

# TPG<sup>®</sup>

MOTORS & DRIVES

www.tpg-tw.com

- 信賴性ある製品 TECHNOLOGY
- 卓越したの性能 PERFECTION
- 保証したの品質 GUARANTEE



## BLDC

直流無刷馬達系列產品

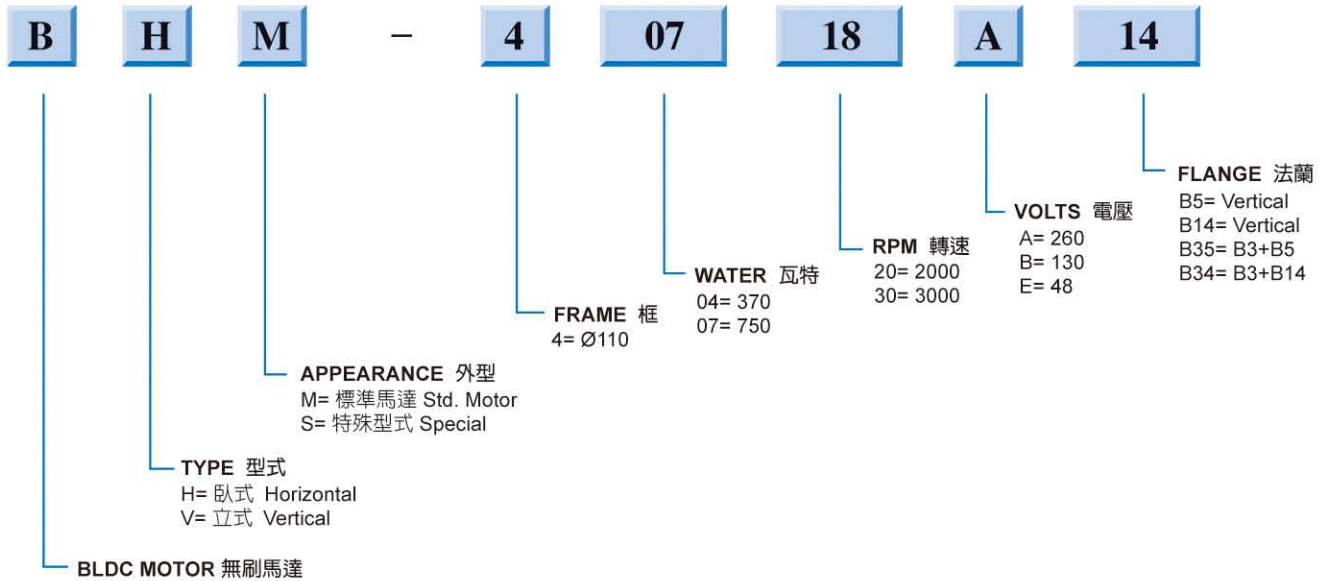
BRUSHLESS GEAR MOTOR SERIES

## 阪神電機

TPG MOTORS & DRIVES

# 直流無刷馬達系列 BLDC MOTOR

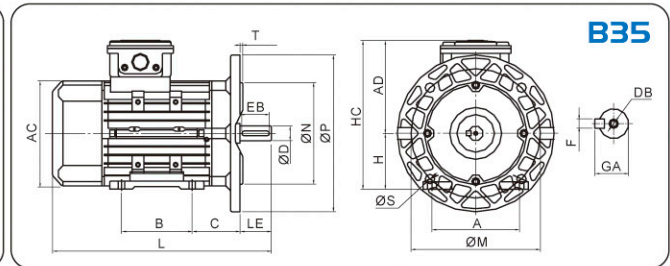
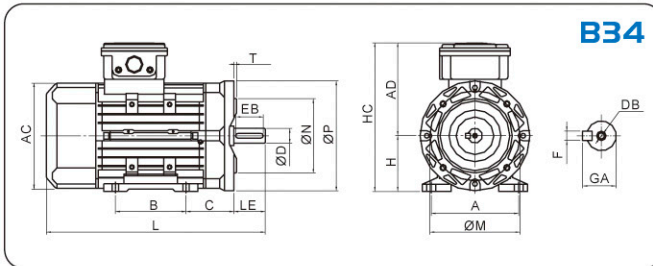
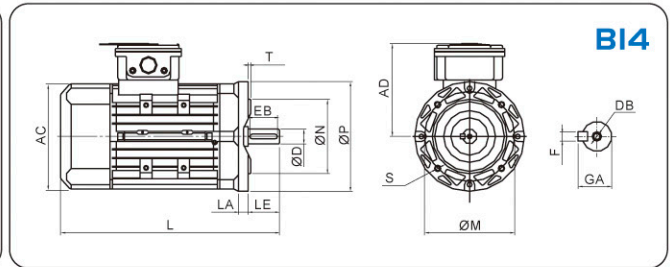
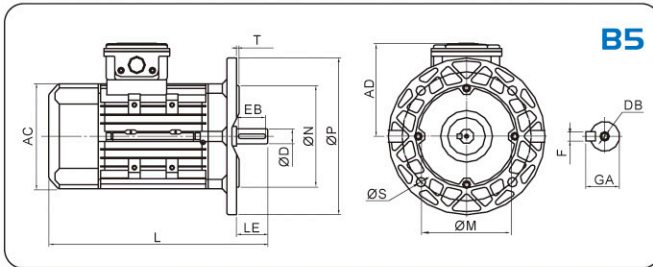
## 機種型號表示 INDICATION OF MODEL NUMBER



### 尺寸表 Dimension

mm

IEC	馬力 HP	RPM	腳架 Foot Dimension				軸 Shaft						法蘭 Flange						Holding Torque (N.m)	Rotational Inertia GD2 (Kgc <sup>2</sup> m <sup>2</sup> )				
			A	B	C	H	LE	LB	EB	GA	F	DB	P	M	N	S	LA	T			L	AD	HC	AC
B5	0.4	2000	-	-	-	-	14	30	25	16	5	M5	160	130	110	10	8	3.5	251	120	-	139	0.39	6.3
		3000	-	-	-	-	14	30	25	16	5	M5	160	130	110	10	8	3.5	251	120	-	139	0.39	6.3
	1	2000	-	-	-	-	19	40	35	21.5	6	M6	200	165	130	12	12	3.5	268	120	-	139	0.45	10.1
		3000	-	-	-	-	19	40	35	21.5	6	M6	200	165	130	12	12	3.5	268	120	-	139	0.45	10.1
	1.1	2000	-	-	-	-	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	-	139	0.51	13.7
		3000	-	-	-	-	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	-	139	0.51	13.7
	2	2000	-	-	-	-	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	-	139	0.56	16.7
		3000	-	-	-	-	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	-	139	0.56	16.7
B14	0.4	2000	-	-	-	-	14	30	25	16	5	M5	105	85	70	M6	-	2.5	251	120	-	139	0.39	6.3
		3000	-	-	-	-	14	30	25	16	5	M5	105	85	70	M6	-	2.5	251	120	-	139	0.39	6.3
	1	2000	-	-	-	-	19	40	35	21.5	6	M6	140	115	95	M6	-	3.5	268	120	-	139	0.45	10.1
		3000	-	-	-	-	19	40	35	21.5	6	M6	140	115	95	M6	-	3.5	268	120	-	139	0.45	10.1
	1.1	2000	-	-	-	-	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	-	139	0.51	13.7
