

Certificates 證書



Patents 專利

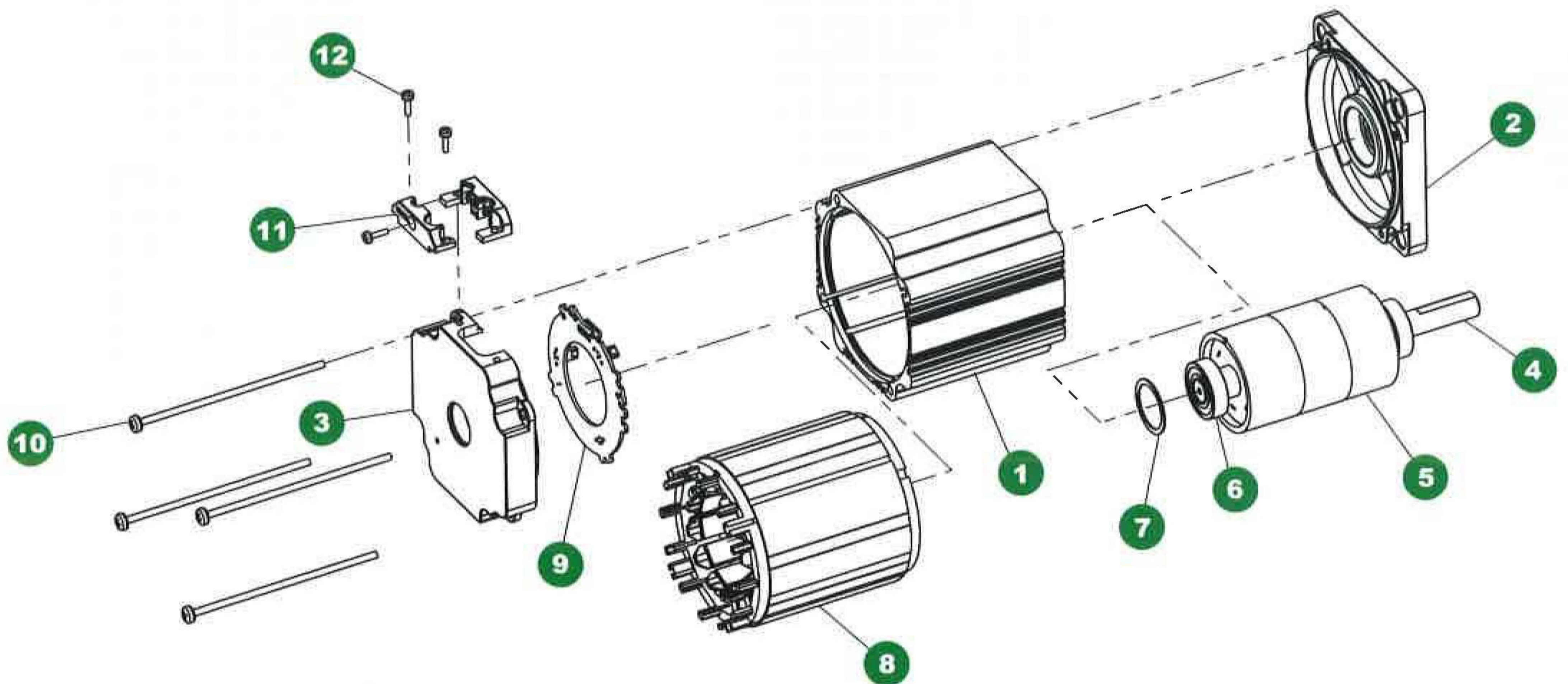


Permanent magnetic Brushless DC Motor

何謂永磁式無刷馬達

將傳統DC有刷馬達的碳刷與整流子改以電子元件hall sensor取代。並佐以驅動器提供更多元化的控制方式。除擁有傳統DC有刷馬達的所有優點外，更進化為體積小、扭力大、控速範圍大的高效率控制模組。

Using the hall sensor to replace the DC brush motor's carbon brush and commutator, and the driver also provide more diversification control function. Evolution to a more compact, higher torque, wide speed control limit and high efficiency control module.



NO.	零件名稱 (Name of parts)	NO.	零件名稱 (Name of parts)
1	框架 Frame	7	波浪型華司 Wave washer
2	凸托架 Front end bracket	8	定子 Stator
3	托架 End bracket	9	Hall板 Hall sensor PCB
4	軸心 Shaft	10	螺絲 Screw
5	磁鐵 Magnet	11	舞司 Bush
6	軸承 Bearing	12	螺絲 Screw

Formula 相關公式

1. P_i (power input) = V (voltage) x I (current)
2. P_o (Power output) = Torque(N-m) x ω (rad/s) = $0.1 \times T$ (kg-cm) x motor speed(rpm) x $2\pi/60$
 $1(\text{kg-cm}) = 0.1 (\text{N-m})$; $1(\text{rpm}) = 2\pi/60(\text{rad/s})$
3. Efficiency(η) = P_o (Power output) \div P_i (Power input) x 100%
4. 1HP = 746watt

Advantage of BLDC motor

高效率無刷馬達優點介紹

- ① 轉子慣量低，運轉平順安靜
Lower rotor inertia, smooth rotate and quiet.
- ② 高效率，低溫升。
Higher efficiency. Lower temperature rise.
- ③ 擁有較同功率傳統AC馬達體積小、重量輕的特性。
More compact than same power AC motor.
- ④ 寬廣的控速範圍，在低轉速可保持扭矩。並可設定緩起動、緩停等功能。
Wide speed control limit. Slow start and Slow down, Keep the torque when low speed rotation.
- ⑤ 無碳刷，無磨擦產生火花之風險，免維修保養，使用壽命長。
Without carbon brush, no need maintenance. Long life time.
- ⑥ 內含溫度開關。預防過負載使用並保護馬達過熱。
Motor with temperature switch to prevent motor overload and overheat.
- ⑦ 無刷驅動器可設定多種保護程式：過電流 過電壓 低電壓 過熱保護，避免設備損壞。
Several driver protect function : Over current, over voltage, overheat and low voltage. to prevent equipment breakdown.
- ⑧ 可外拉速度顯示面板及異常燈號，即時監控。
Pulse(speed) output. Alarm output. Easier control.
- ⑨ 可接受多樣速度命令：電壓調速、電流調速、脈波調速。
Speed setting: VR control. Current control. DC voltage control. Pulse control.

How to choose BLDC motor

機種選購注意事項

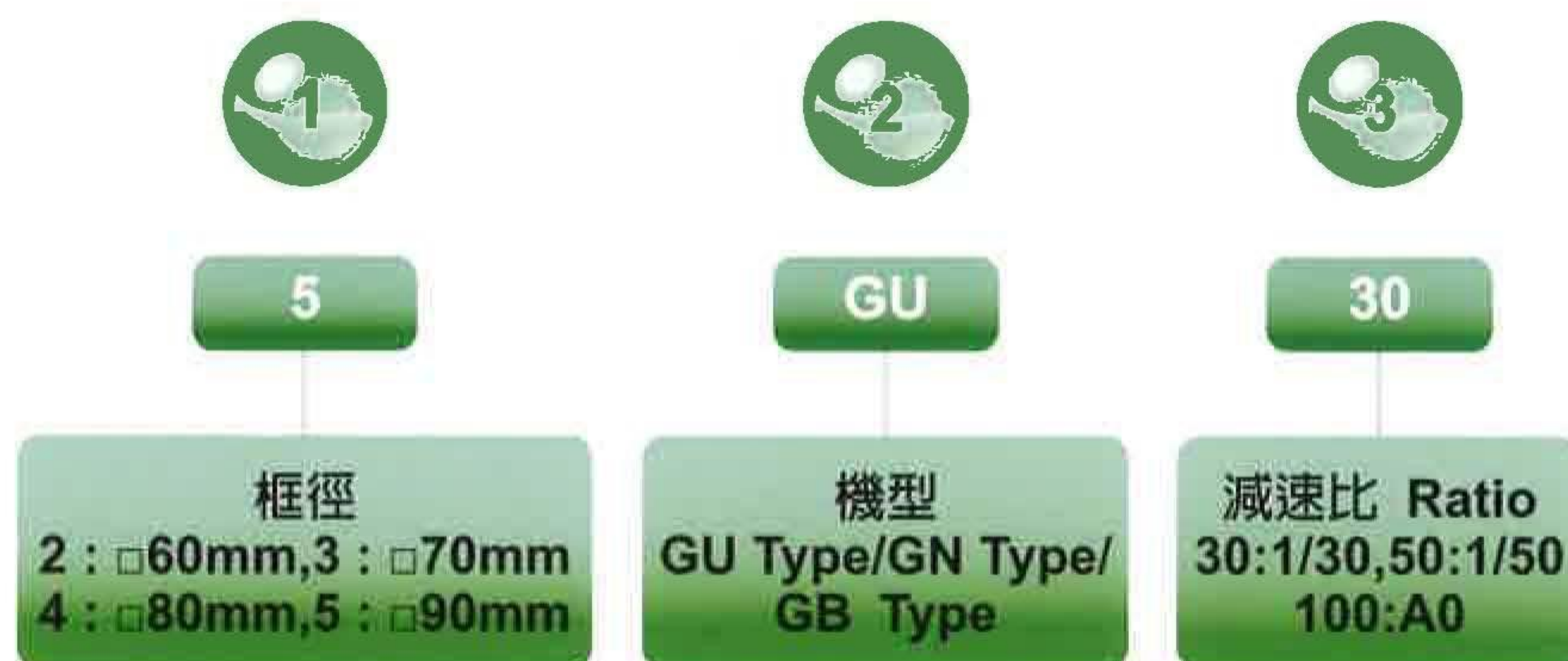
1. 選購時需提供入力電壓、加載(空載)轉速等資訊，若已得知需求扭矩，可依馬達規格表選定機種；若有其他需求如轉速變更、軸心尺寸變更或輸入電壓變更，皆可與銷售人員溝通。
Please provide input voltage, motor speed (on load or no load), you may also follow the spec to choose the model if knew the rated torque. Please contact the salesman if customer have other request such as motor shaft, speed or input voltage.
2. 若馬達與驅動器的裝設距離較遠。可選購專用中繼線。
We can provide the cable connector if longer distance between motor and driver.
3. 若需加裝電磁煞車，我司可提供合適的煞車規格供選購。
We can provide suitable EMB for motors.
4. 無刷馬達搭配的DC驅動器及AC驅動器功率需大於馬達額定功率。於各驅動器頁面有適合機型表可參考；若有快速正逆轉動作需求，需選用可加裝回生電阻的驅動器機種。
The rated power of driver must higher than motor. If customer have the fast cw/ccw rotation request, must choose the driver with regeneration resistor.
5. 減速機使用負載轉矩不可超過表列容許轉矩，會有減速機損壞之疑慮。
The torque of gear box can not over the permissible torque, or the gearbox may be broken.
6. 本型錄所標示的馬達功率皆為輸出功率。
The motor power list on catalog means rated power.
7. 若需各型馬達的特性曲線，可向銷售人員索取。本司出廠馬達皆為全檢測試。
You can contact salesman to gain the T-N curve, MTM's motor are 100% test.

