SHANGHAI MINDONG MECHANISM ELECTRON CO.,LTD

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SMJ

SHANGHAI MINDONG MECHANISM ELECTRON CO.,LTD

DIRECTORY

WORLDWIDE ADVANCED MANUFACTURING TECHNOLOGY & QUALITY ASSURANCE ,
DOMESTICAL PLANT'S PRODUCING COST & PRICE ADVANTAGE.

COMPANY INTRODUCTION

Shang``hai Mindong Mechanism Electron Co.,Ltd, is a subsidiary of SHICOH, which is an international famous Japanese motors group company, is a manufacturer which specialized in research, development and production of coreless brushless motors, coreless servo motors, coreless brush motor and linear motors. We have the advanced motors technology of Japan; we also have the Japanese manufacturing technology & quality assurance; moreover, we are superior to the price of Chinese production cost. Shanghai Mindong Mechanism Electron Co., Ltd will offer you the high-performance, high-quality and high-efficiency motor products; we'll also bring you the most reasonable motor structures to present you the best precise high-tech space.

Business philosophy
Implement the principle of quality first thoroughly, provide the customer and society with high quality and satisfaction products.
Improving management efficiency and improve sustainable development.
Adapting to market changes and contribution to the whole world with premium technology.````

Management policy
Since foundation, Mindong Mechanism Electron Co.,Ltd is insisting on the originality of the motor, contribution all over the world. Component integrity are high quality, high performance motor products.Increasing investment continuiously on Researching and Development.Adhering to Regulations, attaches great importance to the environment, adhere to the enterprise ethics, engaged in business activities.

Coreless motor is a permanent magnet DC servo motor,compared to common motor , the difference is the use of coreless rotor/stator,also called the coreless rotor/stator .coreless motor has following advantages:

- The maximum energy conversion efficiency(an index of energy saving characteristics) : its efficiency in general is more than 70%,some products can reach above 90%(the common core motor at 15−50%);
- Activation,brake fast ,fast response : mechanical time constant less than 28ms,part of the product can reach 10milliseconds,the recommended operating region of the state of high speed run, the flexible speed regulation;
- Reliable operation stability : adaptive ability is strong, speed fluctuation can be controlled within 2%
- Low ectromagnetic interference : using high−quality brush,commutator structure ,small commutation spark ,can be removed from the additional interference resistant device;

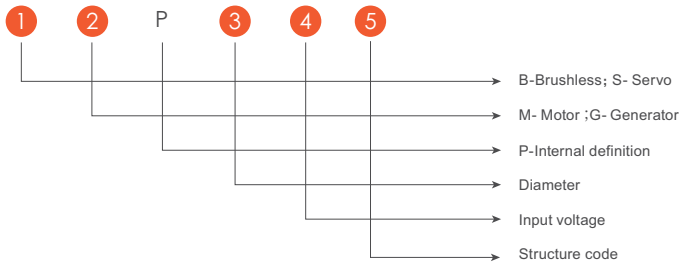
High energy density : with the same power compared with iron core motor , weight,volume reduce by 13−1/2; speed−voltage,speed−torque,speed−current corresponding are presented the standard linear relationship.

Characteristics

- Non iron core,the unique design of high precision oil,thin air gap
- High performance rare earth magnet,high power density
- High torque,high efficiency
- No torque fluctuation
- Excellent volume power ratio,light weight
- Low vibration,high acceleration performance
- Smooth running,quick response
- Low noise
- No cogging
- Low starting torque, wide speed regulating range
- Good heat dissipation effect,low heat,small temperature rise

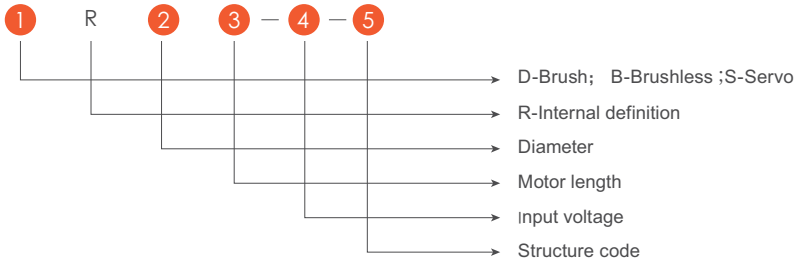
Naming method

BLDC Motor (Coreless)



- Example: BMP6224 as a brushless motor, diameter 62X62mm, rated voltage 24V , rated power 188W

DC Motor (Coreless)

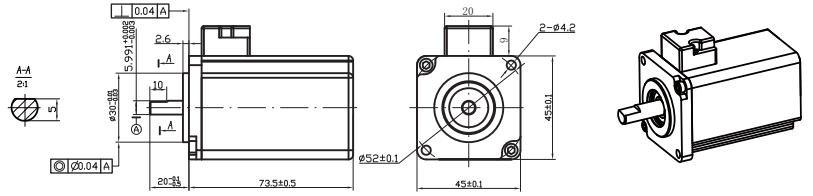


- Example: DR162412F graphite brush DC motor, double output shaft, diameter 16mm, length 24mm, voltage 12VDC

BLDC MOTOR （CORELESS）

Non iron core , the unique design of high-precision coil, thin air gap , high performance rare earth magnet , high power density, high torque , high efficiency , no torque fluctuation , excellent volume power ratio, smooth running, light weight, quick response, no cogging , low starting torque, wide speed range,good heat dissipation effect, low heat , low temperature rise.