		3000	-	-	-	-	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	-	139	0.51	13.7
	2	2000	-	-	-	-	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	-	139	0.56	16.7
		3000	-	-	-	-	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	-	139	0.56	16.7
B34	0.4	2000	112	90	45	71	14	30	25	16	5	M5	105	85	70	M6	-	2.5	251	120	192	139	0.39	6.3
		3000	112	90	45	71	14	30	25	16	5	M5	105	85	70	M6	-	2.5	251	120	192	139	0.39	6.3
	1	2000	125	100	50	80	19	40	35	21.5	6	M6	140	115	95	M6	-	3.5	268	120	198.5	139	0.45	10.1
		3000	125	100	50	80	19	40	35	21.5	6	M6	140	115	95	M6	-	3.5	268	120	198.5	139	0.45	10.1
	1.1	2000	140	125	61	82	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	206.5	139	0.51	13.7
		3000	140	125	61	82	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	206.5	139	0.51	13.7
	2	2000	140	125	61	82	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	206.5	139	0.56	16.7
		3000	140	125	61	82	24	50	40	27	8	M8	140	115	96	M8	-	3.5	305	120	206.5	139	0.56	16.7
B35	0.4	2000	112	90	45	71	14	30	25	16	5	M5	160	130	110	10	8	3.5	251	120	192	139	0.39	6.3
		3000	112	90	45	71	14	30	25	16	5	M5	160	130	110	10	8	3.5	251	120	192	139	0.39	6.3
	1	2000	125	100	50	80	19	40	35	21.5	6	M6	200	165	130	12	12	3.5	268	120	198.5	139	0.45	10.1
		3000	125	100	50	80	19	40	35	21.5	6	M6	200	165	130	12	12	3.5	268	120	198.5	139	0.45	10.1
	1.1	2000	112	90	45	71	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	206.5	139	0.51	13.7
		3000	112	90	45	71	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	206.5	139	0.51	13.7
	2	2000	112	90	45	71	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	206.5	139	0.56	16.7
		3000	112	90	45	71	24	50	40	27	8	M8	200	165	130	12	12	3.5	305	120	206.5	139	0.56	16.7