PRODUCT CODE 品名說明

MOTOR 馬達品名說明



Gear Box 減速機品名說明



DRIVER 驅動器品名說明



Index 目錄

Product code 品名說明	05
BL42 SERIES Specifications of Motor 馬達之規格	07
BL42 SERIES Outline Dimension drawing 馬達尺寸圖	08
BL60 SERIES Specifications of Motor 馬達之規格	09
BL60 SERIES Outline Dimension drawing 馬達尺寸圖	10
BL60 SERIES GearBox (2GU&2GN) 減速機規格尺寸表	11
BL90 SERIES Specifications of Motor 馬達之規格	13
BL90 SERIES Outline Dimension drawing 馬達尺寸圖	14
BL90 SERIES GearBox (5GB&5GU) 減速機規格尺寸表	15
BL104 SERIES Specifications of Motor 馬達之規格	17
BL104 SERIES Outline Dimension drawing 馬達尺寸圖	18
BL130 SERIES Specifications of Motor 馬達之規格	19
BL130 SERIES Outline Dimension drawing 馬達尺寸圖	20
BL180 SERIES Specifications of Motor 馬達之規格	21
BL180 SERIES Outline Dimension drawing 馬達尺寸圖	22
AC/DC DRIVER DC驅動器 The Function of Driver	
A04-AC Driver AC驅動器	23
B06-AC Driver AC驅動器	26
C01-DC Driver DC驅動器	29
C04-DC Driver DC驅動器	32
V16-DC Driver DC驅動器	35
BLM4806-DC Driver DC驅動器	38
MTM DC BRUSH MOTORS 直流有刷馬達	41
APPLICATIONS 適用設備	42

Brushless

BL42 series Specification of Motor

■ 馬達之規格

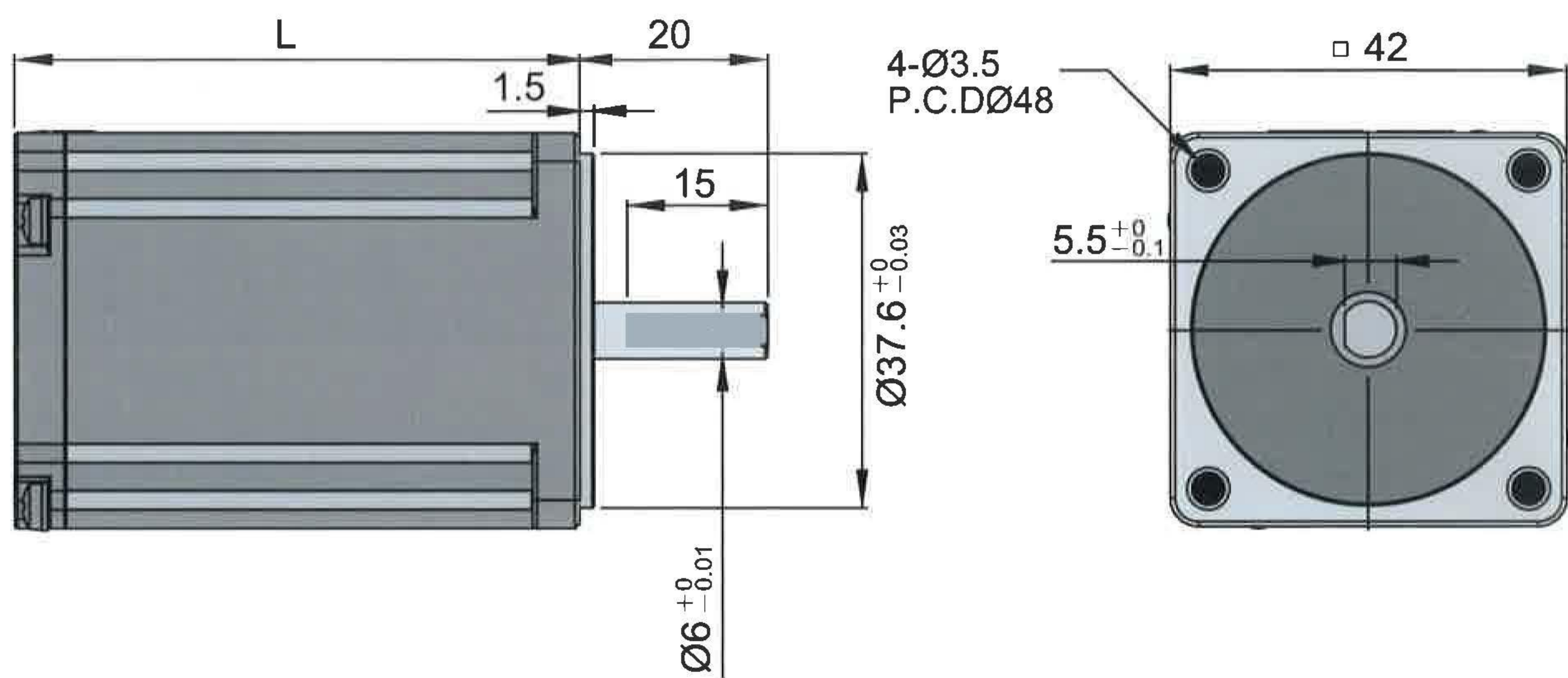
馬達型號 Motor Model		
額定電壓 (Rated Voltage)	24VDC	24VDC
額定功率 (Rated Power)	15W	30W
額定轉矩 (Rated Torque)	0.5 kg-cm	1.0 kg-cm
額定電流 (Rated Current)	1.1A	1.9A
額定轉速 (Rated Speed)	3000rpm	
槽極數配合 (Slot-Pole)	4極6槽 (4P6S)	
防護等級 (Degree of Protection)	IP54	

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL42 series Outline Dimension Drawing

■ 馬達尺寸圖



馬達 (Motor)	
機種 (Model)	長度 (Length)L
BL42S	45mm
BL42M	60mm



Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL60 series Specification of Motor

