

Sesame Motor Corp., A leading brand in gear technology.

# MOTOR AND SPEED REDUCER

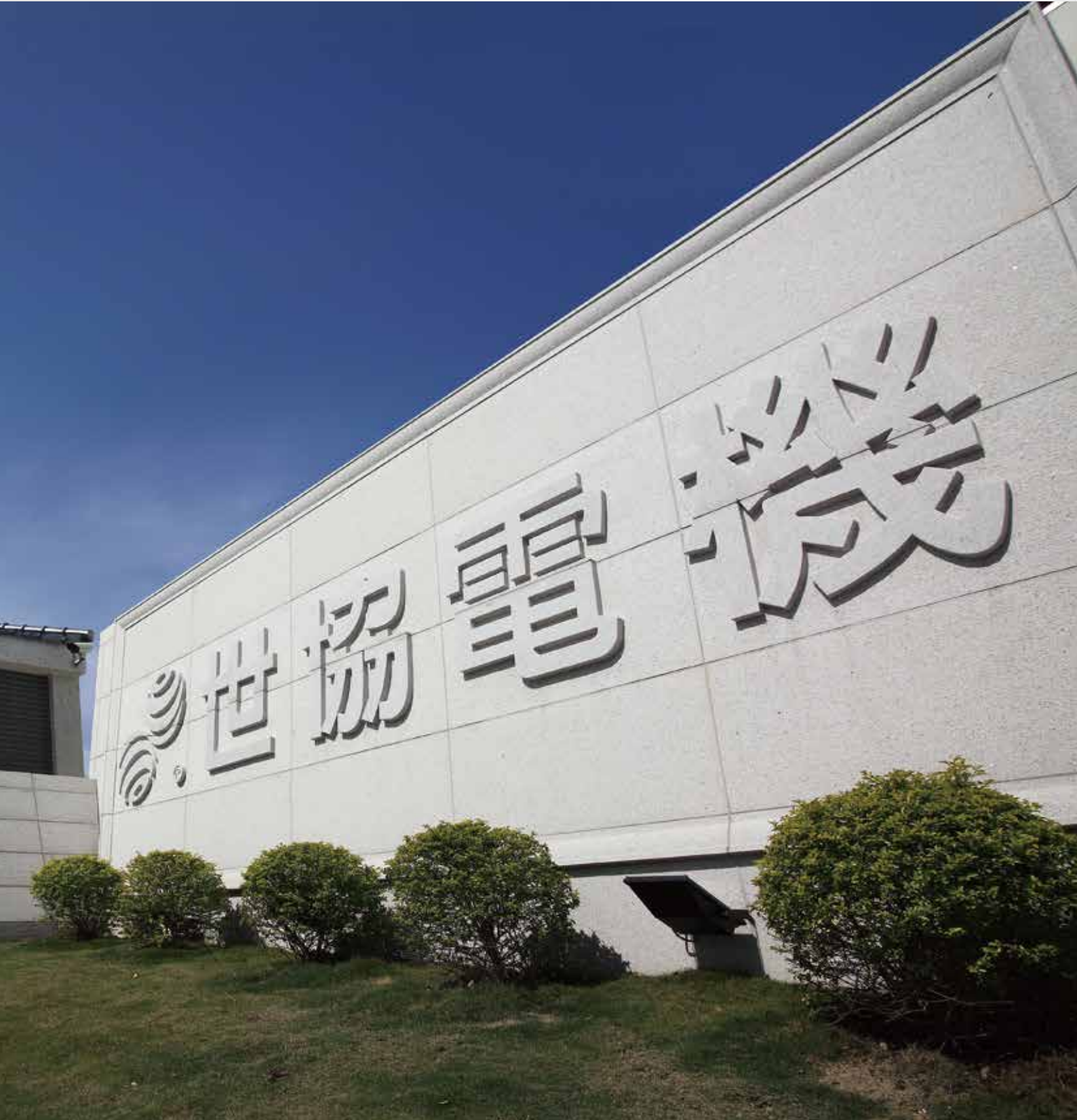
馬達 · 減速機



**100%**

Made in Taiwan

[www.sesamemotor.com](http://www.sesamemotor.com)





## Company Profile 公司簡介

Sesame Motor Corp., as a leading brand in Motor and gear reducer technology. "SESAME MOTOR CORP." Founded in 1990, have more than 25 years of professional motor and gearbox manufacturing and sales experience. SESAME MOTOR's 7000 square meters factory locates at Sheng Kang. Adding modern workshop facilities with the effective integration of ERP systems, purchase new processing and testing equipment; as we continuously enhance key parts' productivity we had not only expanding overall productivity, shorten delivery, and ensure products' quality to achieve customer satisfaction. SESAME MOTOR products have received unanimous praise.

### 科技與口碑結合的領先品牌 減速機與馬達專業製造廠

『世協電機股份有限公司』成立於1990年，有超過25年專業馬達及減速機製造銷售經驗，廠房位於台中市神岡區，佔地約7000m<sup>2</sup>；現代化廠房設施加上ERP系統的有效整合，以及購買全新加工及檢測設備，不斷提升關鍵零件自製能力，不僅擴大產能，增快交貨速度、品質更能達到顧客滿意，讓世協電機產品受到使用者一致的好評。



### Quality Policy :

"Honesty" , to provide integrity and pragmatic services  
"Creativity" , to create customer competitive advantage  
"Positivity" , positive support and responsibility  
"Innovation" , moving forward of technical innovation

### Environmental Policy :

Full participation to comply with eco-regulation  
Prevent pollution; save energy and reduce waste  
Keep improving and propagating Green Concept