BMP45 | Brushless

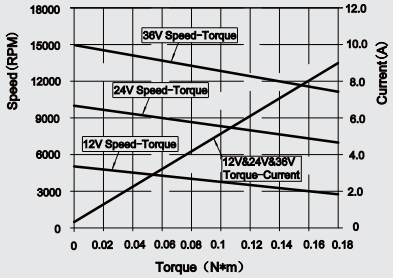


Motor Data

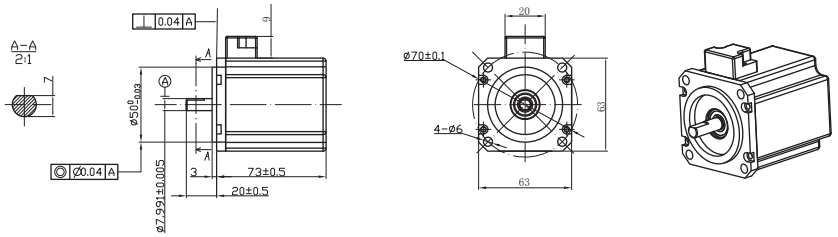
	motor model		BMP4512	BMP4524	BMP4536	
1	no load voltage	V	12	24	36	volts
2	no load speed	Wnl	5000	10000	15000	rpm
3	no load current	Inl	0.4	0.8	1.2	Amps
4	nominal voltage	Vc	12	24	36	VDC
5	nominal torque	Tc	0.18	0.16	0.14	Nm
6	nominal speed	Wc	3000	7500	12000	rpm
7	nominal current	Ic	8.5	7.5	6.6	amps
8	output power	Pc	57	126	176	watts
9	motor constant	Km	0.0335	0.0335	0.0335	Nm / sqrt (w)
10	torque constant	Kt	0.0233	0.0233	0.0233	Nm / apm
11	back EMF constant	Kv	410	410	410	rpm / volt
		Ke	2.44	2.44	2.44	V / Krpm
12	teminal resistance	Rt	0.43	0.43	0.43	Ω
13	cogging and hysteresis torque	Tc Th	0	0	0	mNm
14	terminal inductance	L	30	30	30	μH
15	mechanical time constant	Tm	28	28	28	ms
16	electrical time constant	Te	0.07	0.07	0.07	ms
17	weight	Wt	0.52	0.52	0.52	kg
18	max. efficiency	η	71	81	84	%
19	max. permissible rotor temperature	Temp		120		°C
20	max. output power	Pmax	74	230	435	W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

Graph

Torque - Speed - Current



BMP62 | Brushless

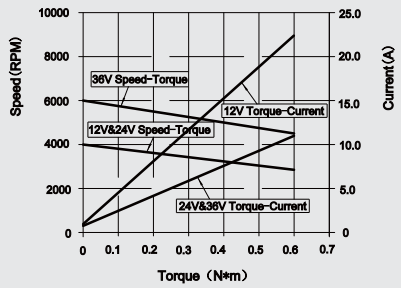


Motor Data

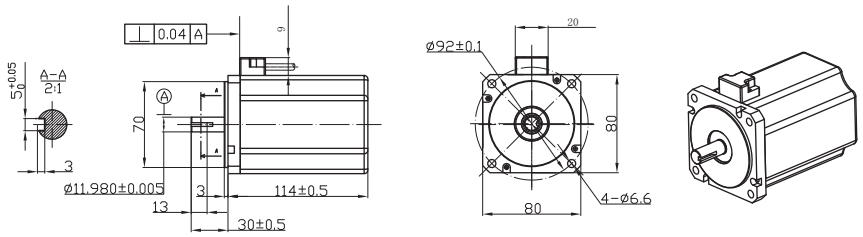
	motor model		BMP6212	BMP6224	BMP6236	
1	no load voltage	V	12	24	36	volts
2	no load speed	Wnl	4000	4000	6000	rpm
3	no load current	Inl	1.2	0.6	0.9	Amps
4	nominal voltage	Vc	12	24	36	VDC
5	nominal torque	Tc	0.6	0.6	0.6	Nm
6	nominal speed	Wc	3000	3000	4520	rpm
7	nominal current	Ic	22.8	11.4	11.4	amps
8	output power	Pc	188	188	284	watts
9	motor constant	Km	0.103	0.104	0.104	Nm / sqrt (w)
10	torque constant	Kt	0.029	0.058	0.058	Nm / apm
11	back EMF constant	Kv	329.3	164.6	164.6	rpm / volt
		Ke	3.03	6.07	6.07	V / Krpm
12	teminal resistance	Rt	0.08	0.31	0.31	Ω
13	cogging and hysteresis torque	Tc Th	0	0	0	mNm
14	terminal inductance	L	9	35	35	μH
15	mechanical time constant	Tm	18	18	18	ms
16	electrical time constant	Te	0.114	0.114	0.114	ms
17	weight	Wt	0.83	0.83	0.83	kg
18	max. efficiency	η	80	82	84	%
19	max. permissible rotor temperature	Temp		120		°C
20	max. output power	Pmax	300	330	710	W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