■ 馬達之規格

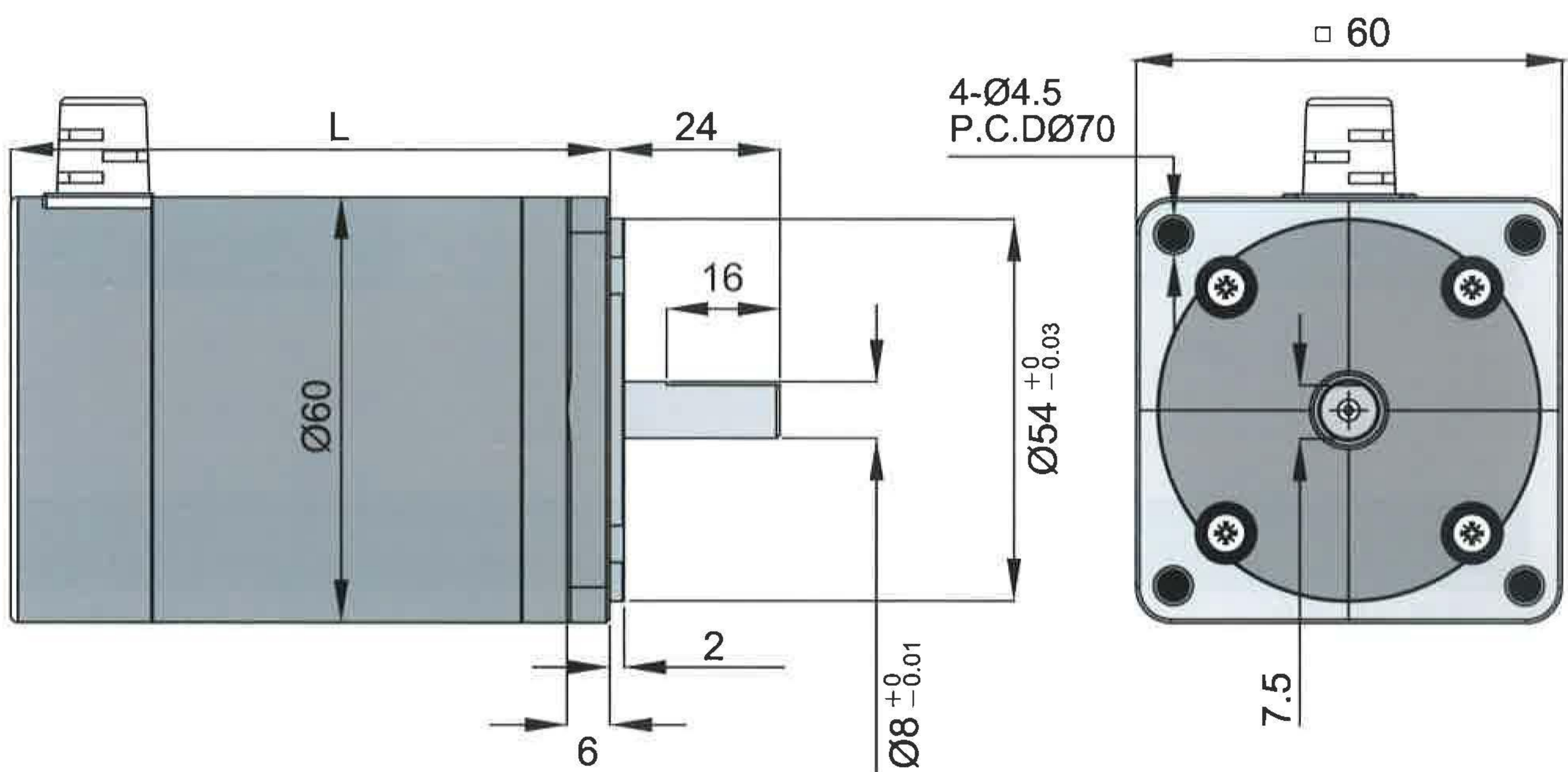
馬達型號 Motor Model	 BL60S	 BL60M	 BL60L	
額定電壓(Rated Voltage)	24VDC	24VDC	24VDC	1Φ110VAC±10% 1Φ220VAC±10%
額定功率(Rated Power)	40W	80W	120W	
額定轉矩(Rated Torque)	1.3 kg-cm	2.6 kg-cm	3.9 kg-cm	
額定電流(Rated Current)	2.1A	4.4A	6.2A	1.2A / 0.6A
額定轉速(Rated Speed)	3000rpm			
槽極數配合(Slot-Pole)	8極12槽 (8P12S) / 10極12槽 (10P12S)			
防護等級(Degree of Protection)	IP54			

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL60 series Outline Dimension Drawing

■ 馬達尺寸圖



馬達 (Motor)	
機種 (Model)	長度 (Length)L
BL60S	59.5mm
BL60M	84.5mm
BL60L	109.5mm



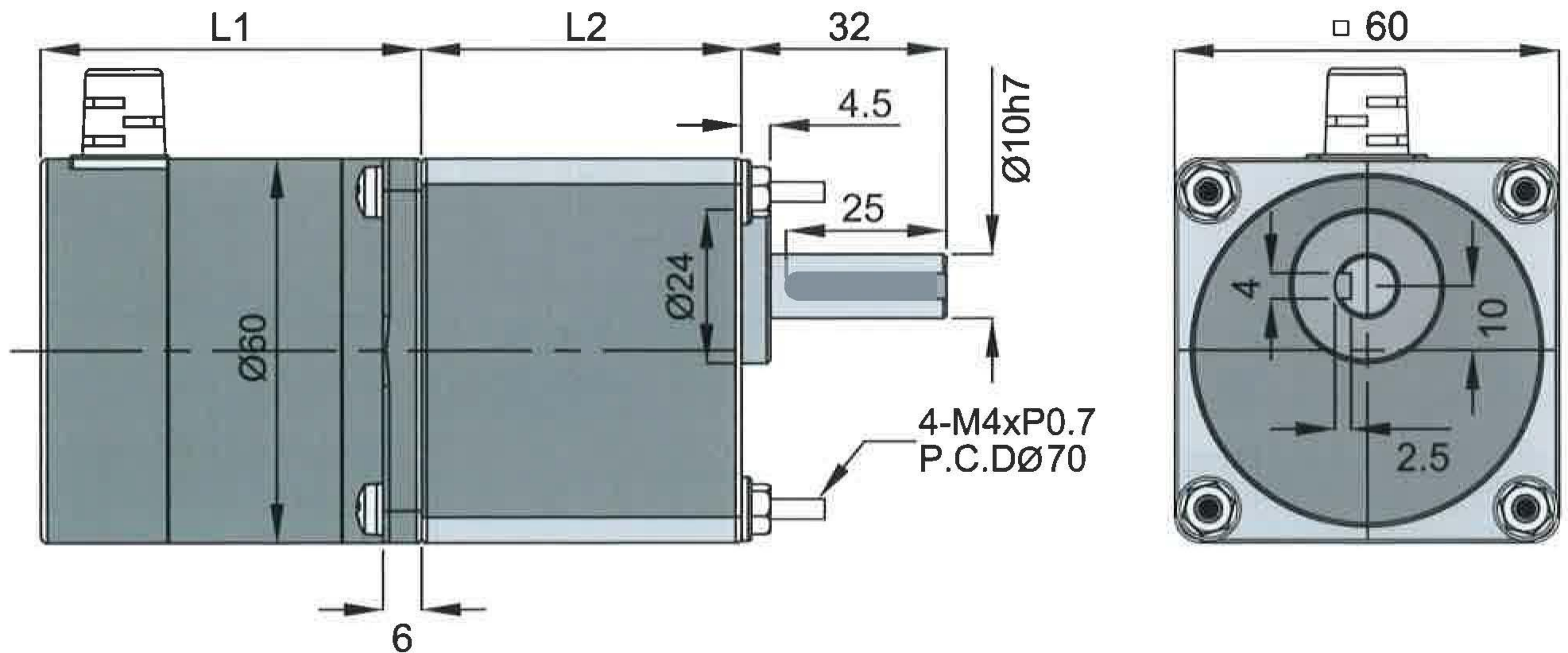
BL60 series Outline Dimension Drawing

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL60 series Gearbox 2GU Type

■ 減速機尺寸圖



馬達 (Motor)

機種 (Model)	長度 (Length)L1
BL60S	59.5mm
BL60M	84.5mm

減速機 (Gearbox) 2GU

減速比 (Gear Ratio)	長度 (Length)L2
5K、10K	36mm
20K、30K	42mm
50K、75K、100K	50mm

Specification of Gearbox

■ 減速機規格表

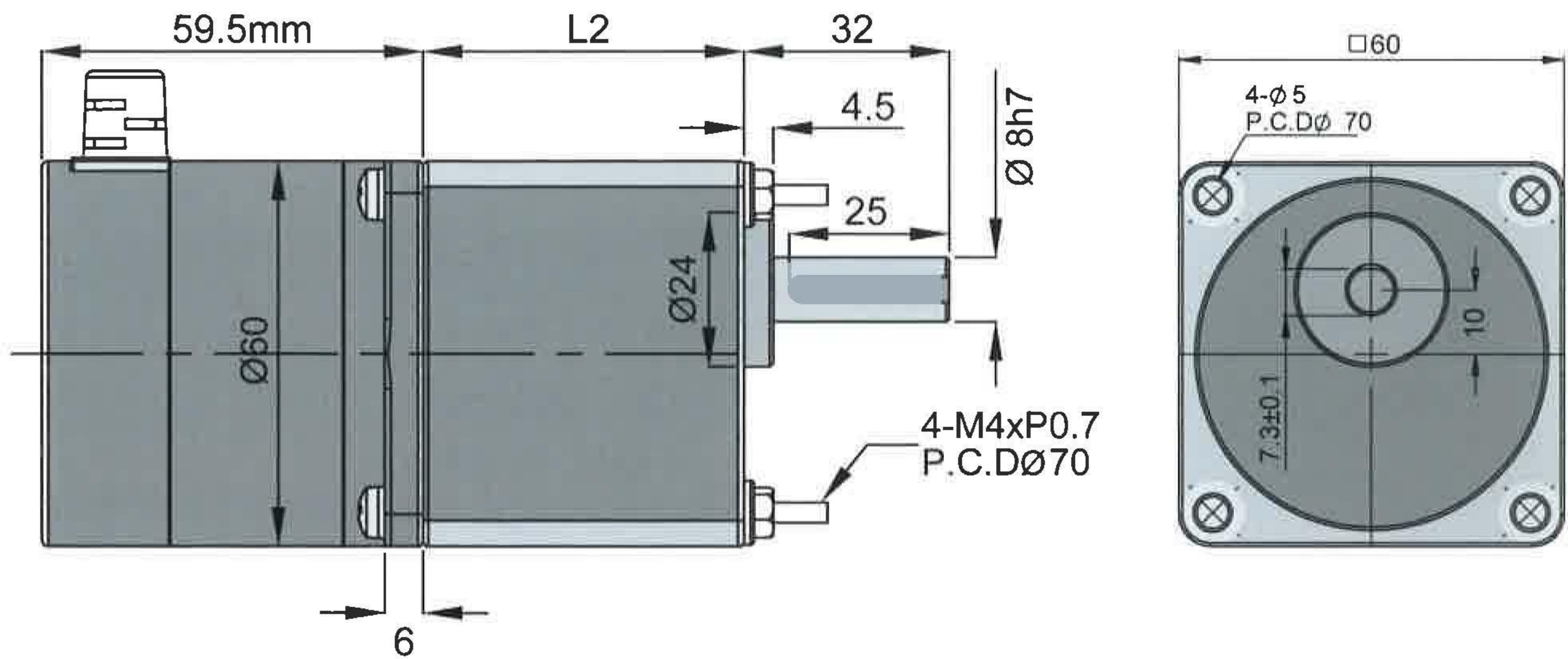
BL60系列專用齒輪箱 2GU							
減速比 (Gear Ratio)	1:5	1:10	1:20	1:30	1:50	1:75	1:100
容許轉矩N-m (kg-cm)(Permissible Torque)	3 (30)		4.5 (45)		6 (60)		
容許推力載重N (kg)(Permissible Thrust Load)	50 (5)						
容許懸吊載重N (kg)(Permissible Overhung Load)	100 (10)						