### 品質政策 :

"誠" 信務實  
"創" 造客戶優勢競爭力  
"積" 極負責的工作效率  
"精" 益求精的專業技術

### 環境政策 :

全員參與 · 遵守環保法規  
預防污染 · 節能降耗減廢  
持續改進 · 傳播綠色精神



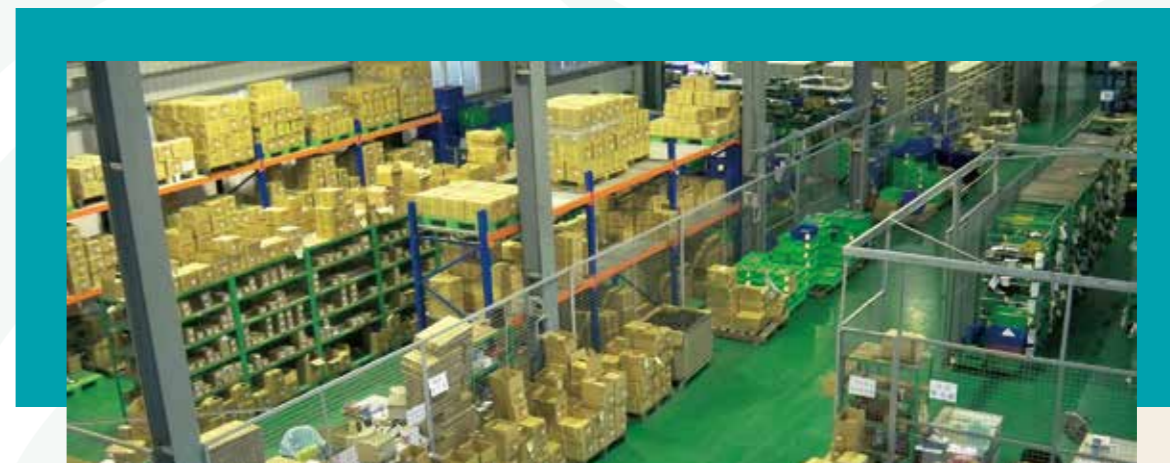
## Company Profile 公司簡介

"SESAME MOTOR" is built base on spirit of "customer satisfaction, priority service" philosophy, providing three privileges "best quality, fastest delivery, and best sale service". Our products have obtained high market share in Taiwan, that had lead "SESAME MOTOR" be a well-known brand. In addition to our official branch in Shanghai, we have agents in the United States, Germany, Denmark, Poland, UK, Turkey, Russia, Korea, Japan, China, Thailand, Malaysia and India.

"SESAME MOTOR" also has a professional R & D team and experienced production-related sectors; can provide high accuracy products for different customer needs; high-quality gear and the surrounding transmission components, develop and produce other kinds of gear; customized motor products, products with detailed-oriented, high precision, low noise, high efficiency, and good quality properties. Product development are aiming three directions "science and technology, environmental protection, and innovation". Product will be used in tool machines, industrial robots, semiconductor devices, aircraft industrial, medical and rehabilitation equipment, electric scooter, electric bike, auto storage devices, green energy-related industries, testing and food machinery, bakery equipment, packaging machinery, agricultural equipment and other sophisticated automation equipment.

『世協電機』本著「顧客滿意、服務至上」的理念，提供「最佳品質、最快交期、最好售服」的三最服務，在台灣為具高市佔率之知名品牌，除了在中國上海設有分公司，另在美國、德國、丹麥、波蘭、英國、土耳其、俄羅斯、韓國、日本、中國、泰國、馬來西亞、印度...等國設有總代理。

『世協電機』同時擁有專業的研發團隊、經驗豐富的生產相關部門；可針對不同客戶需求提供高精度、高品質的減速機及周邊傳動機構，研發、生產各式減速機及馬達等客製化產品，產品具備細緻化、精度高、噪音低、高效率等優良品質特性；產品研發更朝向「科技、環保、創新」三方向，將產品應用於工具機械、產業機器人、半導體設備、航太工業、醫療復健設備、電動代步車、電動自行車、自動倉儲設備、綠能相關產業、檢驗儀器、食品機械、烘焙設備、包裝機械及農業設備等各種精密自動化設備中。







## Company Profile 公司簡介

"SESAME MOTOR" has been successively obtained CE,CCC,UL, ISO9001 and ISO14001 certification and honorary awards. As we continuously, progressively for created finest quality products; with "Honesty" for providing integrity and pragmatic service; with "Creativity" given customer "Positivity" to support & responsible for the efficiency of productivity; with "Innovation" on profession and knowledge of knowhow, by these four philosophy management, we aims to become the first market trend indicators. "SESAME MOTOR" strong operating team adhere to the blue ocean strategy of entering the international market and high-tech field, to create the future more professional, better quality of sustainable management systems, establishment of "a combination of leading technology and brand reputation" for competitive advantage.

『世協電機』已先後取得CE、CCC、UL、ISO9001 及 ISO14001 認證等榮譽，不但持續創造優良品質產品，並本著『誠』：誠信務實、『創』：創造客戶優勢競爭力、『積』：積極負責的工作效率、『精』：精益求精的專業技術四大經營理念，致力成為市場先趨指標；『世協電機』堅強之經營團隊秉持邁向國際化及高科技化之藍海策略，營造未來更專業化、更優質化的永續經營體系，確立『科技與口碑結合的領導品牌』之競爭優勢。



## Trade Mark & Certification

## 認證與商標



CE Certification

UL Certification

ISO 9001:2015

ISO 14001:2015



China Compulsory Certification (CCC)



Planetary Gearhead PHL Series  
China SIPO Patent



Registration Number : 8580921716



Registration Number : 38E08580



SESAME MOTOR CORP.



Cert.No.E209009



美國、加拿大、歐盟、中國、台灣、日本、韓國、伊朗、菲律賓、越南、印尼、馬來西亞、新加坡等地區商標註冊  
The United States, Canada, European Union, China, Taiwan, Japan, Korea, Iran, The Philippines, Vietnam, Indonesia, Malaysia, Singapore ...etc. trade mark certifications.





# Corporate Environment 公司環境





# MOTOR AND SPEED REDUCER





## Production Line 生產線



伺服專用減速機組  
Servo Motor Gearheads Production Line



馬達與減速機組  
Induction Motor and  
Speed Reducer Production Line



齒輪馬達組  
Precision Gear Motor Production Line

## Applications 產品應用

### Applications of Planetary Gearhead

#### Machine Tools

Metal Cutting Machines, Machining Centers, CNC Drilling Machines, Lathes and Turning Machines, Milling and Boring Machines, Grinding Machines, Drilling Machines, Planning Machines, Metal Forming Machine Tools, Presses, Tube and Wire Processing Machines.

#### Industry Machinery

Packaging Machinery, Food and Beverage Processing Machinery, Bakery Equipment, Agricultural Machinery, Textile Machinery, Shoemaking Machinery, Wood Working Machinery, Printing Machinery, Plastic processing Machinery, Laser Cutting and Welding Machines.

#### Automation Equipment

Industrial Robots, Semiconductor Devices, Automatic Storage System, Surface Treatment Equipments.