Graph

Torque - Speed - Current



BMP80 | Brushless

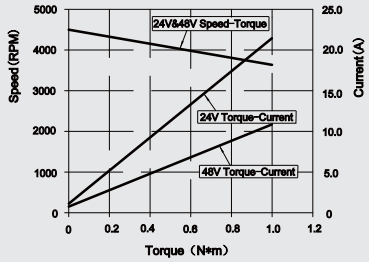


Motor Data

	motor model		BMP8024	BMP8048		
1	no load voltage	V	24	48		volts
2	no load speed	Wnl	4500	4500		rpm
3	no load current	Inl	1.8	0.8		Amps
4	nominal voltage	Vc	24	48		VDC
5	nominal torque	Tc	1	1		Nm
6	nominal speed	Wc	3650	3650		rpm
7	nominal current	Ic	21.6	10.8		amps
8	output power	Pc	382	382		watts
9	motor constant	Km	0.18	0.183		Nm / sqrt (w)
10	torque constant	Kt	0.051	0.102		Nm / apm
11	back EMF constant	Kv	187.2	93.6		rpm / volt
		Ke	5.34	10.7		V / Krpm
12	teminal resistance	Rt	0.08	0.31		Ω
13	cogging and hysteresis torque	Tc Th	0	0		mNm
14	terminal inductance	L	12.6	50		μH
15	mechanical time constant	Tm	20	20		ms
16	electrical time constant	Te	0.158	0.161		ms
17	weight	Wt	1.7	1.7		kg
18	max. efficiency	η	82	85		%
19	max. permissible rotor temperature	Temp	120			°C
20	max. output power	Pmax	1000	1100		W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

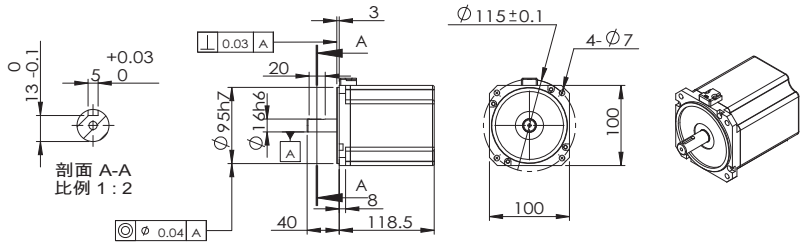
Graph

Torque-Speed- Current



coreless motor| Brushless

BMP100 | Brushless

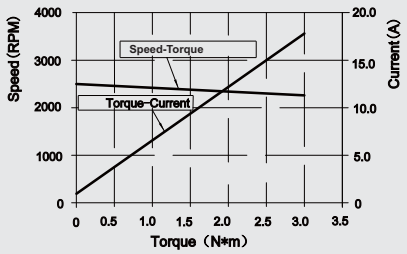


Motor Data

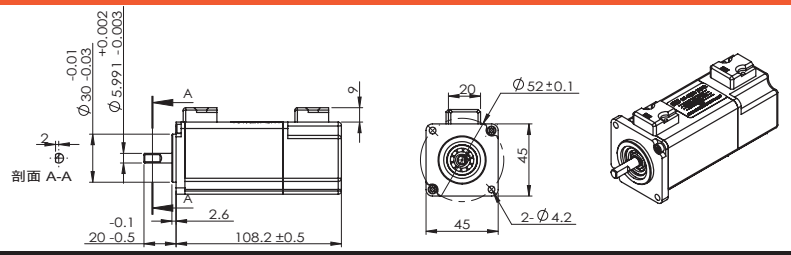
	motor model		BMP10048	BMP10072		
1	no load voltage	V	48	72		volts
2	no load speed	Wnl	2500	3750		rpm
3	no load current	Inl	1.4	1.8		Amps
4	nominal voltage	Vc	48	72		VDC
5	nominal torque	Tc	2.5	2.5		Nm
6	nominal speed	Wc	2300	3450		rpm
7	nominal current	Ic	15	15		amps
8	output power	Pc	602	900		watts
9	motor constant	Km	0.382	0.382		Nm / sqrt (w)
10	torque constant	Kt	0.183	0.183		Nm / apm
11	back EMF constant	Kv	52.1	52.1		rpm / volt
		Ke	19.2	19.2		V / Krpm
12	teminal resistance	Rt	0.24	0.24		Ω
13	cogging and hysteresis torque	Tc Th	0	0		mNm
14	terminal inductance	L	48.5	48.5		μH
15	mechanical time constant	Tm	24	24		ms
16	electrical time constant	Te	0.202	0.202		ms
17	weight	Wt	3.8	3.8		kg
18	max. efficiency	η	86	86		%
19	max. permissible rotor temperature	Temp	110			°C
20	max. output power	Pmax	1160	1890		W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