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL60 series Gearbox 2GN Type

■ 減速機尺寸圖



BL60 series Gearbox 2GN Type

馬達 (Motor)	
機種 (Model)	長度 (Length)L1
BL60S	59.5mm

減速機 (Gearbox) 2GN	
減速比 (Gear Ratio)	長度 (Length)L2
1 / 3 ~ 1 / 18	32mm
1 / 20 ~ 1 / 180	42mm

Specification of Gearbox

■ 減速機規格表

BL60系列專用齒輪箱 2GN							
減速比 (Gear Ratio)	1:5	1:10	1:15	1:20	1:25	1:30	1:40
容許轉矩N-m (kg-cm)(Permissible Torque)	0.17(1.7)	0.37(3.7)	0.5(5)	0.67(6.7)	0.75(7.5)	0.9(9)	1.2(12)
減速比 (Gear Ratio)	1:50	1:75	1:90	1:100	1:120	1:150	1:180
容許轉矩N-m (kg-cm)(Permissible Torque)	1.4(14)	2.0(20)	2.4(24)	2.7(27)	3.0(30)		



Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL90 series Specification of Motor

■ 馬達之規格

馬達型號 Motor Model	 BL90X	 BL90S	 BL90N
額定電壓(Rated Voltage)	24VDC 1Φ110VAC±10% 1Φ220VAC±10%	24VDC 1Φ110VAC±10% 1Φ220VAC±10%	24VDC 1Φ110VAC±10% 1Φ220VAC±10%
額定功率(Rated Power)	75W	150W	200W
額定轉矩(Rated Torque)	2.4 kg-cm	4.8 kg-cm	6.4 kg-cm
額定電流(Rated Current)	3.3A 0.7A / 0.35A	8.0A 1.4A / 0.7A	10.2A 1.8A / 0.9A
額定轉速(Rated Speed)	3000rpm		
槽極數配合(Slot-Pole)	8極12槽 (8P12S)		
防護等級(Degree of Protection)	IP54		

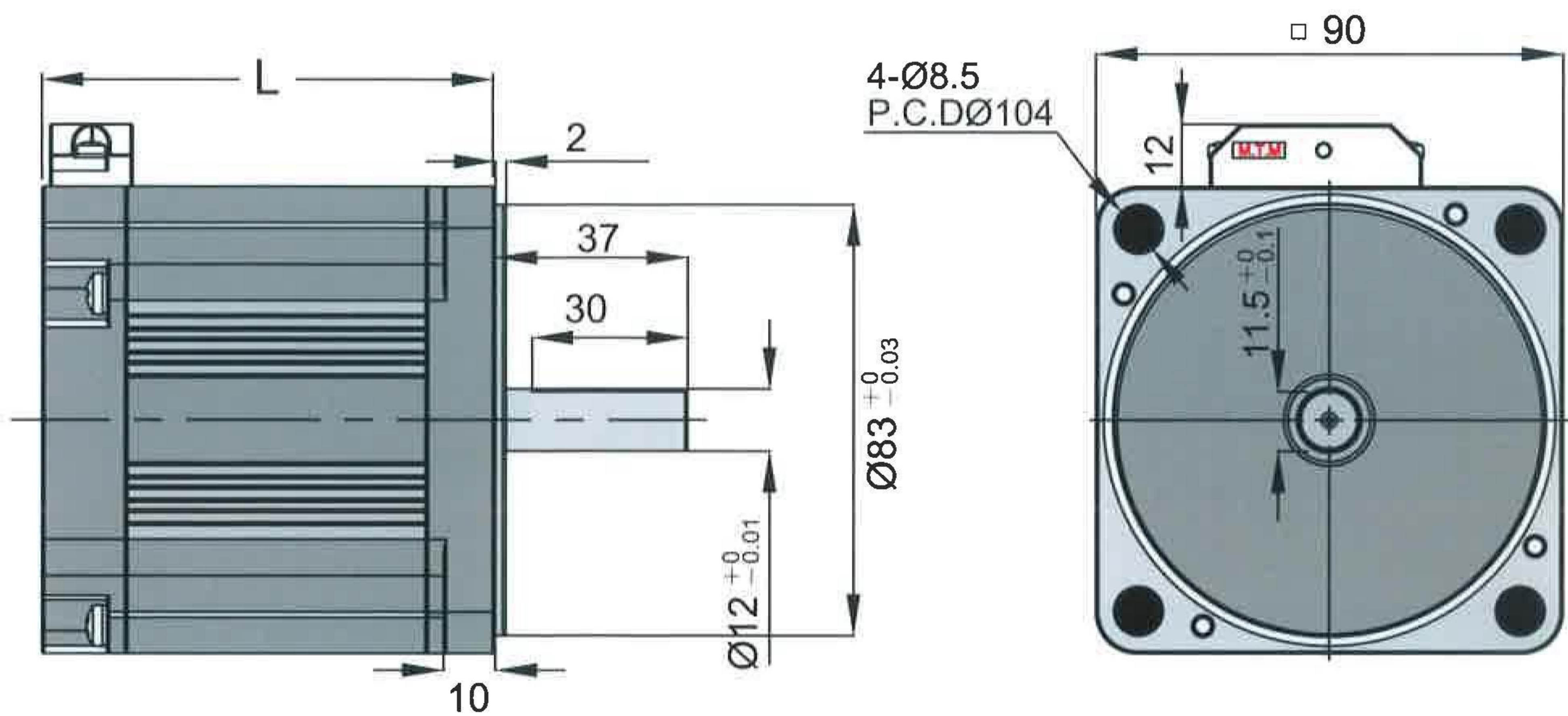
馬達型號 Motor Model	 BL90M	 BL90L
額定電壓(Rated Voltage)	24VDC 1Φ110VAC±10% 1Φ220VAC±10%	48VDC 1Φ110VAC±10% 1Φ220VAC±10%
額定功率(Rated Power)	350W	500W
額定轉矩(Rated Torque)	11.2 kg-cm	16 kg-cm
額定電流(Rated Current)	16A 2.9A / 1.45A	12.8A 4.4A / 2.2A
額定轉速(Rated Speed)	3000rpm	
槽極數配合(Slot-Pole)	8極12槽 (8P12S)	
防護等級(Degree of Protection)	IP54	

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL90 series Outline Dimension Drawing

■ 馬達尺寸圖



馬達 (Motor)	
機種 (Model)	長度 (Length)L
BL90X	52.5mm
BL90S	62.5mm
BL90N	72.5mm
BL90M	87.5mm
BL90L	112.5mm