#### Aerospace Industry

#### Medical and Rehabilitation Equipment

#### Electric Scooter

#### Green Energy-Related Industries

#### Testing Devices

#### Automation and Precise Positioning Equipment with Servo Motors

### 行星式減速機之應用：

#### 工具機業

金屬切削工具機、綜合加工機、鑽孔中心機、車床、銑床、磨床、鑽床、搪床、鉋床、金屬成型工具機、沖床、管材與線材加工設備、鍛造機械。

#### 產業機械

包裝機、食品飲料機械、烘焙設備、農業機械、紡織機械、製鞋機械、木工機械、印刷機械、塑膠機械、雷射切割機、雷射焊接機。

#### 自動化設備

產業機器人、半導體設備、自動倉儲設備、表面處理設備

#### 航太工業

#### 醫療復健設備

#### 電動代步車

#### 綠能相關產業

#### 檢驗儀器

#### 搭配伺服馬達之自動化機械及精密定位設備

### Motor and Reducer

- Machine Tool Accessories · Cutting Equipment · Bar Feeder
- Gilding Machine · Conveyor Equipment · Food Machine
- Screen Printing · Agricultural Machinery · Medical Equipment

### 馬達/減速機之應用：

- 工作母機配件 · 裁剪設備 · 送料設備 · 燙金設備 · 輸送設備
- 食品機械 · 網版印刷設備 · 農用機械 · 醫療設備

### Gear Motor and Reducer

- Machine Tool Accessories · Cutting Equipment · Bar Feeder
- Gilding Machine · Conveyor Equipment · Food Machine
- Screen Printing · Agricultural Machinery · Medical Equipment

### 齒輪馬達 · 立式/臥式系列：

- 工作母機配件 · 裁剪設備 · 送料設備 · 燙金設備 · 輸送設備
- 食品機械 · 網版印刷設備 · 農用機械 · 醫療設備







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### General Purpose Motor

泛用型馬達

- 30 Induction Motor, Lead Wire Type -IP22 導線式 防護等級IP22
- 32 Induction Motor, Terminal Box Type -IP54 接線盒式- 防護等級IP54
- 34 Reversible Motor 可逆式馬達
- 35 Reversible Motor, Lead Wire Type -IP22 導線式- 防護等級IP22
- 37 Reversible Motor, Terminal Box Type -IP54 接線盒式- 防護等級IP54



### Speed Controlled Motor

速度控制型馬達

- 40 Assembled Type, Variable Speed, Induction/reversible Motor  
組合型無段變速馬達，感應式/可逆式
- 42 Separated Type, Variable Speed, Induction/reversible Motor - IP22  
分離型無段變速馬達，感應式/可逆式 - 防護等級IP22



SESAME



Controller

控制器

- 44 Assembled Type Speed Controller
- 45 Separated Type Speed Controller

- 組合型速度控制器
- 分離型速度控制器



Brake Motor

剎車馬達

- 52 Electro-Magnetic Induction Brake Motor -IP22
- 54 Electro-Magnetic Induction Brake Motor, Terminal Box Type -IP54
- 56 Electro-Magnetic Variable Speed Brake Motor
- 58 Electronic Instant Brake

- 感應式電磁剎車馬達  
-防護等級IP22
- 感應式電磁剎車馬達，接線盒式  
-防護等級IP54
- 無段變速電磁剎車馬達
- 電子式瞬時煞車器



Clutch Brake Motor

離合剎車馬達

- 61 Induction Clutch Brake Motor (40W, 60W, 90W)
- 62 Variable Speed Clutch Brake Motor (40W, 60W, 90W)
- 63 Torque Motor (3W, 6W, 10W, 20W, 40W)
- 65 Speed Reducer (2GN, 3GN, 4GN, 5GN, 5GX)
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- 離合剎車，連續運轉型
- 離合剎車，無段變速型
- 轉矩馬達
- 減速機
- 零組件類



# MOTOR TERM BRIEF INTRODUCTION

## 馬達用詞簡介

### ■ 額定 Rating

馬達之額定是基於溫升及負載之性質所訂定的容許工作極限。額定包括馬達之出力、電壓、頻率、電流、轉矩及轉速等數值。依其溫度的極限，又被分類為連續額定及短時間額定。

Motor rating is the maximum allowance based on its temperature rising and loading. The Rating is including output, voltage, frequency, current, torque, speed and other related value. It can be classified continuously and short-time rating according to temperature limitation.

### ■ 連續及短時間額定 Continuously & Short-time Rating

在室溫40°C的溫度下，馬達能夠連續擔當一恆定的負載，而不會使其溫度超過安全限度的期間，我們稱之為額定時間。

連續額定時間表示您可以連續使用這個馬達。短時間額定表示您僅能用於被指定的時間範圍內。在間歇性運轉的情況下使用短時間額定的馬達，因為熱擴散效應，可以獲得較長時間的運轉。

Time rating is defined via the motor works continuously with certain loading in ambient temperature 40°C and the motor temperature itself does not exceed the safe limit. Continuously rating means the motor can be operated continuously. Short-time rating means the motor can be operated within specified time interval only. Short-time rating motor with interval operation runs longer because of the thermal diffusion effects.

### ■ 額定出力 Rated Output

在指定的時段內，溫升不超過標準極限之最大負載作為額定出力。例如：一個10馬力連續額定的馬達，可以當作12或13馬力短時間額定的馬達來使用，因此馬達只標示額定出力。

在額定出力下所產生的轉速及轉矩，我們稱之為額定轉速及額定轉矩。只有在額定的條件下使用這個馬達，您才能獲得馬達最適宜的特性。

Rated output means the motor works in a defined period of time with maximum loading and the motor temperature itself does not exceed the safe limit. For example, a 10HP continuous rating motor can be used as a 12HP or 13HP motor via the short-time rating usage. Thus it is marked rated output only. The RPM and torque under rated output formulation are justified as rated RPM and rated torque. The most suitable performance of motor is available only when the motor works in rated condition.

出力 Output = 1.027 · N · T [瓦]

1馬力 1HP = 746 瓦 Watt

1.027: 常數 Constant

N: 轉速 Speed (RPM)

T: 轉矩 Torque (Kg · m)

### ■ 起動轉矩 Starting Torque (參考曲線圖 see graph)

馬達在起動時所產生之轉矩稱之為起動轉矩。如果您的負載大於這個轉矩，則這個馬達將無法啟動。

The torque produced by the motor when starting is called starting torque. The motor does not work if loading is larger than the starting torque.

### ■ 最大轉矩 Maximum Torque (參考曲線圖 see graph)

在指定的電壓及頻率下，這個馬達所能輸出的最大轉矩。馬達在運轉當中，如果您所加的負載大於這個轉矩時，馬達會立即失速停止。

The maximum torque is the most torque output of the motor under specified voltage and frequency. If the additional loading is larger than the maximum torque when the motor is running, the motor will stop immediately.

### ■ 額定轉矩 Rated Torque (參考曲線圖 see graph)

在指定的電壓及頻率下，這個馬達在額定出力時所產生的轉矩，我們稱之為額定轉矩，同時也是額定轉速下的轉矩。

The torque produced by the motor at rated output under specified voltage and frequency is rated torque. It is also the torque at rated speed.

### ■ 額定轉速 Rated Speed (參考曲線圖 see graph)

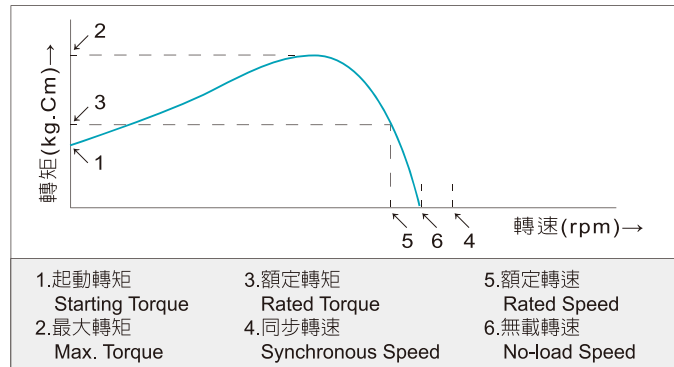
在額定出力時所得的馬達轉速。

The measured speed of the motor at rated output.