Graph

Torque-Speed- Current



SMP45 | Servo

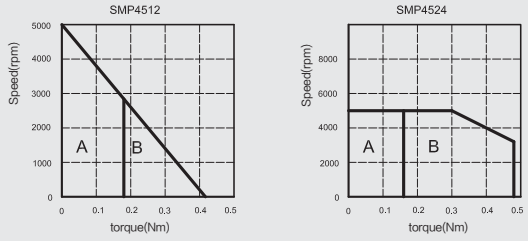


Motor Data

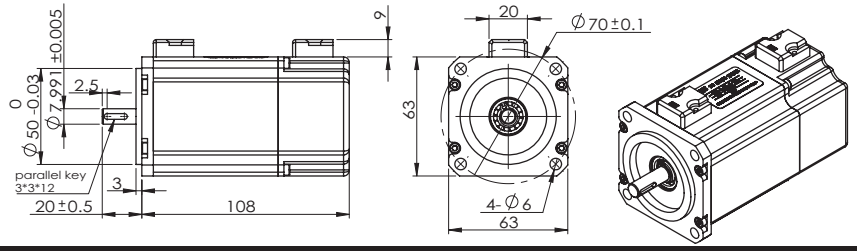
	motor model		SMP4512	SMP4524	
1	motor model		SMP4512	SMP4524	
2	nominal power	PR	57	84	W
3	nominal voltage	VT	12	24	V
4	nominal current	IR	8.5	7.5	A
5	instantaneous maximum current	IP	20	22.5	A
6	nominal speed	NR	3000	5000	rpm
7	maximum speed	NP	5000	5000	rpm
8	nominal torque	TR	0.18	0.16	Nm
9	peak torque	TP	0.42	0.48	Nm
10	torque constant	KT	0.0233		Nm / A
11	back EMF constant	Ke	2.44		V / Krpm
12	rotor inertia	J	0.34		Kg*cm^2
13	terminal resistance	R	0.43		Ω
14	cogging and hysteresis torque	Tc Th	0		mNm
15	terminal inductance	L	30		μH
16	mechanical time constant	Tm	33		ms
17	electric time constant	Te	0.07		ms
18	number of pole pairs	2p	3		
19	weight of motor	W	0.62		Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)			
21	motor insulation class	class B			
22	protection class	IP64			
23	ambient tempertature	-20~+40°C			

Graph

A: Continuous Working Area
B: Repeatedly Working Area



SMP62 | Servo

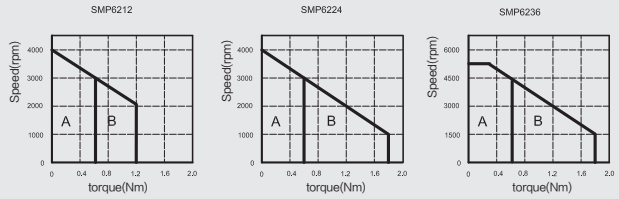


Motor Data

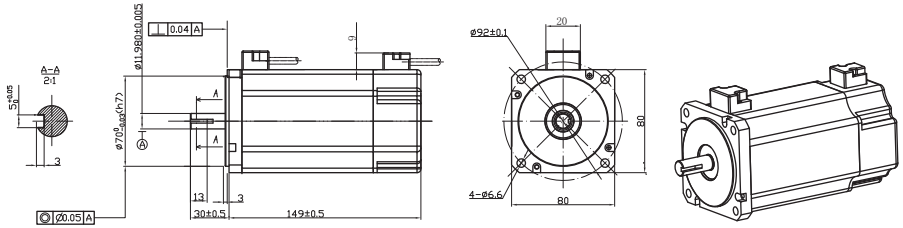
1	motor model		SMP6212	SMP6224	SMP6236	
2	nominal power	PR	188	188	284	W
3	nominal voltage	VT	12	24	36	V
4	nominal current	IR	22.8	11.4		A
5	instantaneous maximum current	IP	45	35		A
6	nominal speed	NR	3000	3000	4520	rpm
7	maximum speed	NP	4000	4000	5000	rpm
8	nominal torque	TR	0.6	0.6		Nm
9	peak torque	TP	1.2	1.8		Nm
10	torque constant	KT	0.029	0.058		Nm / A
11	back EMF constant	Ke	3.03	6.07		V / Krpm
12	rotor inertia	J	1.98	1.98		Kg*cm^2
13	terminal resistance	R	0.08	0.31		Ω
14	cogging and hysteresis torque	Tc Th	0	0		mNm
15	terminal inductance	L	9	35		μH
16	mechanical time constant	Tm	22	22		ms
17	electric time constant	Te	0.113	0.114		ms
18	number of pole pairs	2p	4	4		
19	weight of motor	W	1.01	1.01		Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)				
21	motor insulation class	class B				
22	protection class	IP64				
23	ambient tempertature	-20~+40°C				