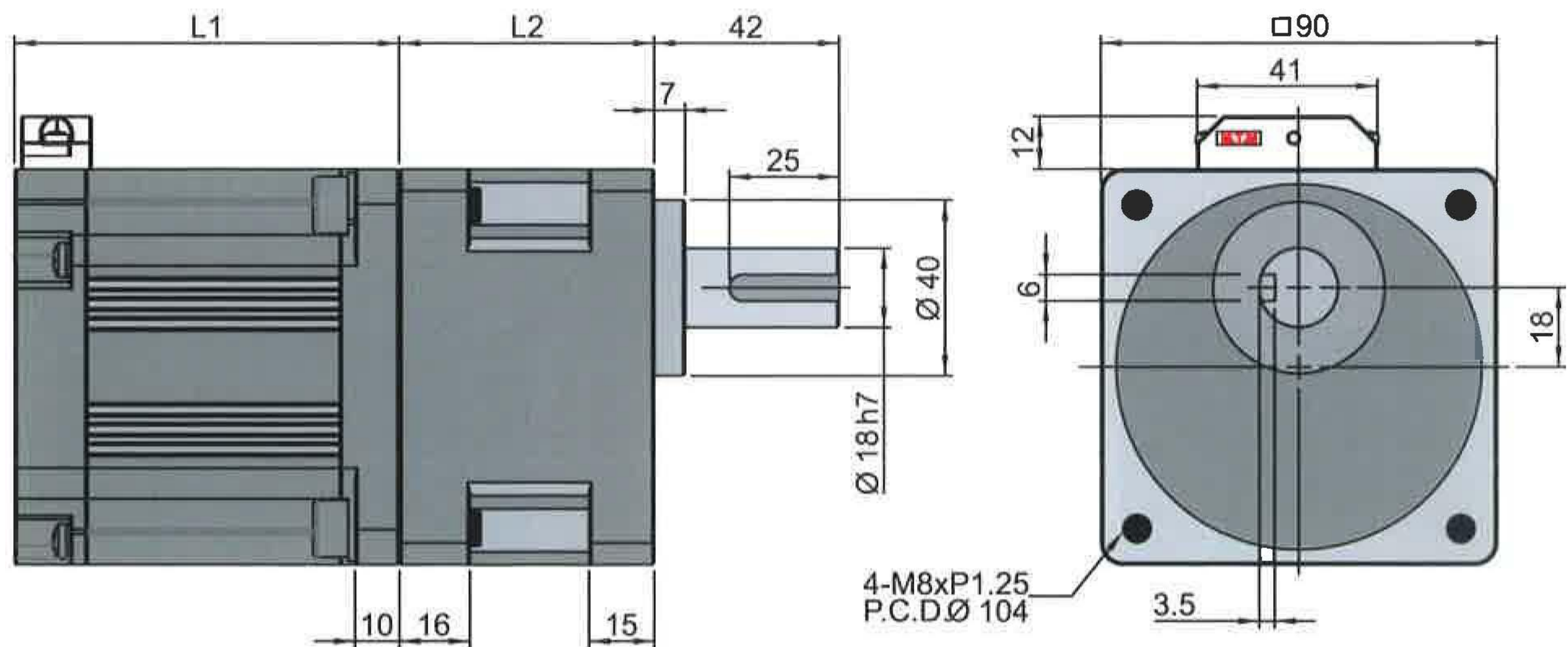


Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL90 series Gearbox 5GB Type

減速機尺寸圖



馬達 (Motor)

機種 (Model)	長度 (Length)L1
BL90X	52.5mm
BL90S	62.5mm
BL90N	72.5mm
BL90M	87.5mm

減速機 (Gearbox) 5GB

減速比 (Gear Ratio)	長度 (Length)L2
5:1 / 10:1 / 15:1	58mm
20:1 / 30:1 / 50:1 / 100:1	90mm

Specification of Gearbox

減速機規格表

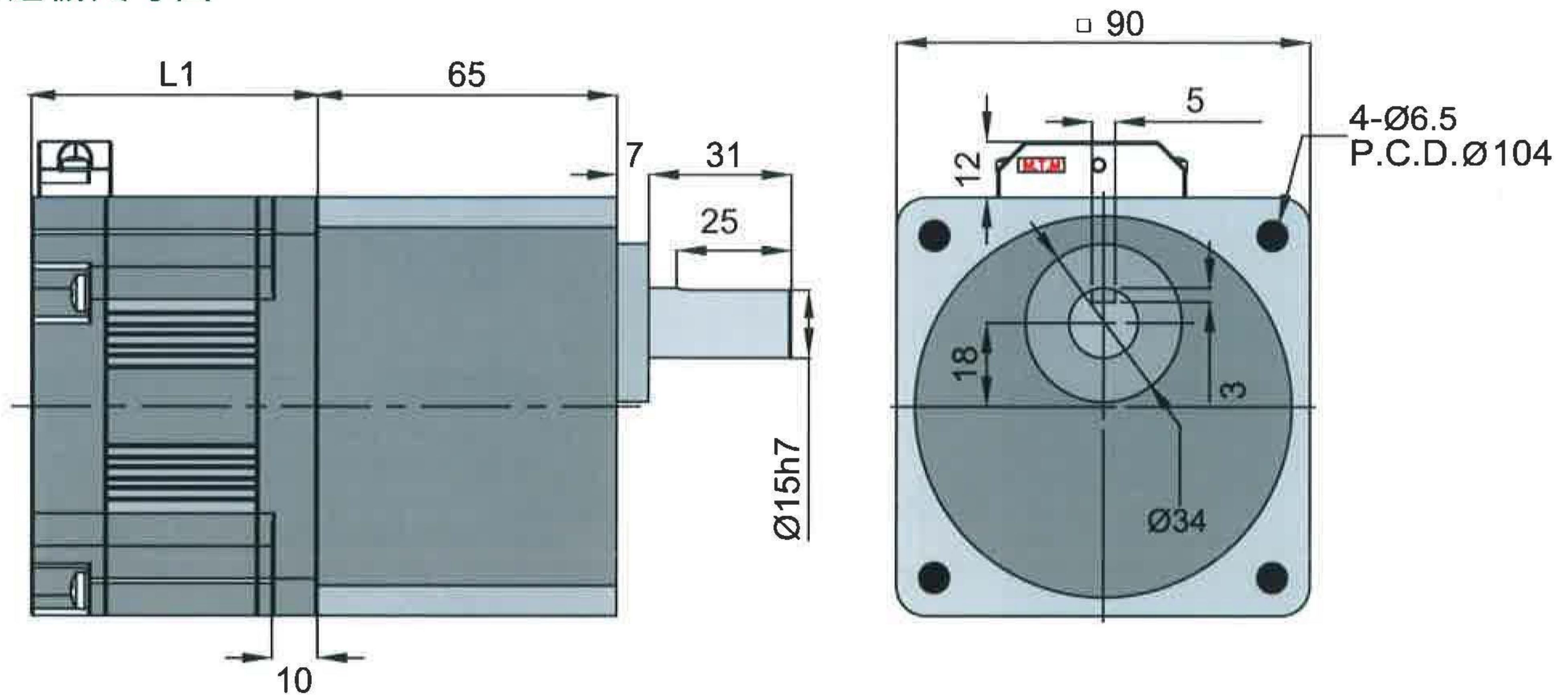
BL90系列專用齒輪箱 5GB							
減速比 (Gear Ratio)	1:5	1:10	1:15	1:20	1:30	1:50	1:100
容許轉矩N-m (kg-cm)(Permissible Torque)	15(150)		20(200)			35(350)	
容許推力載重N (kg)(Permissible Thrust Load)	100 (10)						
容許懸吊載重N (kg)(Permissible Overhung Load)	300 (30)						

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL90 series Gearbox 5GU Type

減速機尺寸圖



BL90 series Gearbox 5GU Type

馬達 (Motor)	
機種 (Model)	長度 (Length)L1
BL90X	52.5mm
BL90S	62.5mm
BL90N	72.5mm

減速機 (Gearbox) 5GU	
減速比 (Gear Ratio)	長度 (Length)L2
1 : 3 ~ 1 : 180	65mm

Specification of Gearbox

減速機規格表

BL90系列專用齒輪箱 5GU							
減速比 (Gear Ratio)	1:5	1:10	1:15	1:20	1:25	1:30	1:40
容許轉矩N-m (kg-cm)(Permissible Torque)	3.5(35)	7(73)	10(97)	13(130)	15(150)	18(180)	20(200)
減速比 (Gear Ratio)	1:50	1:75	1:90	1:100	1:120	1:150	1:180
容許轉矩N-m (kg-cm)(Permissible Torque)	20 (200)						

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL104 series Specification of Motor