### 低壓控制器 LOW VOLTAGE CONTROL BCBA TYPE

型號 Model (BCBA)	0604E	
適用功率 Maximum applicable motor (HP / kW)	1.5/1.1	
連續輸出電流 Rated output current (A)	25	
最大輸出電流 1-min Con.current	60A	
電源 Power source	48V	
容許電壓變動 Permissible AC power source fluctuation	42-52VDC	
冷卻方式Cooling method	Nature cooling	

**特色:**

1. 電機相電流控制。
2. 即時電流控制 - 保護控制器及電機過載電流。
3. 三相橋式設計- 為車輛提供順暢，高效地運行。
4. 電機堵轉保護。
5. 過壓和欠壓保護。

**Features:**

1. Motor phase current control .
2. Real time current control – protect the controller and motor without over current operation.
3. 3 half bridge design – provide smooth, cost-effective operation for the vehicles.
4. Motor stall protection.
5. Over temperature protection.

### 高壓控制器 HIGH VOLTAGE CONTROL BCBB TYPE

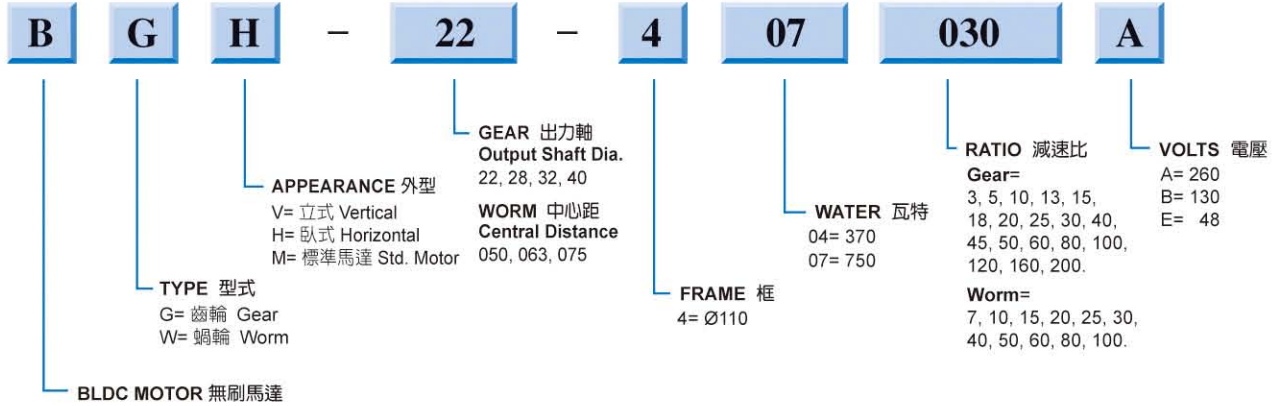
型號 Model (BCBB)	0702A	1402A
適用功率 Maximum applicable motor (HP / kW)	1 / 0.75	2 / 15
連續輸出電流 Rated output current (A)	4.2	8
額定輸出電壓 Rated output voltage (V)	3Ø, 200~240V	
最高輸出頻率 Range of output frequency (Hz)	400Hz	
電源 Power source (Ø,V,Hz)	1Ø, 200~240VAC, 50/60Hz	
容許電壓變動 Permissible AC power source fluctuation	176~264VAC	
冷卻方式Cooling method	Fan cooling	