### ■ 馬達的防護等級 Motor Ingress Protection Rating

機型 Model	等級 Rating	說明 Explanation
導線型 Wire Type	IP22	防止直徑12mm以上的固體侵入(如：手指)。 防止垂直方向兩側15°以內之水滴侵入。 Prevent against object diameter > 12mm such as fingers Prevent against dripping water when tilted up to 15°
端子盒型 Terminal Box Type	IP54	防止灰塵侵入(不會產生不良積塵)。 防止任何方向的水滴侵入。 Prevent against dust and it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment. Water splashing against the enclosure from any direction.

### ■ 轉速對轉矩的特性曲線圖 Speed vs. Torque Graph



### ■ 同步轉速 Synchronous Speed (參考曲線圖 see graph)

馬達的極數及電源的頻率會決定這個馬達應有的轉速。一般我們將轉速標示為每分鐘多少轉 (rpm)。其計算公式如下：

Motor pole and power frequency will determine the speed. In general the unit is revolutions per minute (rpm). The calculation formula is:

$$N_s = \frac{120 \cdot f}{P}$$

$N_s$  : 同步轉速 Synchronous Speed  
 120 : 常數 Constant  
 $f$  : 頻率 Hertz (Hz)  
 $P$  : 馬達的極數 Motor Pole

例如：4極數馬達在頻率60HZ時的同步轉速為1800rpm。  
Example: A 4-pole motor at 60 Hz, its synchronous speed is 1800 rpm.

### ■ 無載轉速 No-load Speed (參考曲線圖 see graph)

在沒有負載的情況下這個馬達的轉速。因為滑差率的關係，感應馬達及可逆馬達的轉速會略低於同步轉速(約少20~60rpm)。

Motor speed under zero load is called no-load speed. Because of slip ratio, the speed of induction motor and reversible motor will be less than their synchronous speed (approx. 20 ~ 60 rpm less).

### ■ 轉差率 Slip Ratio

一種馬達轉速的表示法。其計算是如下：An indication of motor speed.

$$S = \frac{N_s - N}{N_s}$$

$S$  : 滑差率 Slip Ratio  
 $N_s$  : 同步轉速 Synchronous Speed (rpm)  
 $N$  : 指定負載時的轉速 Designated Load Speed (rpm)

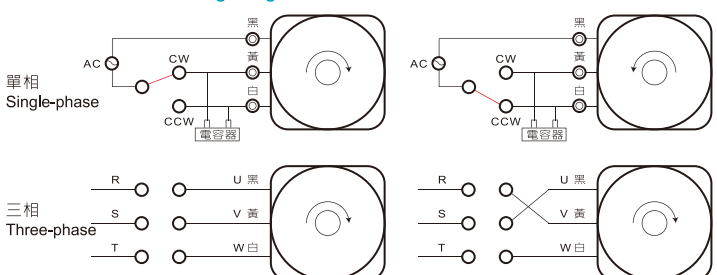
例如：一個4極馬達在50Hz的環境拉動一個物體時，轉差率為0.1，則這個馬達的轉速為：  
Example: If a 4-pole motor at 50 Hz pulling an object, its slip ratio is 0.1, then the motor speed is 1350 rpm.

$$N = \frac{120 \times 50}{4} (1 - 0.1) = 1500 \times 0.9 = 1350 \text{ rpm}$$

### ■ 過轉 Overrun

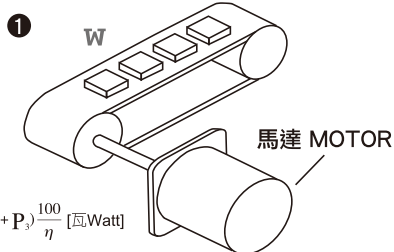
當電源被關掉後，馬達所產生額外的旋轉，稱之為過轉。一般是用圈數或度數來表示。Overrun is the additional rotation after the power is turned off. It is indicated by turns or degree.

### ■ 馬達配線圖 Wiring Diagram



## POWER OUTPUT CALCULATION 出力計算

### 皮帶輸送機 Belt Conveyor



$$P_g = (P_1 + P_2 + P_3) \frac{100}{\eta} \text{ [瓦Watt]}$$

無負載動力: No-load

$$P_1 = 9.8\mu wvL \text{ [瓦Watt]}$$

水平動力: Horizontal

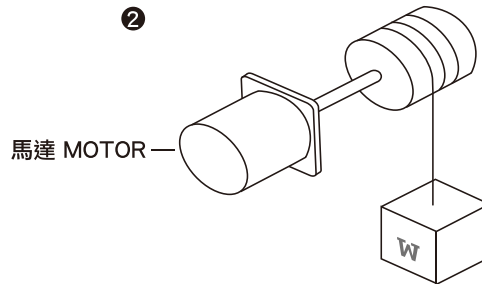
$$P_2 = \frac{\mu QL}{367} \text{ [瓦Watt]}$$

垂直動力: Vertical

$$P_3 = \pm \frac{QH}{367} \text{ [瓦Watt]}$$

- L : 輸送機之長度 Length of conveyor(m)
- W : 皮帶單位長度之重量 Weight of belt in unit length(kgf/m)
- $\mu$  : 摩擦係數 Friction coefficient
- V : 皮帶速度 Belt speed(m/sec)
- Q : 輸送量 Quantity(kgf/h)
- $\eta$  : 效率 Efficiency(%)
- H : 傾斜輸送機兩端之高低差 Height difference between two ends of belt(m)

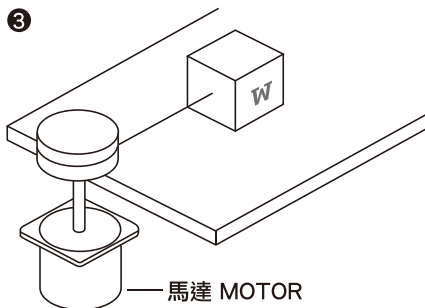
### 將荷重捲上的場合 Winding Up a Load



$$P_g = \frac{wv}{6.12} \cdot \frac{100}{\eta} \text{ [瓦Watt]}$$

- W : 皮帶單位長度之重量 Weight of belt in unit length(kgf/m)
- V : 皮帶速度 Belt speed(m/sec)
- $\eta$  : 效率 Efficiency(%)