■ 馬達之規格

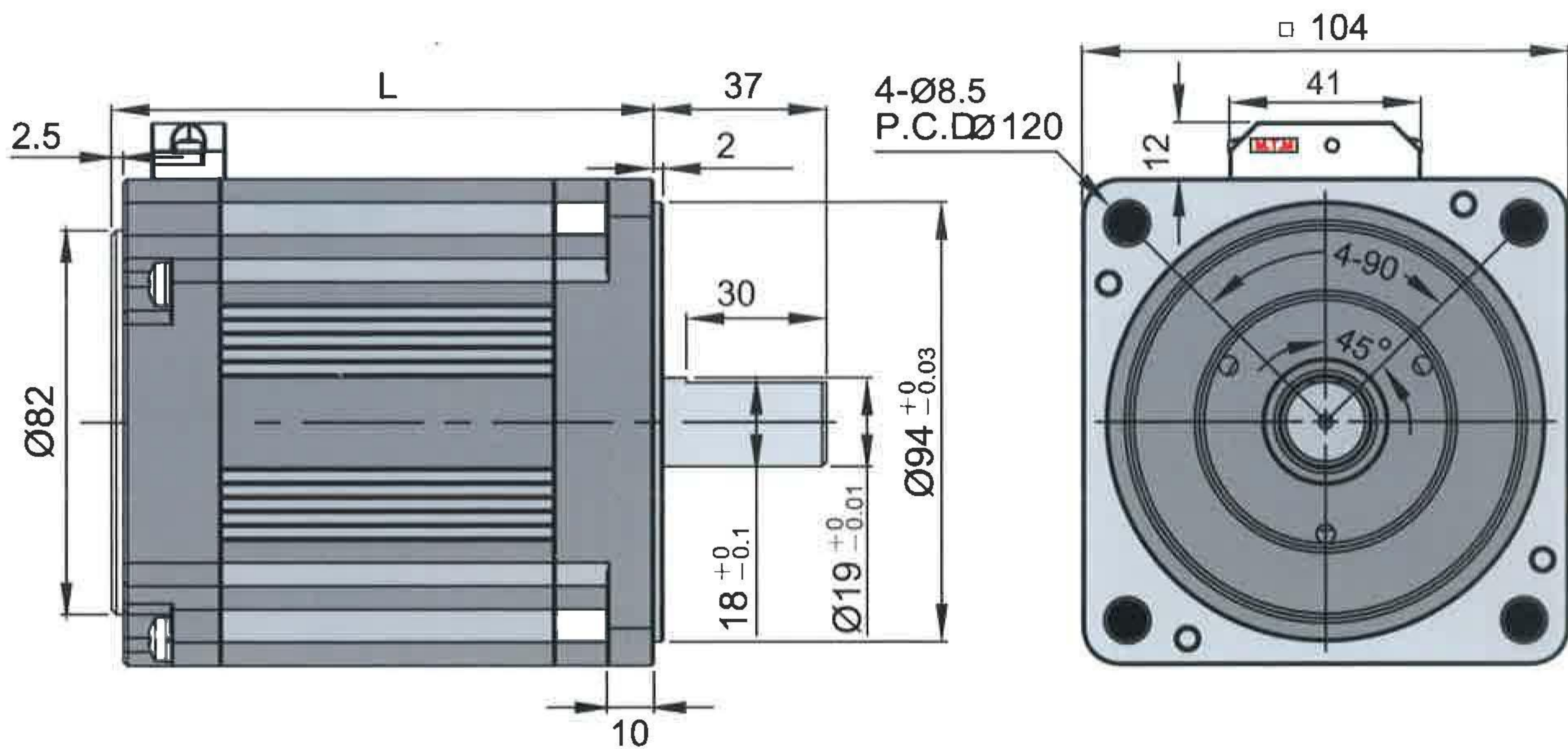
馬達型號 Motor Model	 BLA4S		 BLA4M		 BLA4L	
額定電壓(Rated Voltage)	48VDC	1 Φ 110VAC \pm 10% 1 Φ 220VAC \pm 10%	48VDC	1 Φ 110VAC \pm 10% 1 Φ 220VAC \pm 10%	48VDC	1 Φ 110VAC \pm 10% 1 Φ 220VAC \pm 10%
額定功率(Rated Power)	400W		750W		1000W	
額定轉矩(Rated Torque)	12.7 kg-cm		23.8 kg-cm		31.8 kg-cm	
額定電流(Rated Current)	9.9A	3.0A / 1.5A	18.5A	6.0A / 3.0A	24.7A	8.3A / 4.15A
額定轉速(Rated Speed)	3000rpm					
槽極數配合(Slot-Pole)	8極12槽 (8P12S)					
防護等級(Degree of Protection)	IP54					

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL104 series Outline Dimension Drawing

馬達尺寸圖



馬達 (Motor)	
機種 (Model)	長度 (Length)L
BLA4S	86mm
BLA4M	116mm
BLA4L	146mm



BL104 series Outline Dimension Drawing

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

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BL130 series Specification of Motor

■ 馬達之規格

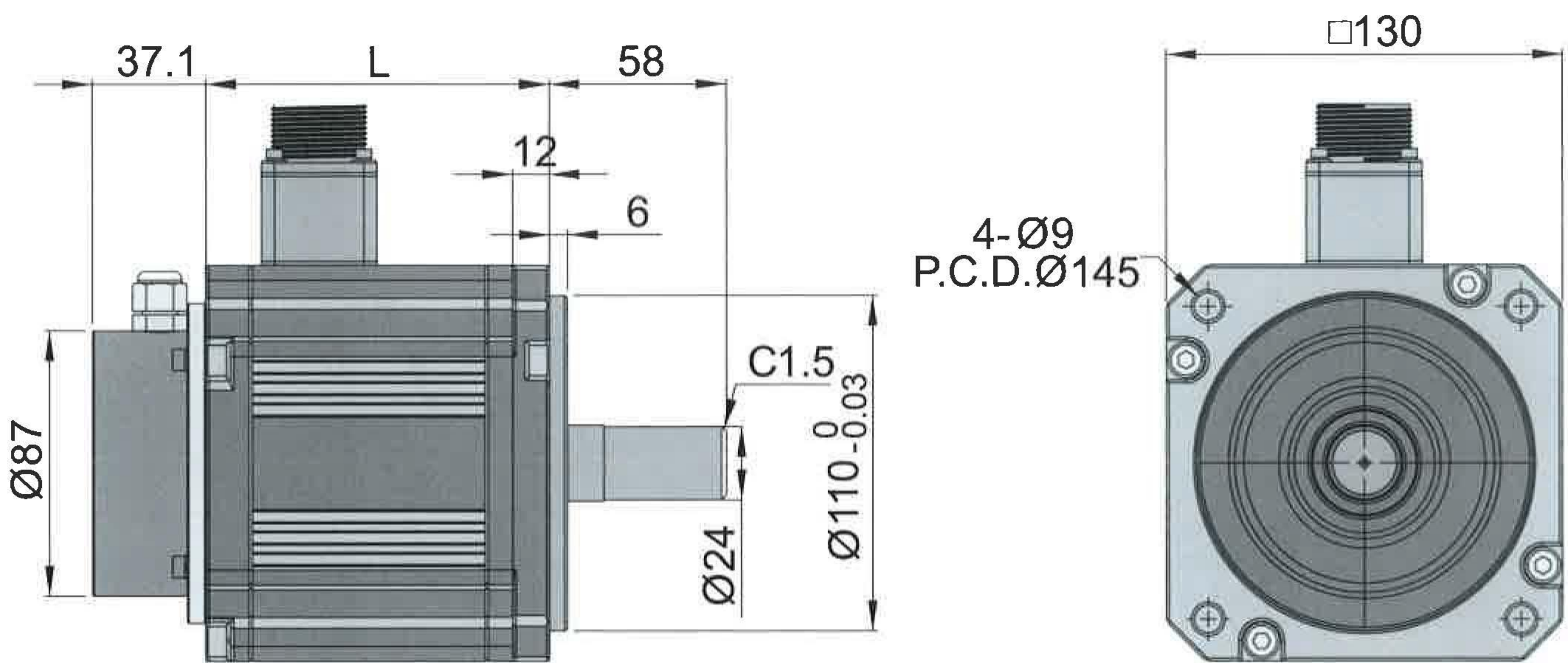
馬達型號 Motor Model				
	BLD0M		BLD0L	
額定電壓 (Rated Voltage)	48VDC	1Φ110VAC±10%	48VDC	1Φ110VAC±10%
		1Φ220VAC±10%		1Φ220VAC±10%
額定功率 (Rated Power)	1000W		2000W	
額定轉矩 (Rated Torque)	32 kg-cm		64 kg-cm	
額定電流 (Rated Current)	21.8A	6.7A / 3.35A	43.6A	13.4A / 6.7A
額定轉速 (Rated Speed)	3000rpm			
槽極數配合 (Slot-Pole)	8極12槽 (8P12S)			
防護等級 (Degree of Protection)	IP54			

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL130 series Outline Dimension Drawing

■ 馬達尺寸圖



BL130 series Outline Dimension Drawing

馬達 (Motor)	
機種 (Model)	長度 (Length)L
BLD0M	112.7mm
BLD0L	155.2mm




Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL180 series Specification of Motor

