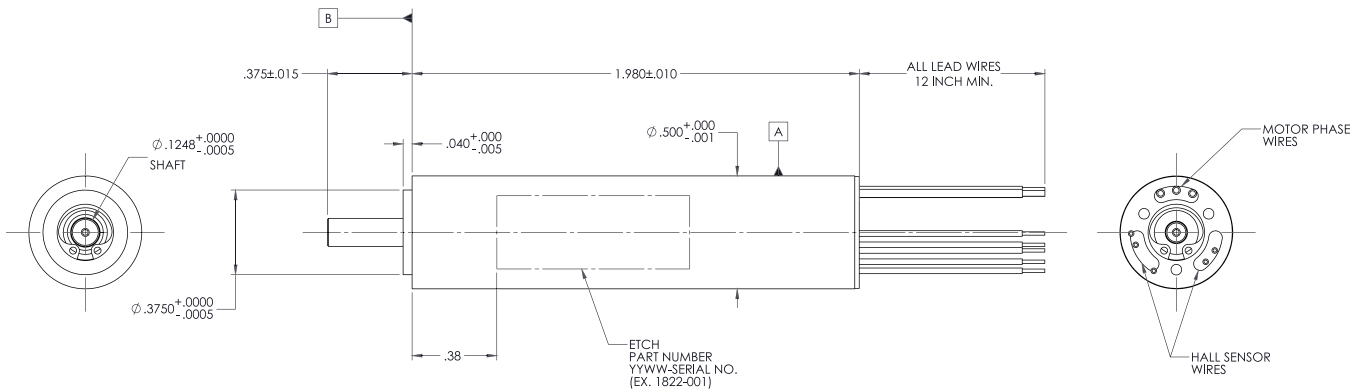
PerformeX SL05 Series – 24 mm Stack Length - Performance



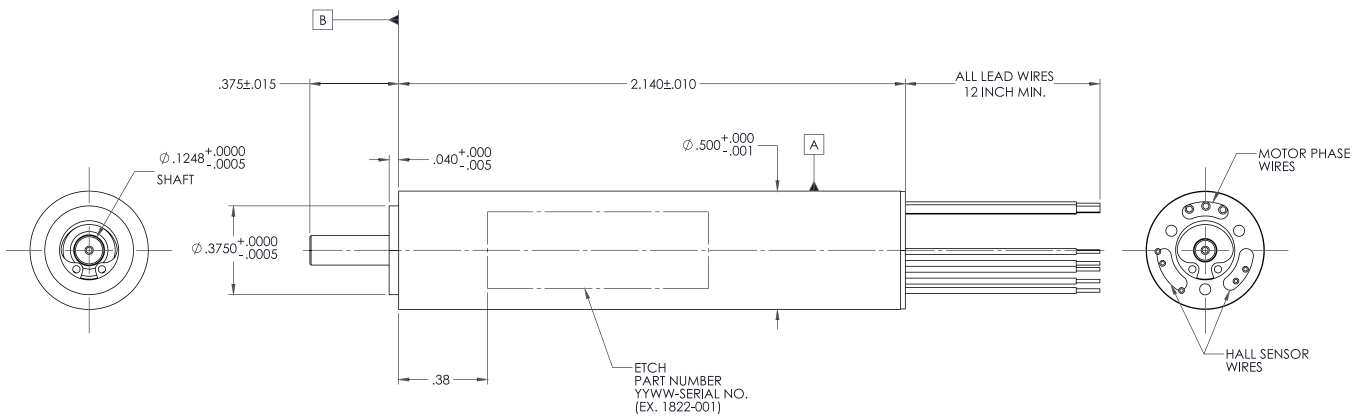
PerformeX SL05 Series – 29.5 mm Stack Length - Performance



PerformeX SL05 Series – 24 mm Stack Length - Dimensions (mm)



PerformeX SL05 Series – 29.5 mm Stack Length - Dimensions (mm)



Allied Motion Solution Centers

Allied Motion Solution Centers provide support to customers around the world from five geographically-strategic locations. Each facility is staffed by experienced application engineers and customer service teams to assist you with all aspects of your motion control needs. We also have a global network of factory-trained Allied Motion Sales Partners to serve you. For contact information on the location nearest you, please see below or visit our website.

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