

## BRUSHLESS DC MOTOR UNIT - B Series

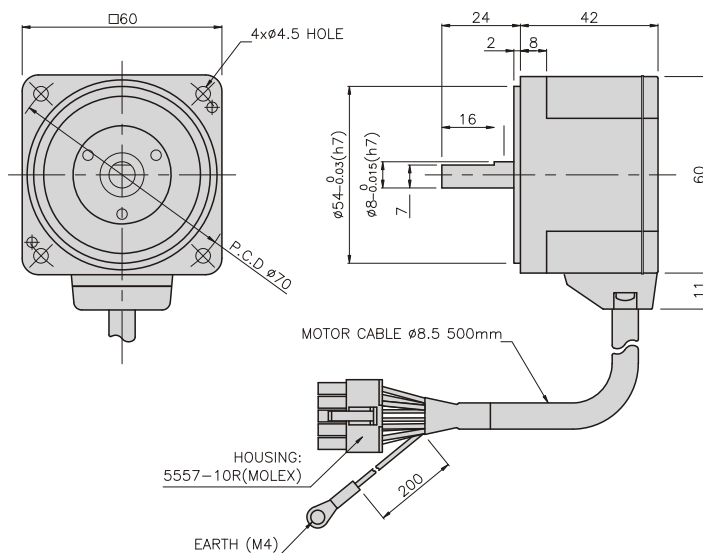
### 20W

□60mm

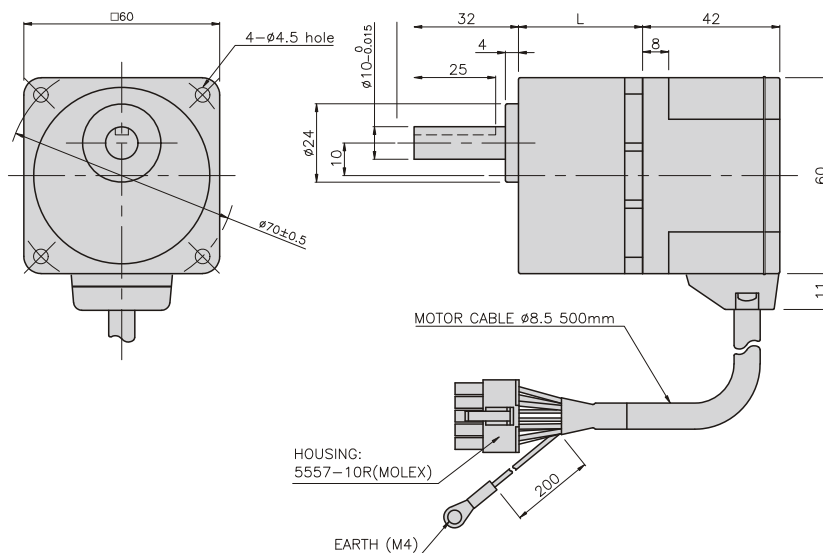
AC voltage input

### DIMENSIONS

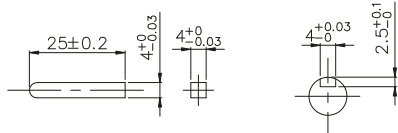
#### K6BS20N ■



#### K6BH20N ■-A□



#### \* KEY · KEY GROOVE



PRODUCT NAME	MOTOR PRODUCT NAME	GEAR HEAD PRODUCT NAME	DECCELERATION RATIO	L	FIXING BOLT
K6BH20NU-A□	K6BH20NU	K6H□B	5~20	34	M4 P0.7×50
K6BH20NC-A□	K6BH20NC		30~100	38	M4 P0.7×55
			200	43	M4 P0.7×60

\* In dimension, in ■ of name represents power voltage U (single-phase 100-115V) and C (single-phase 200-230V).

\* In □ of name, it represents a deceleration ratio.

\* Geared motor is included with fixing bolt set (normal washer, spring washer, cube nut; 4 each)

## → Types

### ◆ MOTOR, GEAR HEAD MOUNTING TYPE

OUTPUT	POWER VOLTAGE	PRODUCT NAME	DECELERATION RATIO
20W	Single phase 100~115V	K6BH20NU-A□	5, 10, 15, 20, 30, 50, 100, 200
	Single phase 200~230V	K6BH20NC-A□	5, 10, 15, 20, 30, 50, 100, 200
40W	Single phase 100~115V	K8BH40NU-A□	5, 10, 15, 20, 30, 50, 100, 200
	Single phase 200~230V	K8BH40NC-A□	5, 10, 15, 20, 30, 50, 100, 200
90W	Single phase 100~115V	K9BH90NU-A□	5, 10, 15, 20, 30, 50, 100, 200
	Single phase 200~230V	K9BH90NC-A□	5, 10, 15, 20, 30, 50, 100, 200

### ◆ STRAIGHT SHAFT TYPE

OUTPUT	POWER VOLTAGE	PRODUCT NAME
20W	Single phase 100~115V	K6BS20NU
	Single phase 200~230V	K6BS20NC
40W	Single phase 100~115V	K8BS40NU
	Single phase 200~230V	K8BS40NC
90W	Single phase 100~115V	K9BS90NU
	Single phase 200~230V	K9BS90NC