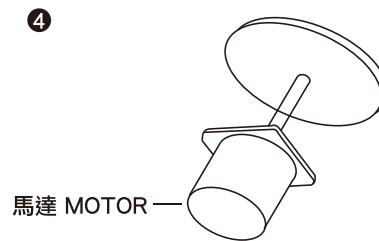
### 接觸面上做水平移動の場合 Horizontal Movement



$$P_g = \frac{\mu wv}{6.12} \text{ [瓦Watt]}$$

- W : 皮帶單位長度之重量 Weight of belt in unit length(kgf/m)
- $\mu$  : 摩擦係數 Friction coefficient
- V : 皮帶速度 Belt speed(m/sec)

### 驅動慣性體の場合 Driving of an Inertia Object



$$P_g = 1.027NT \text{ [瓦Watt]}$$

$$T \approx \frac{GD^2}{375} \cdot \frac{N}{t} \text{ [kgf-m]}$$

- N : 每分鐘迴轉數 Revolutions per minute (rpm)
- T : 轉矩 Torque(kgf . m)
- GD<sup>2</sup> : 飛輪效應 (含轉子的飛輪效應) Flywheel effect with rotor(kgf . m<sup>2</sup>)
- t : 啟動時間 Starting time(sec)

## 馬達的一般規格 General Spec of Motor

絕緣阻抗 Insulation Resistance	在常溫常濕以額定運轉後，線圈及外殼間以DC500V高阻計量測，測定值在100MΩ以上。 Test value above 100MΩ by DC500V hi-resistance meter at coil and housing after rated running at constant temperature and humidity.
絕緣耐力 Insulation Endurance	在常溫常濕以額定運轉後，線圈及外殼間以60Hz、1.8KV加入一分鐘無異狀。 Hi-pot test by 60Hz 1.8KV for one minuate at coil and housing without damage after rated running at constant temperature and humidity.
溫度上升 Temperature Rise	在額定運轉後以溫度計法測定，溫度上升值在75°C以下。 Temperature rise below 75°C after rated running.
周溫範圍 Ambient Temperature Range	-10°C~+50°C(電容器組合馬達-10°C~+40°C) -10°C~+50°C (motor with capacitor -10°C~+40°C)
絕緣等級 Insulation Class	E級(120°C) E Class (120°C)



# CHOOSING A SUITABLE MOTOR

## 馬達的選擇方法

### ● AC小型齒輪 - 減速、變速、剎車馬達

#### AC SMALL GEAR - SPEED REDUCED, VARIABLE SPEED, BRAKE MOTOR

交流馬達 AC MOTOR				
速度 可變 VARIABLE SPEED	馬達機種 MODEL	無段變速剎車馬達 Variable Speed Brake Motor	可逆式變速馬達 Reversible Variable Speed Motor	連續運轉變速馬達 Variable Speed Induction Motor
	旋轉方向 TURNING DIRECTION	正逆轉 Forward or Reverse	頻繁正逆轉 Frequent Forward/ Reverse	單一方向 Single Direction
	剎車及保持力 BRAKE & HOLDING FORCE	電磁剎車及保持力 Magnetic Brake & Holding Force	微保持力 Minor Holding Force	無保持力 No Holding Force
	電源/馬達出力 POWER SOURCE/ OUTPUT	單相 1 PHASE / 25W-90W <ul style="list-style-type: none"> <li>● 馬達與轉速發電機的結合，成為閉路控制系統。</li> <li>● 速度變化寬廣。</li> <li>● 速度控制簡單，配線容易。</li> <li>● 具安全電磁剎車、保持力大。</li> </ul> A closed-circuit control system with motor and generator combined. Wide range of speed. Simple speed control, easy wiring. Magnetic safety brake, great holding force.	單相 1 PHASE / 6W-60W <ul style="list-style-type: none"> <li>● 馬達與轉速發電機的結合，成為閉路控制系統。</li> <li>● 速度變化寬廣。</li> <li>● 速度控制簡單，配線容易。</li> <li>● 內藏簡易剎車功能。</li> <li>● 頻繁正逆轉使用。</li> </ul> A closed-circuit control system with motor and generator combined. Wide range of speed. Simple speed control, easy wiring. Built-in easy brake function. Frequent forward & reverse.	單相 1 PHASE / 6W-90W <ul style="list-style-type: none"> <li>● 馬達與轉速發電機的結合，成為閉路控制系統。</li> <li>● 速度變化寬廣。</li> <li>● 速度控制簡單，配線容易。</li> </ul> A closed-circuit control system with motor and generator combined. Wide range of speed. Simple speed control, easy wiring.
速度 固定 CONSTANT SPEED	馬達機種 MODEL	剎車馬達 Brake Motor	可逆式馬達 Reversible Motor	連續運轉式馬達 Induction Motor
	旋轉方向 TURNING DIRECTION	正逆轉 Forward or Reverse	頻繁正逆轉 Frequent Forward/ Reverse	單一方向 Single Direction
	剎車及保持力 BRAKE & HOLDING FORCE	電磁剎車及保持力 Magnetic Brake & Holding Force	微保持力 Minor Holding Force	無保持力 No Holding Force
	電源/馬達出力 POWER SOURCE/ OUTPUT	單相 1 PHASE / 25W-90W <ul style="list-style-type: none"> <li>● 具安全電磁剎車、保持力大。</li> <li>● 機種豐富。</li> </ul> Magnetic safety brake, great holding force. Various models. 三相 3 PHASE / 25W-90W <ul style="list-style-type: none"> <li>● 具安全電磁剎車、保持力大。</li> <li>● 機種豐富。</li> </ul> Magnetic safety brake, great holding force. Various models.	單相 1 PHASE / 6W-60W <ul style="list-style-type: none"> <li>● 30分鐘額定。Rated 30 mins.</li> <li>● 起動轉矩 Starting torque = 0.8-1.0 額定轉矩 Rated torque</li> <li>● 正逆轉切換簡單。 Easy to switch directions.</li> <li>● 內藏簡易剎車裝置，停止過轉小。 Built-in easy brake system, minimized over run.</li> </ul>	單相 1 PHASE / 6W-90W <ul style="list-style-type: none"> <li>● 連續額定。Continuous rating.</li> <li>● 一般動力用。For general purposes</li> <li>● 用途廣泛。 Multi-applications.</li> <li>● 起動轉矩 Starting torque = 0.7-0.9 額定轉矩 Rated torque</li> <li>● 機種豐富。Various models.</li> </ul> 三相 3 PHASE / 25W-90W <ul style="list-style-type: none"> <li>● 功率大、高效率。 High power, high efficiency.</li> <li>● 適合產業機械使用。 Suitable for industrial machinery.</li> </ul>

★ NOTE：本公司若設計有變更時，恕不另行通知。  
★ Specifications subject to change without prior notice.