■ 馬達之規格

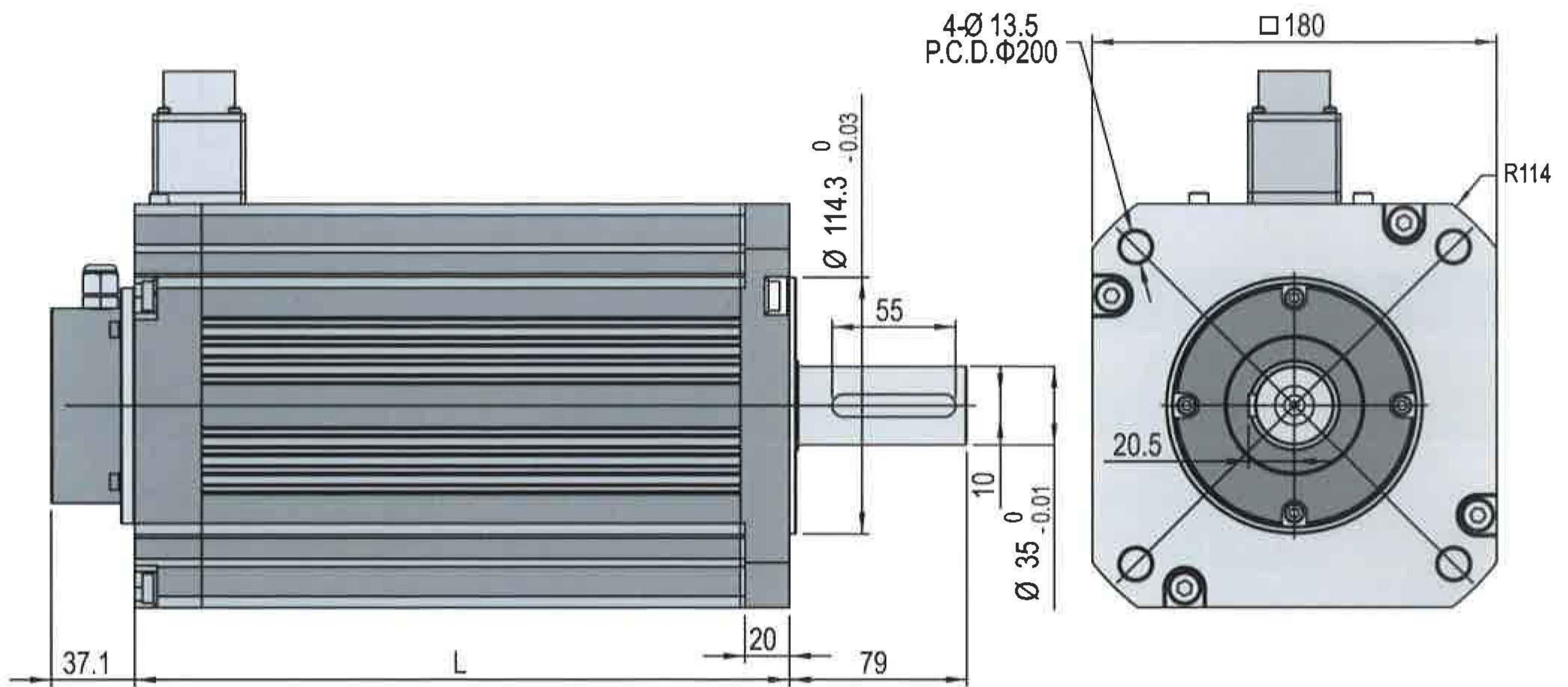
馬達型號 Motor Model						
	BLJ0S		BLJ0M		BLJ0L	
額定電壓(Rated Voltage)	48VDC	1Φ110VAC±10% 1Φ220VAC±10%	48VDC	1Φ110VAC±10% 1Φ220VAC±10%	48VDC	1Φ110VAC±10% 1Φ220VAC±10%
額定功率(Rated Power)	2000W		3500W		5000W	
額定轉矩(Rated Torque)	96 kg-cm		167 kg-cm		239 kg-cm	
額定電流(Rated Current)	56A	17.2A / 8.6A	97A	30A / 15A	139A	43A / 21.5A
額定轉速(Rated Speed)	2000rpm					
槽極數配合(Slot-Pole)	8極12槽 (8P12S)					
防護等級(Degree of Protection)	IP54					

Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

Brushless

BL180 series Outline Dimension Drawing

■ 馬達尺寸圖



BL180 series Outline Dimension Drawing

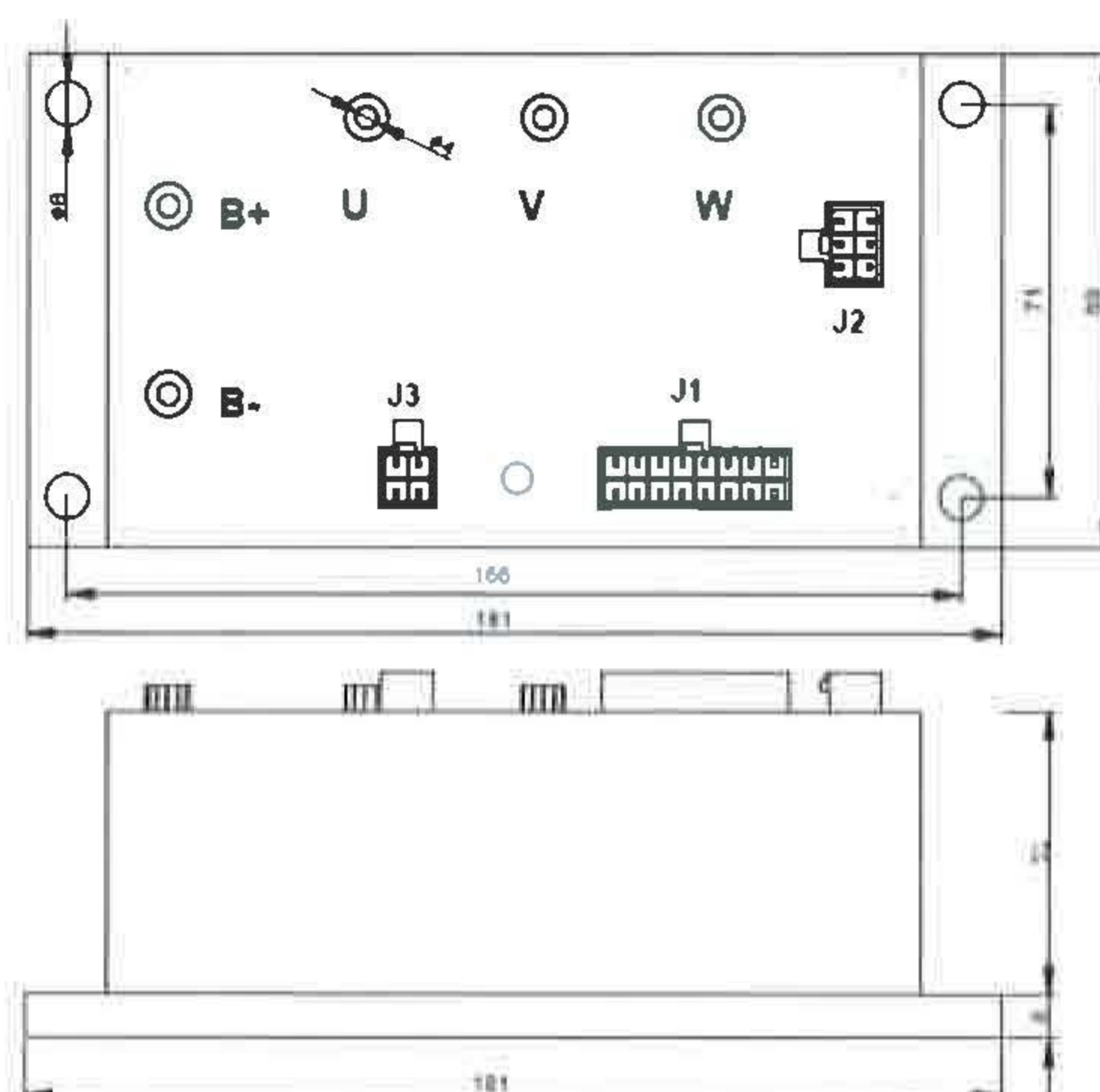
馬達 (Motor)	
機種 (Model)	長度 (Length)L
BL180S	172mm
BL180M	232mm
BL180L	292mm



Please contact the salesman if customer have other motor request such as motor shaft, speed or voltage.
特殊規格及其他需求請洽詢業務人員。