### ◆ PINION SHAFT TYPE

OUTPUT	POWER VOLTAGE	PRODUCT NAME
20W	Single phase 100~115V	K6BH20NU
	Single phase 200~230V	K6BH20NC
40W	Single phase 100~115V	K8BH40NU
	Single phase 200~230V	K8BH40NC
90W	Single phase 100~115V	K9BH90NU
	Single phase 200~230V	K9BH90NC

### ◆ GEAR HEAD

APPLICATION MOTOR	GEAR HEAD PRODUCT NAME	DECELERATION RATIO
20W	K6H□B	5, 10, 15, 20, 30, 50, 100, 200
40W	K8H□B	5, 10, 15, 20, 30, 50, 100, 200
90W	K9H□B	5, 10, 15, 20, 30, 50, 100, 200

\* In □ of name, it represents a deceleration ratio.

## → Specification

Product name	COMBI TYPE	K6BH20NU-A□	K6BH20NC-A□	K8BH40NU-A□	K8BH40NC-A□	K9BH90NU-A□	K9BH90NC-A□
	GEAR TYPE	K6BH20NU	K6BH20NC	K8BH40NU	K8BH40NC	K9BH90NU	K9BH90NC
	D-CUT TYPE	K6BS20NU	K6BS20NC	K8BS40NU	K8BS40NC	K9BS90NU	K9BS90NC
Rating output (continuous)	W	20		40		90	
Power input	Voltage V	Single phase 100~115	Single phase 200~230	Single phase 100~115	Single phase 200~230	Single phase 100~115	Single phase 200~230
	Frequency Hz	50/60					
	Rating input current A	0,95	0,55	1,45	0,85	2,55	1,45
	Maximum input current A	1,55	0,9	2,5	1,4	3,9	2,4
Rating torque	N · m(kgf · cm)	0,1(1,0)		0,2(2,0)		0,45(4,5)	
Starting torque	N · m(kgf · cm)	0,12(1,2)		0,24(2,4)		0,54(5,4)	
Rating rotation speed	r/min	2,000					
Speed control range	r/min	100~2,000(Speed ratio 1:20)					
Motor allowed load inertia moment	J kg · m <sup>2</sup>	0,5×10 <sup>-4</sup>		1,8×10 <sup>-4</sup>		5,8×10 <sup>-4</sup>	
	GD <sup>2</sup> kgf · cm <sup>2</sup>	2		7,2		23,2	
Speed change rate	Load	less than or equal to ±1%(0~Rating torque, If rotating at the rated speed)					
	Voltage	less than or equal to ±1%(Power voltage ±10%, If rotating at the rated speed No load)					
	Temperature	less than or equal to ±1%(0~+40° C, If rotating at the rated speed No load)					

## → Common Specification

Items	Specifications
Rotation speed setting method	Controller panel's speed
Acceleration time/ deceleration time	0,5-10 seconds: 2000r/min no load (It may change depending on the load size). To set acceleration time, it is set at slow start on the front panel. To set deceleration time, it is set at slow stop.
Input signal	Photo coupler input method, operating at input resistance of 10kΩ DC 12V±10%, Common in EXT, CW, and CCW
Output signal	Open collector output, External use conditions: less than 26,4V 10mA, common in SPEED OUT/ALARM OUT
Protection function	If the following protection function is operating, then control unit alarm signal gets generated and motor stops automatically. <ul style="list-style-type: none"> <li>● Overload protection function : If more than the rated torque is applied to the motor for more than 5 seconds</li> <li>● Overvoltage protection function : If voltage applied to the control unit goes over the upper bound of the rating voltage allowance</li> <li>● Open phase protection : If cable sensor line gets disconnected during motor operation</li> <li>● Undervoltage protection : If voltage applied to the control unit is less than the lower bound of the rating voltage allowance</li> <li>● Over speed protection : If motor rotation speed exceeds 2500r/min</li> </ul>
Motor insulation class	E Type (120° C)
Maximum extension distance	The distance between motor-control unit is 10,5m (optional KBEW-10 extension cable is used)
Rated time	Continuous

## → Normal specifications

Items		MOTOR	CONTROL UNIT
Insulation resistance		After continuously operating at room temperature and humidity, it should be greater than 100MΩ between coil and case when measured with DC 500V MEGA TESTER.	Protection ground terminal and power input should be greater than 100MΩ when measure with DC500V MEGA TESTER
Dielectric Strength		After continuously operating at room temperature and humidity, there shouldn't be any problem if 60Hz, 1,500V is applied for more than 1 minute between coil and case	There shouldn't be any problem if 60Hz, 1500V is applied for more than 1 minute between protection ground terminal and power input.
Temperature rise		After operating continuously at room temperature and humidity, the temperature increase should be less than 60° C and less than 50° C of temperature increase on the case surface when measure with thermo couple.	
Used environment	Used Ambient temperature	0° C~+40° C(There should not be any freeze),	
	Used Ambient Humidity	less than 85% (no dew condensation),	
	Ambient environment	No corrosive gas or dusts,	
Conservation environment	Ambient temperature	-25 ~ +70° C(There should not be any freeze)	
	Ambient Humidity	less than 85% (no dew condensation)	
Protection class		IP65(Except for the mounting part on the output part)	IP10