★ 本公司出廠之產品若有通過UL認證，會於產品銘牌上標示「UL」。  
★ Products with UL certification will be marked "UL" on the nameplates.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

## PRODUCT NAME CODING SYSTEM

品名之定義

### 感應式馬達 INDUCTION MOTOR

4 I K 25 C GN - A M

#### 其他附件 ACCESSORIES

F: 風扇 Fan M: 電磁煞車 Magnetic Brake  
 P: 溫度開關 Thermo Switch  
 T: 接線盒 Terminal Box  
 Ts: 小T盒 Small Box (87L x 59W x 43Hmm)  
 TL: 大T盒 Large Box (132L x 55W x 50Hmm)  
 FF: 強制風扇 Forced Fan

#### 電壓極數 VOLT/ POLE

A: 1ø110V/4P B: 1ø110V/2P C: 1ø220V/4P  
 D: 1ø220V/2P CE: 230V~240V (50HZ)/ 4P  
 S: 3ø220V/4P T: 3ø220V/2P U: 3ø380V/4P V: 3ø380V/2P

#### 馬達軸形狀 SHAFT SHAPE

A: 圓柱軸 Round (Smooth) GN: 螺旋齒軸 Helical Gear  
 GX: 螺旋齒輪軸 Helical Gear  
 SW: 渦輪出力軸 Worm Gear  
 離合馬達專用 (For Clutch Brake Motor)  
 GK: 正齒輪軸 Spur Gear Shaft GS: 正齒輪軸 Spur Gear Shaft  
 (GS/GX 僅用於 60W/90W, GS/GX for 60W/90W Only)

加C/R: 加C為轉矩馬達與控制器組合  
 加R為調速馬達  
 C: Torque Motor Assembled with Controller  
 R: Variable Speed

#### 輸出功率 OUTPUT

6: 6W 15: 15W 25: 25W 40: 40W 60: 60W 90: 90W

#### 馬達系列 MOTOR SERIES

K: K Series

#### 種類 TYPE

I: 連續運轉 Induction R: 可逆式馬達 Reversible  
 T: 轉矩馬達 Torque (轉矩馬達與控制器分離) (Controller is Separated from Torque Motor)

#### 外型尺寸 SIZE

2: 60mm 3: 70mm 4: 80mm 5: 90mm

# PRODUCT NAME CODING SYSTEM

## 品名之定義

### 組成型無段變速馬達

### ASSEMBLED TYPE VARIABLE SPEED MOTOR

M 4 25 - 4 0 1

需與控制器搭配使用。例如，馬達 M206-001 需搭配控制器 US206-01。  
Assembled type variable speed motor works with assembled type speed controller. For example, variable speed motor M206-001 works with speed controller US206-01.

#### 電壓 VOLTAGE

1: 1ø110V 2: 1ø220V  
2E: 1ø240V/50 Hz

#### 馬達種類 MOTOR TYPE

0: 連續運轉式 Induction 1: 可逆式 Reversible

#### 出力軸形狀 OUTPUT SHAFT SHAPE

0: 圓柱軸 Round Shaft  
4: GN型 Helical Type  
6: GX型 Helical Type  
7: SW型 Worm Gear Shaft

#### 輸出功率 OUTPUT

6: 6W 15: 15W 25: 25W 40: 40W 60: 60W 90: 90W

#### 外型尺寸 SIZE

2: 60mm 3: 70mm 4: 80mm 5: 90mm

#### 機種 MODEL

M: 馬達 Motor

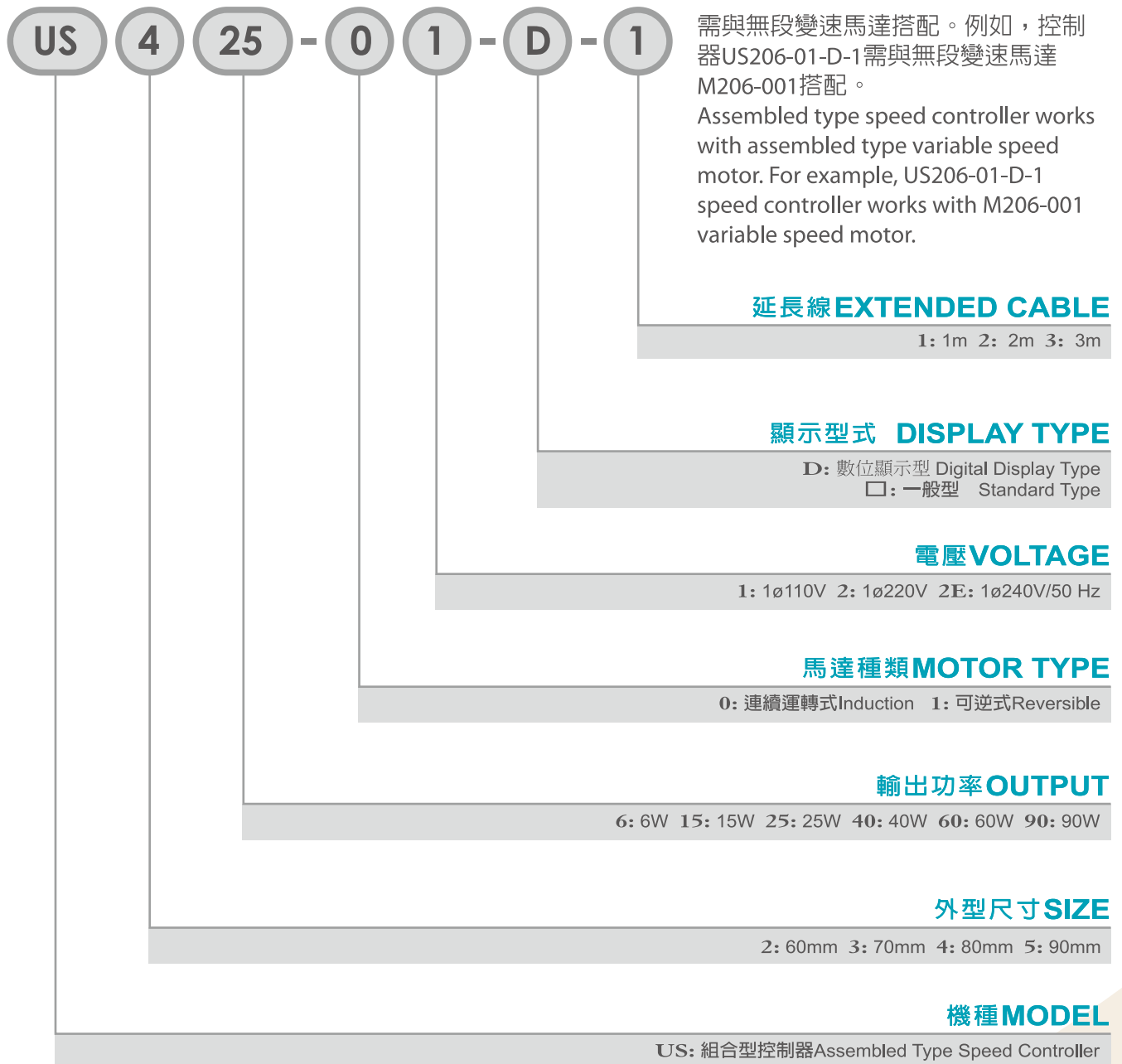


## PRODUCT NAME CODING SYSTEM

品名之定義

### ● 組合型速度控制器

### ASSEMBLED TYPE SPEED CONTROLLER



# PRODUCT NAME CODING SYSTEM

品名之定義

## ● 減速機 SPEED REDUCER

5 GX 100 KE BH

### 其他ADD. SPECS

**H:** 重力型減速機 Heavy Duty **B:** 中負荷型(方形法蘭) Medium Loading  
**BH:** 方形法蘭面重力型減速機 Heavy Duty Square Flange  
**BH、H、B** 僅適用於外型尺寸90mm機種  
BH、H、B are only available with 90mm frame size.