Graph

A: Continuous Working Area
B: Repeatedly Working Area



SMP80 | Servo

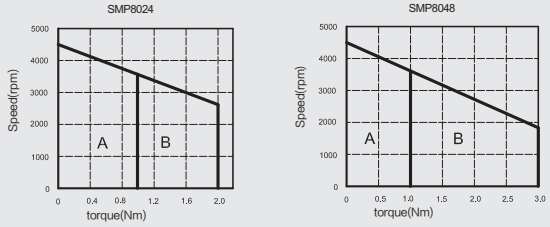


Motor Data

1	motor model		SMP8024	SMP8048		
2	nominal power	PR	382	382		W
3	nominal voltage	VT	24	48		V
4	nominal current	IR	21.6	10.8		A
5	instantaneous maximum current	IP	44	32		A
6	nominal speed	NR	3650	3650		rpm
7	maximum speed	NP	4500	4500		rpm
8	nominal torque	TR	1	1		Nm
9	peak torque	TP	2	3		Nm
10	torque constant	KT	0.051	0.102		Nm / A
11	back EMF constant	Ke	5.34	10.7		V / Krpm
12	rotor inertia	J	6.05	6.05		Kg*cm^2
13	terminal resistance	R	0.08	0.31		Ω
14	cogging and hysteresis torque	Tc Th	0	0		mNm
15	terminal inductance	L	12.6	50		μH
16	mechanical time constant	Tm	24	24		ms
17	electric time constant	Te	0.158	0.161		ms
18	number of pole pairs	2p	4	4		
19	weight of motor	W	2.05	2.05		Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)				
21	motor insulation class	class B				
22	protection class	IP64				
23	ambient tempertature	-20~+40°C				

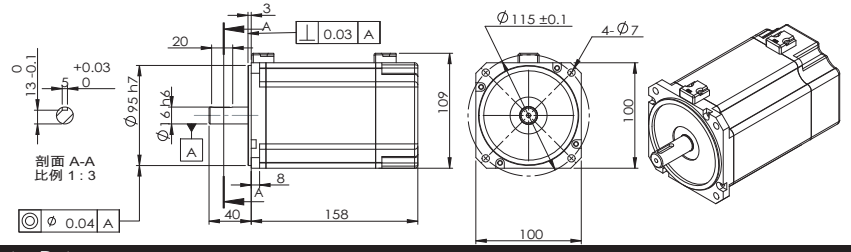
Graph

A: Continuous Working Area
B: Repeatedly Working Area



coreless motor| Servo

SMP100 | Servo

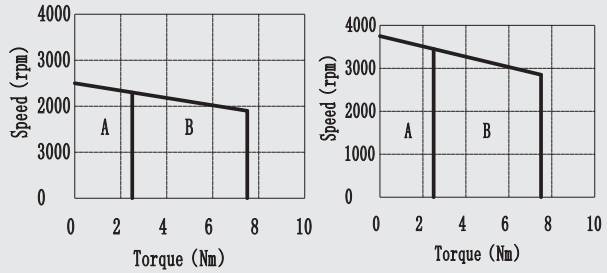


Motor Data

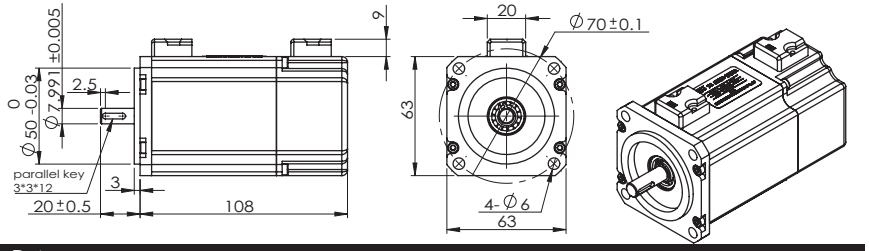
1	motor model		SMP10048	SMP10072	
2	nominal power	PR	600	900	W
3	nominal voltage	VT	48	72	V
4	nominal current	IR	15	15	A
5	instantaneous maximum current	IP	45	45	A
6	nominal speed	NR	2300	3450	rpm
7	maximum speed	NP	2500	3750	rpm
8	nominal torque	TR	2.5	2.5	Nm
9	peak torque	TP	7.5	7.5	Nm
10	torque constant	KT	0.183	0.183	Nm / A
11	back EMF constant	Ke	19.2	19.2	V / Krpm
12	rotor inertia	J	35.4	35.4	Kg*cm^2
13	terminal resistance	R	0.24	0.24	Ω
14	cogging and hysteresis torque	Tc Th	0	0	mNm
15	terminal inductance	L	48.5	48.5	μH
16	mechanical time constant	Tm	26	24	ms
17	electric time constant	Te	0.202	0.202	ms
18	number of pole pairs	2p	4	4	
19	weight of motor	W	4.2	4.2	Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)			
21	motor insulation class	class B			
22	protection class	IP64			
23	ambient tempertature	-20~+40°C			