**特色:**

1. HALL 閉迴路控制
2. 內建煞車電阻
3. PID控制
4. Modbus(RS-485)通訊
5. 自動轉矩補償
6. 自動穩壓輸出調整

**Features:**

1. HALL sensor feedback.
2. Built-in dynamic braking unit.
3. PID control.
4. Modbus(RS-485) communication.
5. Auto-torque compensation.
6. Auto-adjustment for output voltage stability.

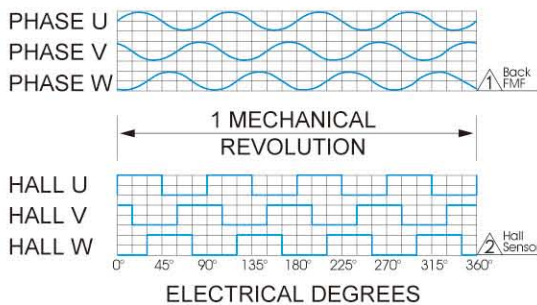


MODEL 機種	OUTPUT SHAFT DIA. 出力軸	WATT 瓦特	GEAR RATIO 減速比											
BGH	22	0.4KW	3	5	8	10	13	15	20	30				
		0.75KW	25	30	35	40	45	60	80	100				
BGV	28	0.4KW	3	5	8	10	15	20	25	30	45			
		0.75KW	100	120	160	200	350							
BGV	32	0.4KW	30	35	40	45	50	60	80	100	120			
		0.75KW	100	120	160	200	250	350	375					
BGV	40	0.4KW	300	400	450	600	750							
		0.75KW	100	120	160	200	250	350	375					

含底色之減速比為輕荷用，屬訂制生產。

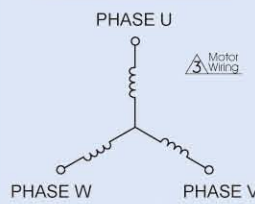
Gear ratio with dark colors should be used for light load machines and they are not ex-stock as standard one.

### BRUSHLESS MOTOR TIMING DIAGRAM 120° PHASING, 4 POLE, 3 PHASE



- 馬達相電壓量測於正轉操作時(視角由出力軸方向)。
- 霍爾元件電壓為 +5 ~ +12 Vdc，需使用隔離銅網之電纜與控制器連接。
- 配線時，電機與控制器勿超過 5M，並且導線超過 3M 時需加大一級(A.W.G)：導線兩端電位差不得大於0.5V。

#### MOTOR WINDING CONFIGURATION



Function	Color Code
Hall U	白 white
Hall V	藍 blue
Hall W	黃 yellow
Hall VCC	紅 red
Hall GND	黑 black
Phase U	白 white
Phase V	黑 black
Phase W	黃 yellow

- The wave graph for motor U.V.W. ends while testing the voltage under motor CW direction running (viewed from output shaft end).
- HALL SENSOR VOLTAGE +5 ~ +12 Vdc must use the cable which is with the isolated brass net design to connect with control.
- The actual distance between motor & control can't exceed 5meters, the connecting cable should be used higher grade a.w.g. wires while distance over 3 meters, and the electric difference can't be over 0.5V for both ends of this cable.