### 軸承種類BEARING TYPE

**精密型 Precision Type:**  
**KE:** 滾珠軸承 Ball Bearing  
**BE:** 含油與滾珠軸承共用 Used For Both Self-Oiling Bearing and Ball Bearing  
**一般型 General Type:**  
**K:** 滾珠軸承 Ball Bearing  : 含油軸承 Self-Oiling Bearing

### 減速比SPEED RATIO

**100:** 1/100 1/3 ~ 1/180 **10X:** 中間減速機 Intermediate Speed Reducer

### 齒輪種類GEAR TYPE

**GN:** 螺旋齒 Helical Gear **GX:** 螺旋齒 Helical Gear  
GB系列可搭配無刷直流馬達 GB series is suitable for BLDC motor.

### 外型尺寸SIZE

2: 60mm 3: 70mm 4: 80mm 5: 90mm

## PRODUCT NAME CODING SYSTEM

品名之定義

### ● 分離型控制器 SEPARATED TYPE SPEED CONTROLLER

S S 3 2 - HR

#### 其他 ADD. SPECS

HR: 高應答性 (只適用於31/32規格) High-responsive (for 31/32 Types only)

#### 電壓 VOLTAGE

1: 1ø110V 2: 1ø220V

#### 容許電流 MAXIMUM CURRENT

2: 2A 3: 3A

#### 種類 TYPE

速度控制器 Speed Controller

#### 機種 MODEL

分離型 Separated Type

### ● 電子式瞬時剎車器 ELECTRONIC INSTANT BRAKE

SB 3 2 S - IN

#### 功能特性 FEATURES

IN: 可用於寸動 Inch Movement

#### 相數 PHASE

S: 3ø, 欄位若空白表示 1ø (The Field N/A For Single Phase)

#### 電壓 VOLTAGE

1: 110V 2: 220V

#### 電流 CURRENT

3: 3A

#### 機種 MODEL

電子式煞車器 Electronic Brake



# INDUCTION MOTOR & SPEED REDUCER INSTALLATION MANUAL

## 1.Attention

### 1.1 Install preparation

- Please read this operation manual before using this motors. Any problems caused by inappropriate operation contrary with the manual, or damage caused by natural disasters, or restructure without our permission, Sesame will not take any responsibility nor will the motor / speed reducer be covered by warranty.
- Warranty is within one year after purchase. Within warranty period, if motor / speed reducer damage is not caused by operation error or by natural disaster, then please send back the product, we should replace the damaged spare part at free of charge.
- Before Installation, ensure correct voltage can be applied to motor.
- Do not bend the lead wires.
- Installation should be proceeded by trained technicians only.
- Please wire motor correctly according to the manual to prevent fire or electrical shock.
- Do not attempt to disassemble or modify the motor to prevent electrical shock or injury.

### 1.2 Installation Conditions

The conditions below must be fulfilled to avoid any motor damage, which is not covered under warranty.

- The motor was designed to be installed on the other facilities/applications.
- Do not expose the motor to flammable or corrosive gas.
- Indoor application only. Room temperature should be maintained between -10~50°C (-10~40°C for motor with capacitor)
- The air humidity should not exceed 85%.
- The altitude of where the motor was installed should not exceed 1000 meter above the sea level.
- Do not expose the motor to the sunshine directly. Dust and spray of oil/water is also forbidden.
- Avoid any continuous vibration or impact on the motor.
- Ensure the motor was installed in a well ventilated location.

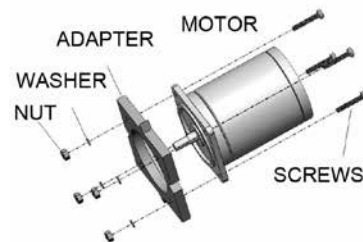
### 1.3 Preparation of start up

- Please check the power supply before starting the motor.
- High temperature might cause the coil and bearing failed earlier.
- Do not connect the motor with inverter.
- Motor might be broken if wrong wiring or overloaded.

## 2.Installation

### 2.1 Round shaft model

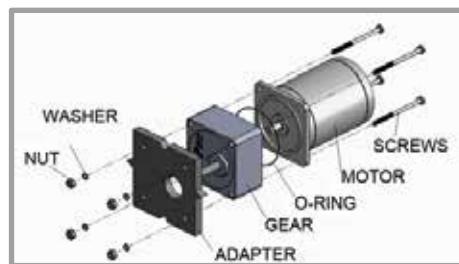
- Mount the motor on the adapt plate by screws. Make sure the motor and the adapter were tightly mounted. (Note that screws for connecting motor and machine were not included)
- Please note that there should be no gap between motor and adapt plate.



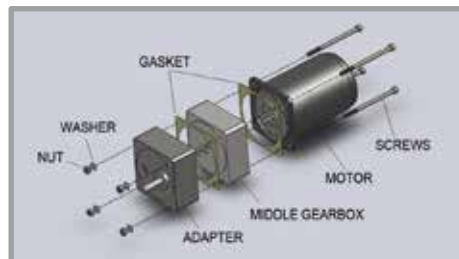
Flange dim $\square$ :	Screw	Tightening torque
60mm	M4	2.0 N · m
70mm	M5	2.5 N · m
80mm	M5	2.5 N · m
90mm	M6	3.0 N · m

### 2.2 Gear shaft model

Install motor and speed reducer by turning speed reducer left and right when gently inserting motor gear shaft into speed reducer until no gap between the mounting surfaces. Insert the screws and tighten them. No hammer or force is allowed.



★O-rings are necessary for some specific models. Please install accordingly.



★Gaskets are required when installing intermediate speed reducer.

#### ⚠ Attention

- Metal chips/unconfirmed substance left inside speed reducer or incorrect installation will damage gears and results in abnormal noise, short lifespan or accident. Please be alert.
- Installation is available only when speed reducer and motor output shaft have the same gear type. Please confirm the specification of both products before installation.
- Specification compatibility check is required before applying both products to other machinery or equipment.
- Sesame Motor Corp. is not responsible for any cause there might occur if user's neglects of specification compatibility checking.