Graph

A: Continuous Working Area
B: Repeatedly Working Area



BMP62B | Brushless | Brake

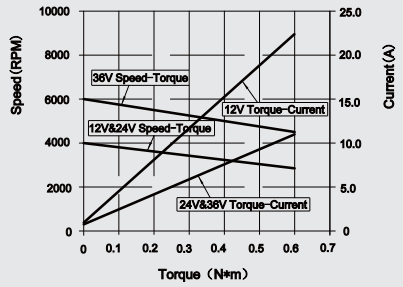


Motor Data

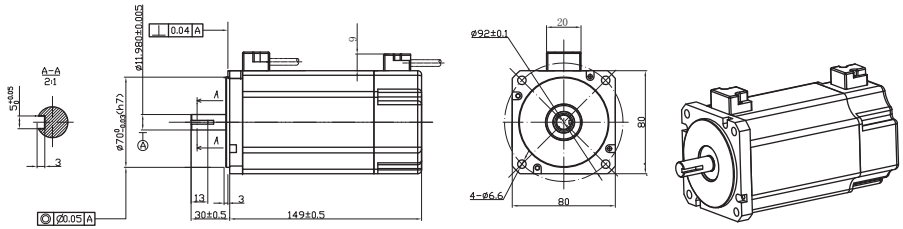
	motor model		BMP6212B	BMP6224B	BMP6236B	
1	no load voltage	V	12	24	36	volts
2	no load speed	Wnl	4000	4000	6000	rpm
3	no load current	Inl	1.2	0.6	0.9	Amps
4	nominal voltage	Vc	12	24	36	VDC
5	nominal torque	Tc	0.6	0.6	0.6	Nm
6	nominal speed	Wc	3000	3000	4520	rpm
7	nominal current	Ic	22.8	11.4	11.4	amps
8	output power	Pc	188	188	284	watts
9	motor constant	Km	0.103	0.104	0.104	Nm / sqrt (w)
10	torque constant	Kt	0.029	0.058	0.058	Nm / apm
11	back EMF constant	Kv	329.3	164.6	164.6	rpm / volt
		Ke	3.03	6.07	6.07	V / Krpm
12	teminal resistance	Rt	0.08	0.31	0.31	Ω
13	cogging and hysteresis torque	Tc Th	0	0	0	mNm
14	terminal inductance	L	9	35	35	μH
15	mechanical time constant	Tm	18	18	18	ms
16	electrical time constant	Te	0.114	0.114	0.114	ms
17	weight	Wt	1.21	1.21	1.21	kg
18	max. efficiency	η	80	82	84	%
19	max. permissible rotor temperature	Temp		120		°C
20	max. output power	Pmax	300	330	710	W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

Graph

Torque - Speed - Current



BMP80B | Brushless | Brake

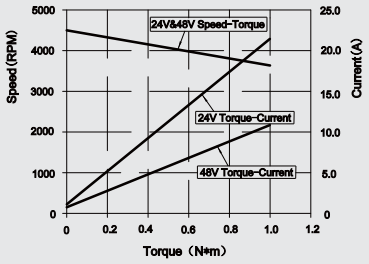


Motor Data

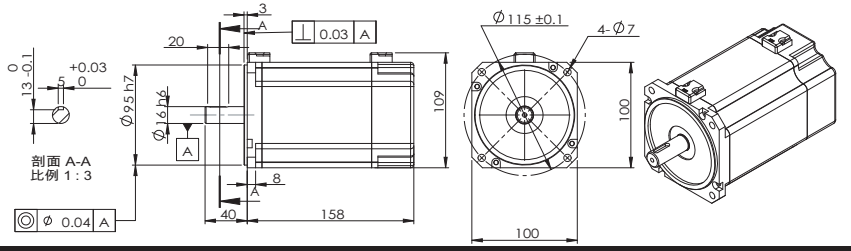
	motor model		BMP8024B	BMP8048B		
1	no load voltage	V	24	48		volts
2	no load speed	Wnl	4500	4500		rpm
3	no load current	Inl	1.8	0.8		Amps
4	nominal voltage	Vc	24	48		VDC
5	nominal torque	Tc	1	1		Nm
6	nominal speed	Wc	3650	3650		rpm
7	nominal current	Ic	21.6	10.8		amps
8	output power	Pc	382	382		watts
9	motor constant	Km	0.18	0.183		Nm / sqrt (w)
10	torque constant	Kt	0.051	0.102		Nm / apm
11	back EMF constant	Kv	187.2	93.6		rpm / volt
		Ke	5.34	10.7		V / Krpm
12	teminal resistance	Rt	0.08	0.31		Ω
13	cogging and hysteresis torque	Tc Th	0	0		mNm
14	terminal inductance	L	12.6	50		μH
15	mechanical time constant	Tm	20	20		ms
16	electrical time constant	Te	0.158	0.161		ms
17	weight	Wt	2.48	2.48		kg
18	max. efficiency	η	82	85		%
19	max. permissible rotor temperature	Temp	120			°C
20	max. output power	Pmax	1000	1100		W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

Graph

Torque-Speed- Current



BMP100B | Brushless | Brake

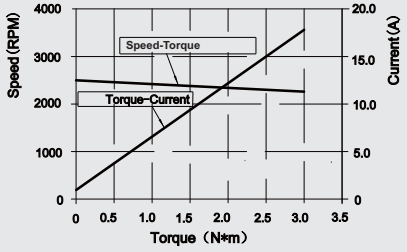


Motor Data

	motor model		BMP1004B	BMP1007B		
1	no load voltage	V	48	72		volts
2	no load speed	Wnl	2500	3750		rpm
3	no load current	Inl	1.4	1.8		Amps
4	nominal voltage	Vc	48	72		VDC
5	nominal torque	Tc	2.5	2.5		Nm
6	nominal speed	Wc	2300	3450		rpm
7	nominal current	Ic	15	15		amps
8	output power	Pc	602	900		watts
9	motor constant	Km	0.382	0.382		Nm / sqrt (w)
10	torque constant	Kt	0.183	0.183		Nm / apm
11	back EMF constant	Kv	52.1	52.1		rpm / volt
		Ke	19.2	19.2		V / Krpm
12	teminal resistance	Rt	0.24	0.24		Ω
13	cogging and hysteresis torque	Tc Th	0	0		mNm
14	terminal inductance	L	48.5	48.5		μH
15	mechanical time constant	Tm	24	24		ms
16	electrical time constant	Te	0.202	0.202		ms
17	weight	Wt	4.6	4.6		kg
18	max. efficiency	η	86	86		%
19	max. permissible rotor temperature	Temp	110			°C
20	max. output power	Pmax	1160	1890		W
21	teminal definitions	U: green V: black W: red +5V: yellow GND:grey H1: brown H2: orange H3: blue Thermistor: violet				