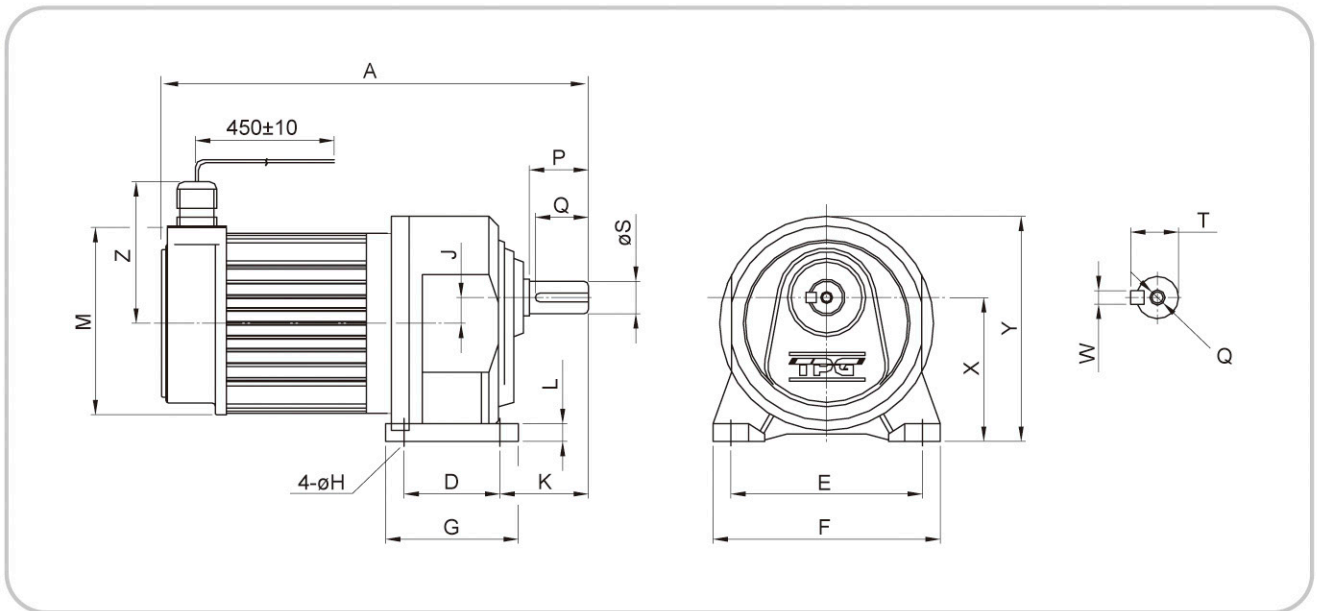
**BGH TYPE**

臥式直流無刷減速機  
Brushless Horizontal Gear Motor

尺寸表 Dimension

mm

馬達 kW/HP	出力軸徑 OUTPUT SHAFT DIA	減速比 GEAR RATIO	A	腳架尺寸 FOOT DIMENSION					L	J	K	M	X	Y	Z	出力軸端 OUTPUT SHAFT					
				D	E	G	F	H								P	Q	S	T	W	R
0.4KW 1/2HP	22	3~30	284.5	65	130	90	154	11	12	17.5	60	127	152.5	97.5	97	40	35	22	25	7	M6
	28	3~30	313.5	90	140	120	175	11	15	23	67.5	127	169	110	97	45	40	28	31	7	M8
	32	25~100	333	130	170	160	210	13	18	26.9	76	127	210	138.5	97	55	50	32	36.5	10	M8
0.75KW 1HP	28	3~45	313.5	90	140	120	175	11	15	23	67.5	127	169	110	97	45	40	28	31	7	M8
	32	30~120	333	130	170	160	210	13	18	26.9	76	127	210	138.5	97	55	50	32	36.5	10	M8
	40	100~200	345	150	210	196	256	15	20	32.5	93	127	227	150	97	65	60	40	45	10	M10



註:

- 馬達額定轉速2500rpm。
- 減速比會有兩種出力軸規格，軸徑小為輕負荷，軸徑大為重負荷，請依實際需求選用。

Remarks:

- Motor speed is fixed at 2500rpm by factory.
- There will be two options output shaft upon ratio 1:100. Smaller one is for lighter load and the bigger one is for the load heavier. Please select them according to your actual demands.