BLM4806 Series 48VDC Driver

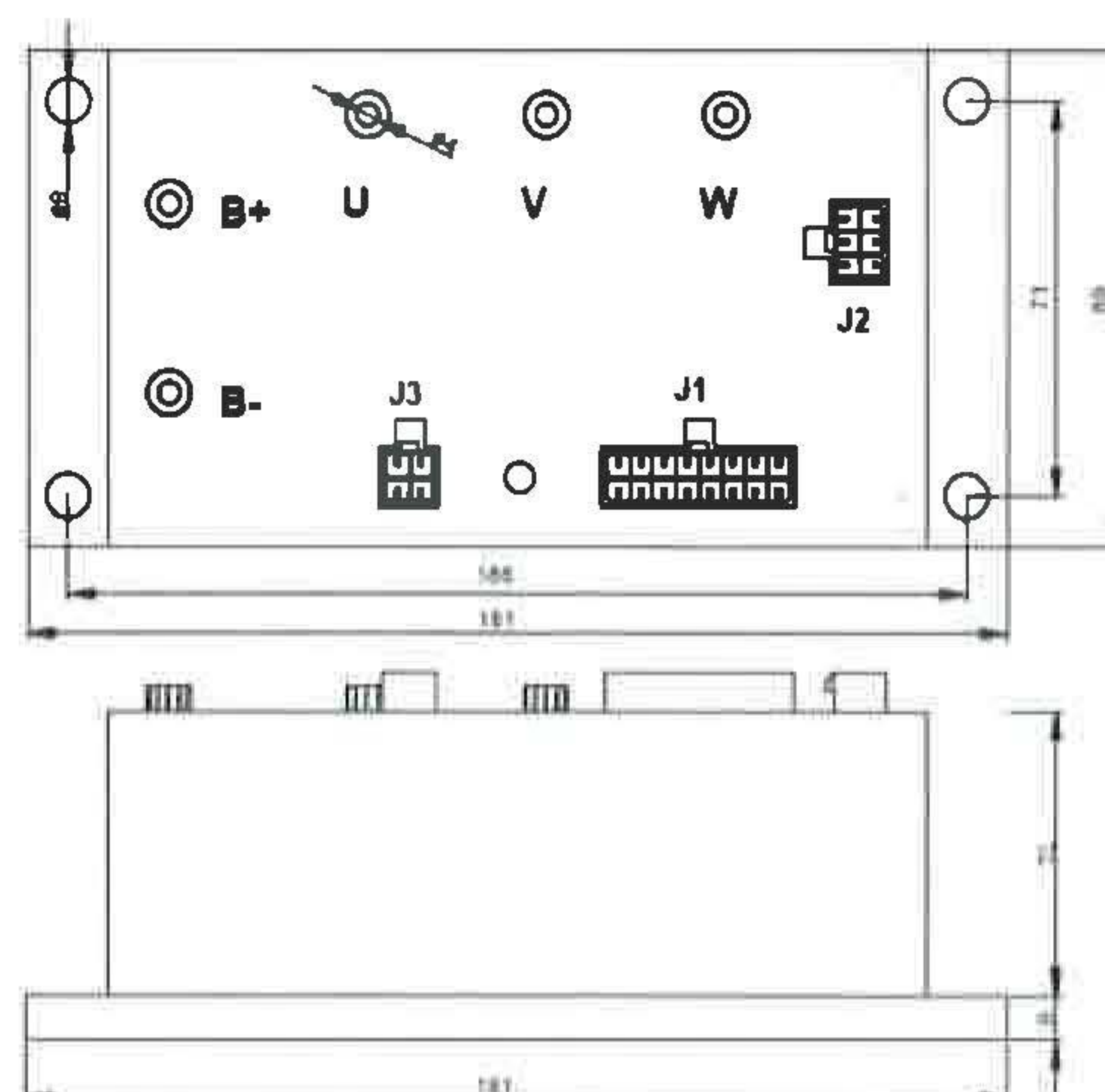
DC驅動器功能



編號	功能名稱	功能
1	馬達連接端子	連接馬達動力線 UVW
2	Hall sensor/OT端子	馬達Hall sensor端子及溫度開關端子
3	DC入力電源端子	48VDC 電源接點 (24VDC/36VDC為選購品)
4	輸入/輸出訊號	4. 主電磁閥驅動 5.+5V電源 6.電子油門訊號輸入 7.油門地線 8.電阻式油門輸入 11.馬達正轉訊號輸入 12.馬達反轉訊號輸入 13.EMR輸入 14.馬達溫度開關輸入 15.Interlock輸入 16.控制器電源輸入
5	通訊接頭	書寫器(非賣品)輸入參數用
速外觀尺寸		181mm*89mm*59mm (含散熱底板)
連續輸入功率		1KW (48VDC) 750W(36VDC) 500W(24VDC)
速度變動率		±1%額定轉速(0~額定轉矩)
操作環境		溫度 -20°C~50°C[-4°F~122°F]
環境濕度		<85%RH(不結露)
速度控制方式		◆ 外部可變電阻調速 ◆ 外部電壓調速
保護功能		◆ 過電壓/低電壓輸出關閉保護 ◆ 過負載保護 ◆ 欠相保護 ◆ 馬達過熱保護 ◆ 驅動器過熱保護(出廠預設溫度為70°C)
其他功能 (需加購書寫器)		◆ 控制面板通訊介面◆ 輸入參數設定(加減速時間/轉速上限) ◆ 馬達轉速監控
保護等級		IP00

※ 可向原採購經銷商索取使用說明書。

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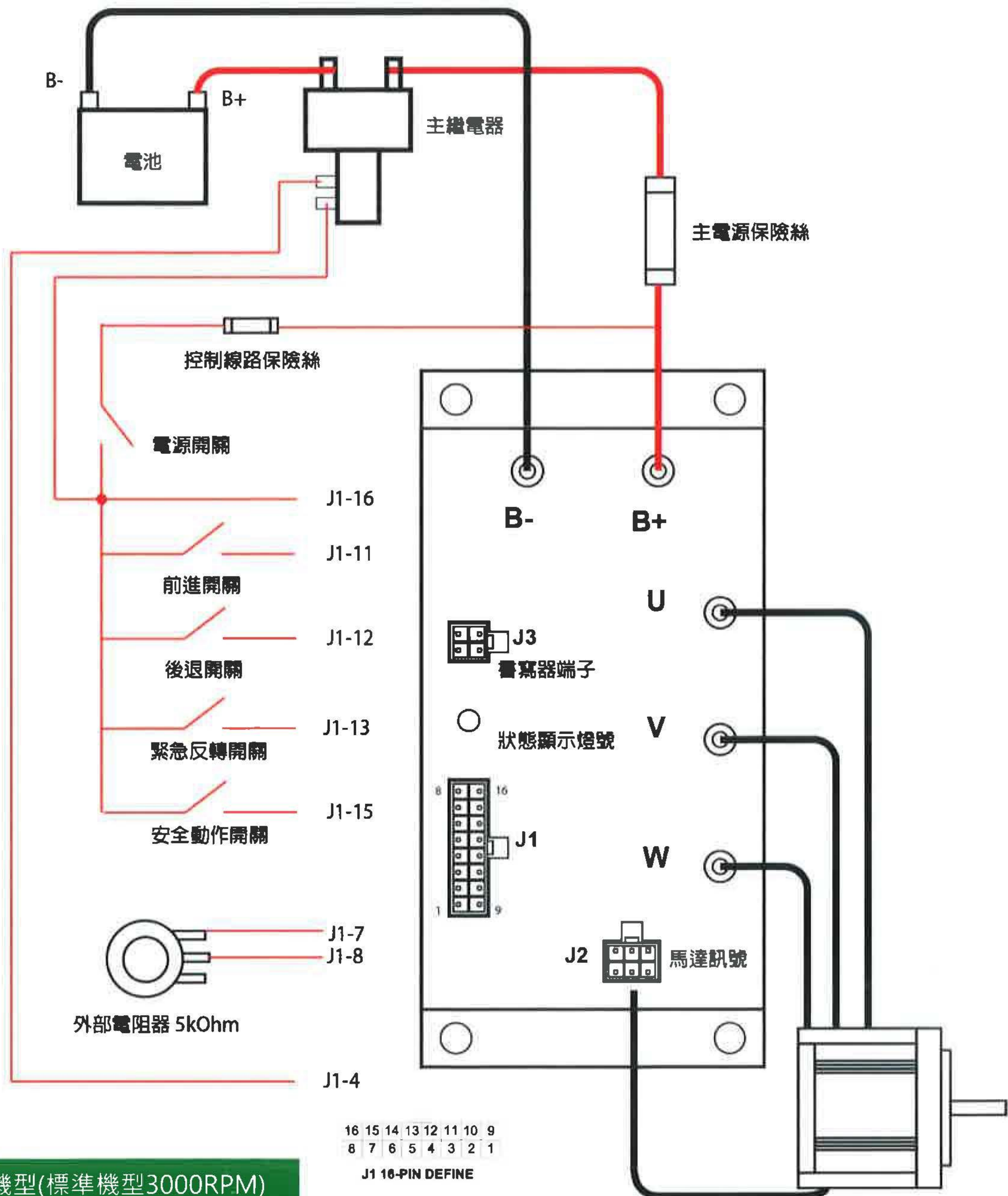


No.	Display	Function
1	Power LEMotor Connector	Motor connector (UVW)
2	Hall sensor& OT	Hall sensor of Motor and Motor over temperature sensor
3	AC220V POWER INPUT	Power Input (48VDC) (24VDC/36VDC Optional)
4	Input control	4. Main Relay Output 5.+5V output 6.Electric throttle input 7.Ground 8.VR wiper input 11.Forward input 12.Reverse input 13.EMR input 14.Motor temperature sensor input 15.Interlock input 16.Controller logic power
5	Communication port	Require Control Key Pad to change input control functions (not-for-sale item)
Dimensions		181mm*89mm*59mm
Rated Output Power of Motor		1KW (48VDC) 750W(36VDC) 500W(24VDC)
Speed Regulation		±1% (Rated speed)
Operation Temp.		-20°C~50°C[-4°F~122°F]
Humidity of Environment		<85%RH(non-condensing)
Speed Setting		◆ External VR ◆ External DC Voltage
Protection		◆ Low Voltage Protection ◆ Over Load Protection ◆ Over Temperature Protection ◆ Out of Phase Protection ◆ Missing Phase Protection
Other Function / with Panel(Accessory)		◆ Require Optional Control Key Pad to change input control functions ◆ Motor Speed Monitor
Degree of Protection		IP50

※ User manual or customize specification, please contact distributor.

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DC驅動器接線圖



入力電壓 POWER INPUT	適合機型(標準機型3000RPM) Applicable models(3000RPM)
24VDC	BL90S, BL90N, BL90M, BL90L, BL104S
48VDC	BL90M, BL90L, BL104S, BL104M, BL104L

APPLICATIONS

適用設備

食品機械、印刷機、CNC加工機、風機、送料機、幫浦、電動手工具、包裝機、鑽孔攻牙機、研磨機、裁切機、紡織機、材料試驗機、塗佈機、攪拌機、輸送帶、電動自行車、樓梯升降機、無人搬運車、沙灘車、堆高機、掃地機、離心機、農耕機、割草機、抽油煙機、及其他各型家電產品..等

food machine、printing machine、CNC machine、blower、feeder、pump、electric tool、packing machine、drill tapping machine、grinding machine、cutting machine、textile machine、testing machine、Spin Coater、mixer、conveyor、e-bike、stair climber machine、AGV、ATV、forklift、sweeper、centrifuge、farming machine、brush cutter(mower)、ventilator...etc.