## → ALLOWED TORQUE OF COMBINATION TYPE

Unit = upper part: N · m/lower part:kgf · cm

Items	Deceleration ratio	5	10	15	20	30	50	100	200
	Speed control range[r/min]	20~400	10~200	6,7~133	5~100	3,3~67	2~40	1~20	0,5~10
K6BH20N■ - A□		0,45 4,5	0,9 9	1,4 14	1,8 18	2,6 26	4,3 43	6 60	6 60
K8BH40N■ - A□		0,9 9	1,8 18	2,7 27	3,6 36	5,2 52	8,6 86	16 160	16 160
K9BH90N■ - A□		2 20	4,1 41	6,1 61	8,1 81	11,6 116	19,4 194	30 300	30 300

\* Rotation direction shows the same  color as the motor. In other cases, it's the opposite.

## → ALLOWED OVERHANG LOAD AND ALLOWED THRUST

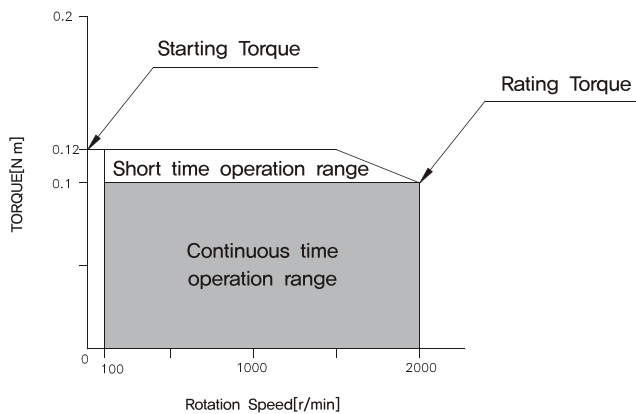
Items		Deceleration ratio	Allowed overhang load				Allowed thrust load	
			From the end of output part : 10mm		From the end of output part : 20mm		N	kgf
			N	kgf	N	kgf		
GEARED MOTOR	K6BH20N■-A□	5	100	10	150	15	40	4
		10~20	150	15	200	20		
		30~200	200	20	300	30		
	K8BH40N■-A□	5	200	20	250	25	100	10
		10~20	300	30	350	35		
		30~200	450	45	550	55		
	K9BH90N■-A□	5	300	30	400	40	150	15
		10~20	400	40	500	50		
		30~200	500	50	650	65		
MOTOR	K6BS20N■		70	7	100	10	· Be careful not to take thrust load, If it's inevitable, keep it under 50% of the motor weight.	
	K8BS40N■		120	12	140	14		
	K9BS90N■		160	16	170	17		

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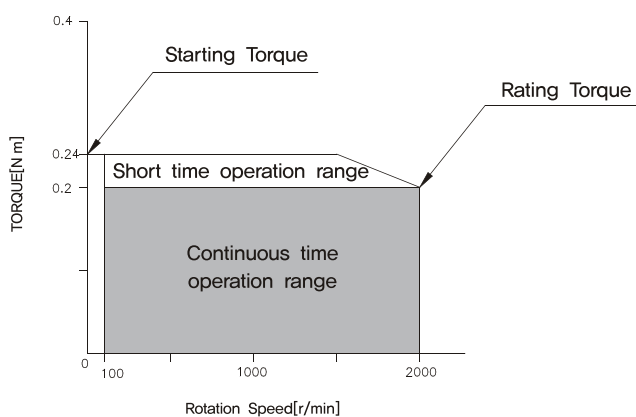
\* In □ of name, it represents a deceleration ratio.

## → Rotation speed - torque characteristic

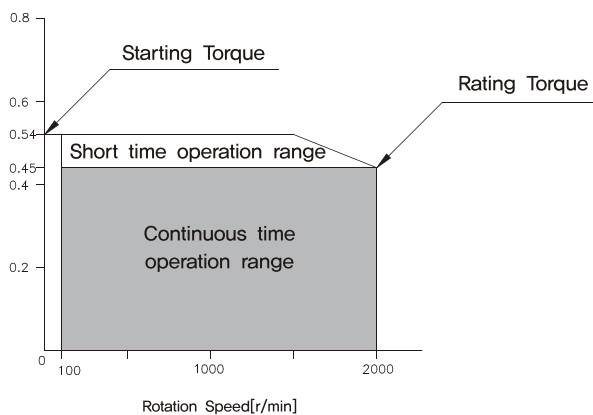
K6BS20N ■ / K6BH20N ■



K8BS40N ■ / K8BH40N ■



K9BS90N ■ / K9BH90N ■



\* In dimension, in ■ of name represents power voltage U (single-phase 100–115V) and C (single-phase 200–230V).  
 \* In □ of name, it represents a deceleration ratio.