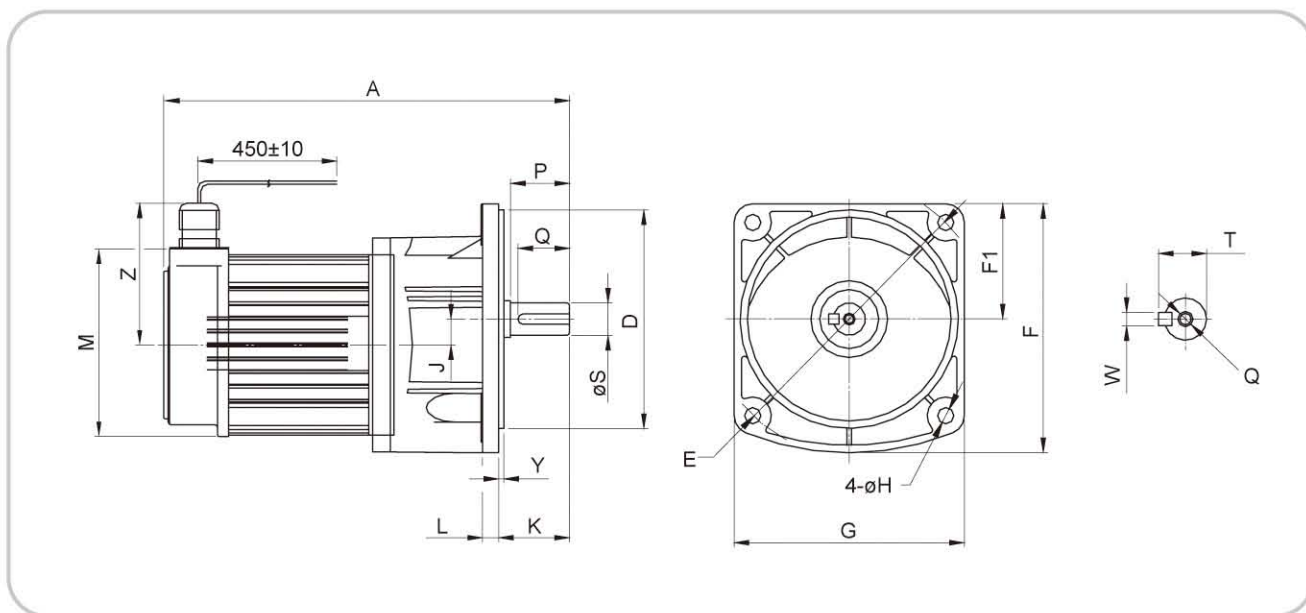
**BGV TYPE**

立式直流無刷減速機  
Brushless Vertical Gear Motor

尺寸表 Dimension

mm

馬達 kW/HP	出力軸徑 OUTPUT SHAFT DIA	減速比 GEAR RATIO	A	腳架尺寸 FOOT DIMENSION							L	J	K	M	Y	Z	出力軸端 OUTPUT SHAFT					
				D	E	G	F	F1	H	P							Q	S	T	W	R	
0.4KW 1/2HP	22	3~30	284.5	148	185	156	168.5	78	11	12	17.5	48	127	3.5	97	40	35	22	25	7	M6	
	28	3~30	313.5	170	215	177	194	88.5	11	15	23	55	127	4	97	45	40	28	31	7	M8	
	32	25~100	333	185	255	210	235.4	110	13	18	26.9	62	127	4	97	55	50	32	36.5	10	M8	
0.75KW 1HP	28	3~45	313.5	170	215	177	194	88.5	11	15	23	55	127	4	97	45	40	28	31	7	M8	
	32	30~120	333	185	255	210	235.4	110	13	18	26.9	62	127	4	97	55	50	32	36.5	10	M8	
	40	100~200	345	230	310	250	273	128	15	20	32.5	75	127	5	97	65	60	40	45	10	M10	