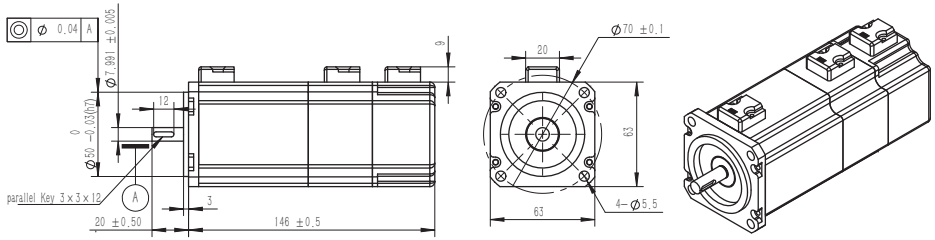
Graph

Torque-Speed- Current



coreless motor| Brushless

SMP62B | Servo | Brake

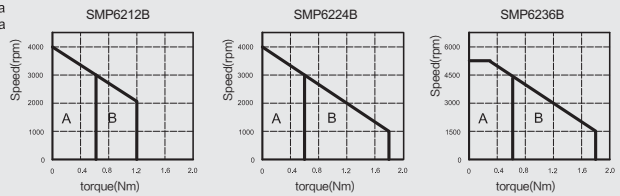


Motor Data

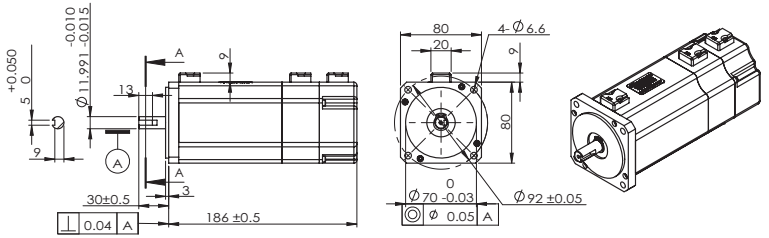
1	motor model		SMP6212B	SMP6224B	SMP6236B	
2	nominal power	PR	188	188	284	W
3	nominal voltage	VT	12	24	36	V
4	nominal current	IR	22.8	11.4		A
5	instantaneous maximum current	IP	45	35		A
6	nominal speed	NR	3000	3000	4520	rpm
7	maximum speed	NP	4000	4000	5000	rpm
8	nominal torque	TR	0.6	0.6		Nm
9	peak torque	TP	1.2	1.8		Nm
10	torque constant	KT	0.029	0.058		Nm / A
11	back EMF constant	Ke	3.03	6.07		V / Krpm
12	rotor inertia	J	1.98	1.98		Kg*cm^2
13	terminal resistance	R	0.08	0.31		Ω
14	cogging and hysteresis torque	Tc Th	0	0		mNm
15	terminal inductance	L	9	35		μH
16	mechanical time constant	Tm	22	22		ms
17	electric time constant	Te	0.113	0.114		ms
18	number of pole pairs	2p	4	4		
19	weight of motor	W	1.51	1.51		Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)				
21	motor insulation class	class B				
22	protection class	IP64				
23	ambient tempertature	-20~+40°C				

Graph

A: Continuous Working Area
B: Repeatedly Working Area



SMP80B | Servo | Brake

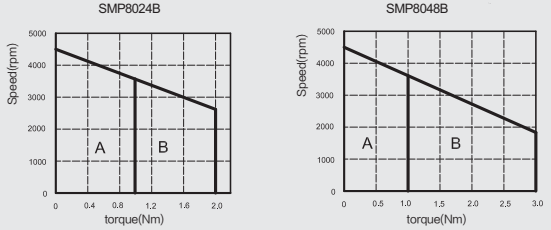


Motor Data

1	motor model		SMP8024B	SMP8048B		
2	nominal power	PR	382	382		W
3	nominal voltage	VT	24	48		V
4	nominal current	IR	21.6	10.8		A
5	instantaneous maximum current	IP	44	32		A
6	nominal speed	NR	3650	3650		rpm
7	maximum speed	NP	4500	4500		rpm
8	nominal torque	TR	1	1		Nm
9	peak torque	TP	2	3		Nm
10	torque constant	KT	0.051	0.102		Nm / A
11	back EMF constant	Ke	5.34	10.7		V / Krpm
12	rotor inertia	J	6.05	6.05		Kg*cm^2
13	terminal resistance	R	0.08	0.31		Ω
14	cogging and hysteresis torque	Tc Th	0	0		mNm
15	terminal inductance	L	12.6	50		μH
16	mechanical time constant	Tm	24	24		ms
17	electric time constant	Te	0.158	0.161		ms
18	number of pole pairs	2p	4	4		
19	weight of motor	W	2.84	2.84		Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)				
21	motor insulation class	class B				
22	protection class	IP64				
23	ambient tempertature	-20~+40°C				

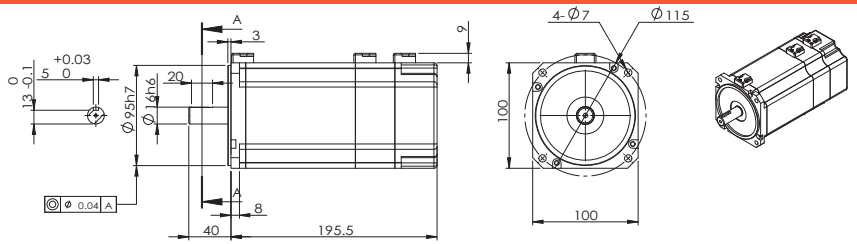
Graph

A: Continuous Working Area
B: Repeatedly Working Area



coreless motor| Servo

SMP100B | Servo | Brake

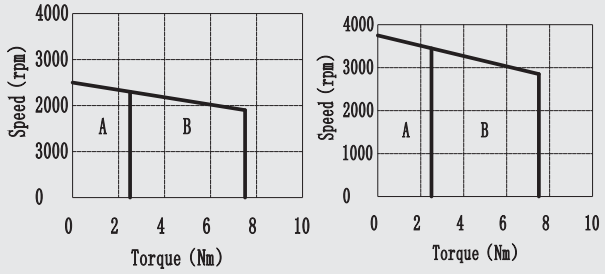


Motor Data

1	motor model		SMP10048B	SMP10072B	
2	nominal power	PR	600	900	W
3	nominal voltage	VT	48	72	V
4	nominal current	IR	15	15	A
5	instantaneous maximum current	IP	45	45	A
6	nominal speed	NR	2300	3450	rpm
7	maximum speed	NP	2500	3750	rpm
8	nominal torque	TR	2.5	2.5	Nm
9	peak torque	TP	7.5	7.5	Nm
10	torque constant	KT	0.183	0.183	Nm / A
11	back EMF constant	Ke	19.2	19.2	V / Krpm
12	rotor inertia	J	35.4	35.4	Kg*cm^2
13	terminal resistance	R	0.24	0.24	Ω
14	cogging and hysteresis torque	Tc Th	0	0	mNm
15	terminal inductance	L	48.5	48.5	μH
16	mechanical time constant	Tm	26	24	ms
17	electric time constant	Te	0.202	0.202	ms
18	number of pole pairs	2p	4	4	
19	weight of motor	W	5.1	5.1	Kg
20	encoder options	incremental (2500PPR) \ Absolute (17\33 bit)			
21	motor insulation class	class B			
22	protection class	IP64			
23	ambient tempertature	-20~+40°C			

Graph

A: Continuous Working Area
B: Repeatedly Working Area



SMP10048B

SMP10072B

Explanation of teminology

1 Nominal voltage

is the applied voltage between two powered phases in block commutation.

2 No load speed

is the speed at which the unloaded motor runs with the nominal voltage applied. It is approximately proportional to the applied voltage.

3 No load current

This is the typical current that the unloaded motor draws when operating at nominal voltage. It increases with rising speed owing to bearing friction and iron losses. No load friction depends heavily on temperature. It decreases in extended operation and increases at lower temperatures.

4 Nominal speed

is the speed set for operation at nominal voltage and nominal torque at a motor temperature of 25° C.

5 Nominal torque

is the torque generated for operation at nominal voltage and nominal current at a motor temperature of 25° C. It is at the limit of the motor's continuous operation range. Higher torques heat up the winding too much.

6 Nominal current

is the current in the active phase in block commutation that generates the nominal torque at the given nominal speed (= max. permissible continuous load current).

7 Stall torque

is the torque produced by the motor when at standstill. Rising motor temperatures reduce stall torque.

8 Stall current

is the quotient from nominal voltage and the motor's terminal resistance. Stall current is equivalent to stall torque.

9 Max. efficiency

is the optimal relationship between input and output power at nominal voltage. It also doesn't always denote the optimal operating point.

10 Terminal resistance phase to phase

is determined through the resistance at 25° C between two connections.

11 Terminal inductance phase to phase

is the winding inductance between two connections. It is measured at 1 kHz, sinusoidal.

12 Torque constant

This may also be referred to as «specific torque» and represents the quotient from generated torque and applicable current.

13 Speed constant

indicates the theoretical no load speed per volt of applied voltage, disregarding friction losses.

14 Speed/torque gradient

The speed/torque gradient is an indicator of the motor's performance. The smaller the value, the more powerful the motor and consequently the less motor speed varies with load variations. It is based on the quotient of ideal no load speed and ideal stall torque (tolerance ± 20%).

15 Mechanical time constant

is the time required for the rotor to accelerate from standstill to 63% of its no load speed.

16 Rotor moment of inertia

is the mass moment of inertia of the rotor, based on the axis of rotation.