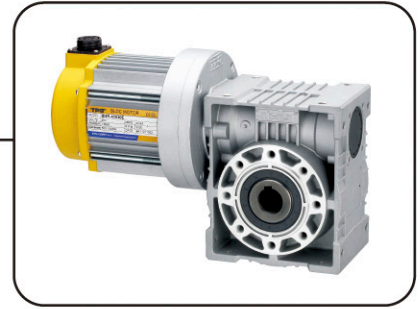


註:

- 馬達額定轉速2500rpm。
- 減速比會有兩種出力軸規格，軸徑小為輕負荷，軸徑大為重負荷，請依實際需求選用。

Remarks:

- Motor speed is fixed at 2500rpm by factory.
- There will be two options output shaft upon ratio 1:100. Smaller one is for lighter load and the bigger one is for the load heavier. Please select them according to your actual demands.

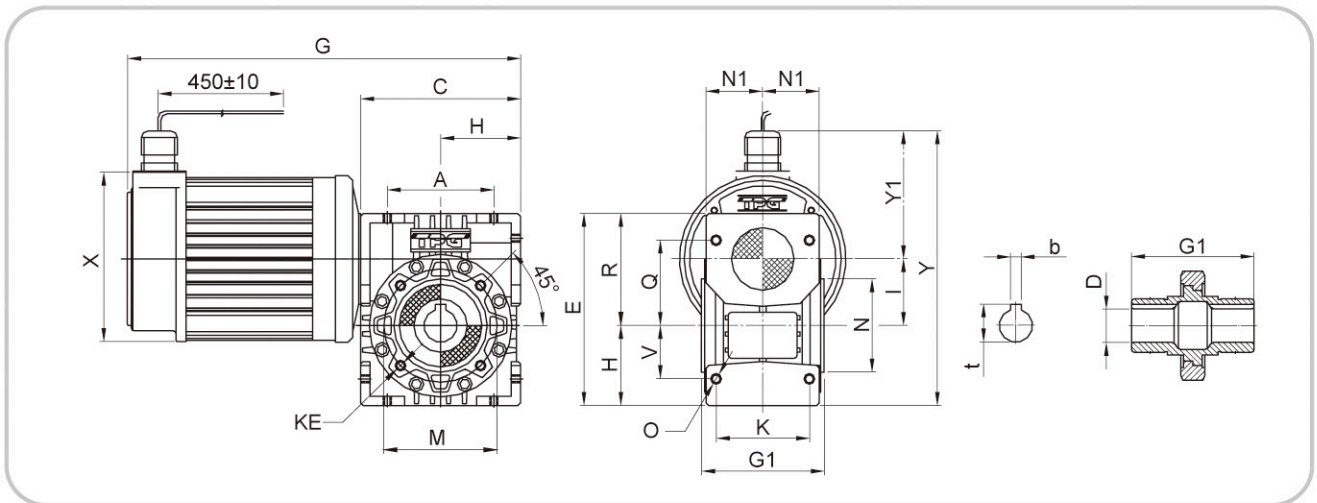


**BWM TYPE** 中空蝸輪減速機  
Brushless-Hollow Shaft Worm Gear Motor

尺寸表 Dimension

mm

馬達 kW/HP	中心距 CENTRAL DISTANCE	G	腳架尺寸 FOOT DIMENSION					E	H	R	I	Y	Y1	C	X	KE	M	出力軸端 OUTPUT SHAFT					
			A	K	V	Q	O											G1	D	t	b	N	N1
0.4KW 1/2HP	050	290	80	70	40	64	M8	144	60	84	50	206	97	120	127	M8	85	92	25	28.3	8	70	43.5
	063	316	100	85	50	80	M8	175	72	102	63	231	97	144	127	M8	95	112	25	28.3	8	80	53
	075	352.5	120	90	60	93	M10	205	86	119	75	257	97	175	127	M8	115	120	28	31.3	8	95	57
0.75KW 1HP	050	290	80	70	40	64	M8	144	60	84	50	206	97	120	127	M8	85	92	25	28.3	8	70	43.5
	063	316	100	85	50	80	M8	175	72	102	63	231	97	144	127	M8	95	112	25	28.3	8	80	53
	075	352.5	120	90	60	93	M10	205	86	119	75	257	97	172	127	M8	115	120	28	31.3	8	95	57



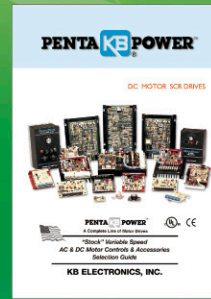
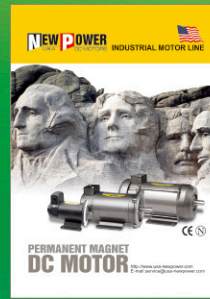
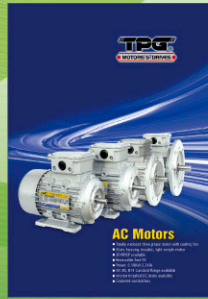
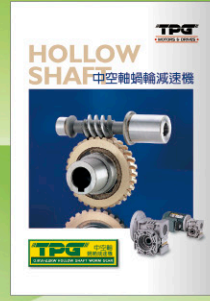
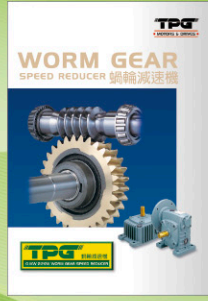
MODEL 機種	CENTRAL DISTANCE 中心距	WATT 瓦特	GEAR RATIO 減速比									
BWM	050	0.4KW	7	10	15	20	25	30	40	50	60	80
		0.75KW	7	10	15	20	25	30				
	063	0.4KW	40	50	60	70	100					
		0.75KW	7	10	15	20	25	30	40	50	60	
	075	0.4KW	50	60	70	100						
		0.75KW	7.5	10	15	20	25	30	40			

註:

- 馬達額定轉速2500rpm。
- 減速比會有兩種出力軸規格，軸徑小為輕負荷，軸徑大為重負荷，請依實際需求選用。

Remarks:

- Motor speed is fixed at 2500rpm by factory.
- There will be two options output shaft upon ratio 1:100. Smaller one is for lighter load and the bigger one is for the load heavier. Please select them according to your actual demands.



ISO 9001 : 2008

**MANUFACTURER:**  
**TAIWAN PRECISION GEAR CORP.**  
 TEL: 886-4-25351329 FAX: 886-4-25351467  
 E-mail: tpgcorp@ms13.hinet.net

**PARTNER:**

**(CHINA)**  
**TPG MOTORS & DRIVES (CHINA) CO. LTD.**  
 TEL: 86-769-22335207 FAX: 86-769-22335203  
 E-mail: tpgcorp@163.com

**(THAILAND)**  
**TPG MOTORS & DRIVES (THAILAND) CO. LTD.**  
 TEL: 66-2-2778878 FAX: 66-2-2779788  
 E-mail: tpg\_th@yahoo.com

**(VIETNAM)**  
**TPG MOTORS & DRIVES (VIETNAM) CO., LTD.**  
 TEL: 84-8-3-8165878 FAX: 84-8-3-8165876  
 E-mail: tpg\_vn@yahoo.com

**(INDIA)**  
**TPG MOTORS & DRIVES (INDIA) PVT. LTD.**  
 TEL: 91-44-23634199 FAX: 91-44-23634299  
 E-mail: tpg\_in@yahoo.com

**(MALAYSIA)**  
**TPG MOTORS & DRIVES (MALAYSIA) SDN BHD**  
 TEL: 60-3-89616916 FAX: 60-3-89616921  
 E-mail: tpg\_ma@yahoo.com

**(INDONESIA)**  
**TPG MOTORS & DRIVES (INDONESIA) CO., LTD.**  
 TEL: 62-21-45846725 FAX: 62-21-45846726  
 E-mail: tpg\_ind@yahoo.com

**(SINGAPORE)**  
**TPG MOTORS & DRIVES (SINGAPORE) PTE. LTD.**  
 TEL: 65-62456007 FAX: 65-62456017  
 E-mail: tpgsin@singnet.com.sg