## 3. Wiring Diagrams

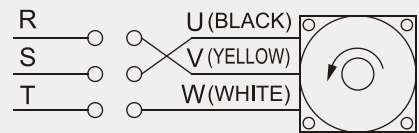
- The motor rotating direction was defined by looking toward the output shaft. In the forward direction for CW, reversed direction for CCW.
- 1 phase motor rotating direction change is available by switching wiring to CW. or CCW.
- 3 phases motor rotating direction change is available by switching any two wires of U, V, and W.

### 3.1 Induction / reversible motor

#### 3.1.1 3 phases

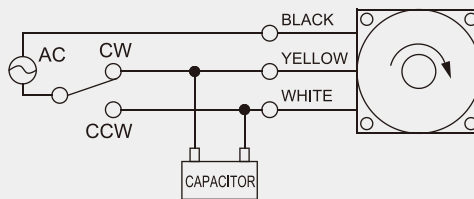


**CW**

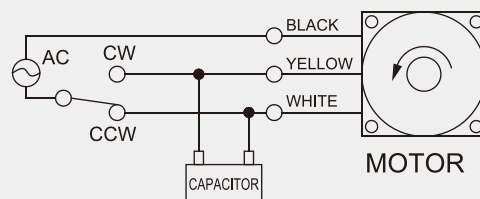


**CCW MOTOR**

#### 3.1.2 1 phase



**CW**



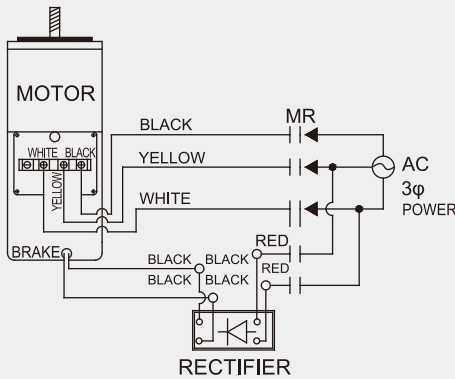
**CCW**

### 3.2 Brake motor

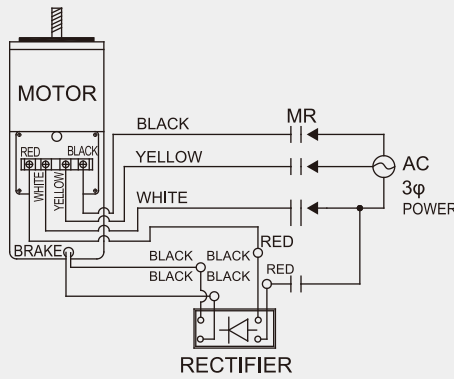


- ▶ The lining clearance will bigger than 0,3-0,35mm after a period of usage, please contact us to replace the lining.
- ▶ Isolating wiring is required when frequent braking condition.
- ▶ Brake frequency limit 10 times per minute.

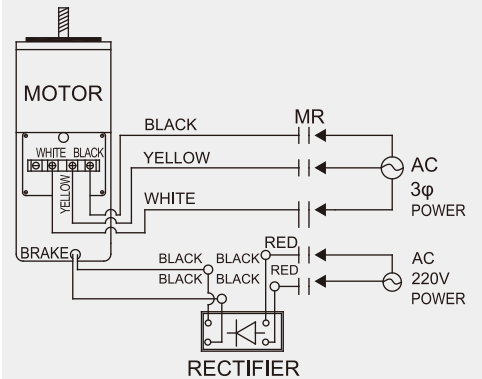
#### 3.2.1 3 phases brake motor with terminal box. (220V / IP54)



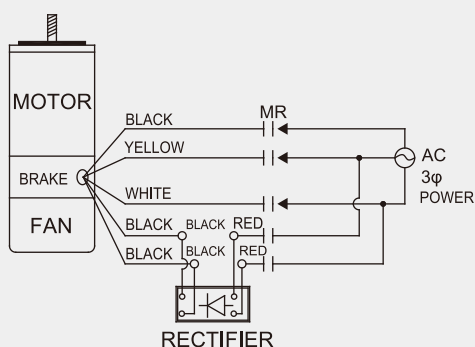
#### 3.2.2 3 phases brake motor with terminal box. (380V~460V / IP54)



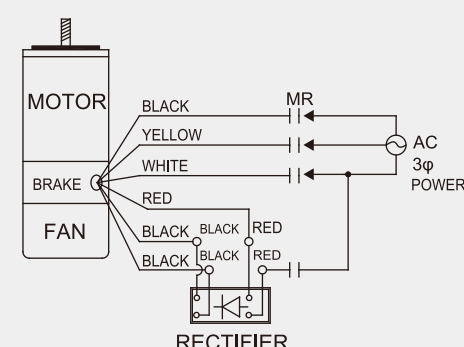
#### 3.2.3 3 phases brake motor with terminal box. (460V~600V / IP54)



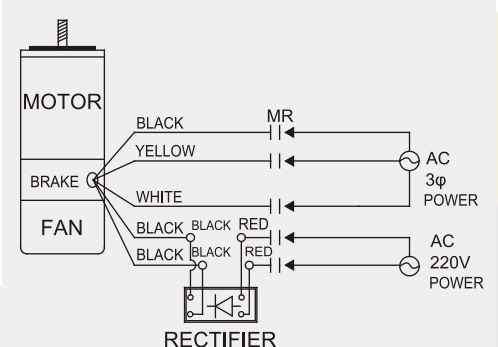
#### 3.2.4 3 phases brake motor (220V / IP22)



#### 3.2.5 3 phases brake motor (380V~460V / IP22)

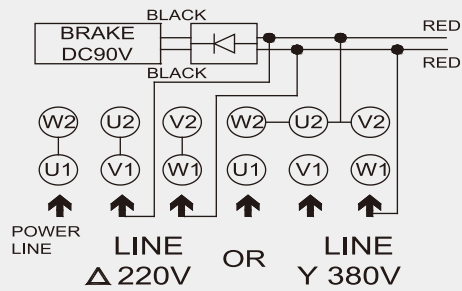


#### 3.2.6 3 phases brake motor (460V~600V / IP22)

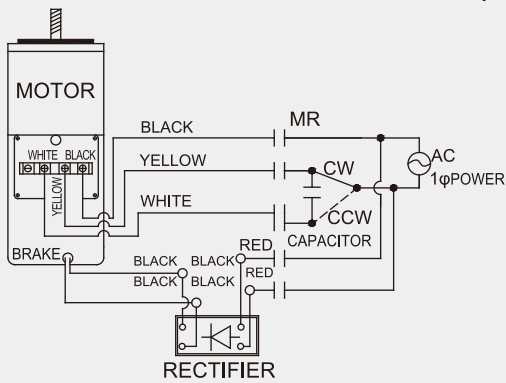


### 3. Wiring Diagrams

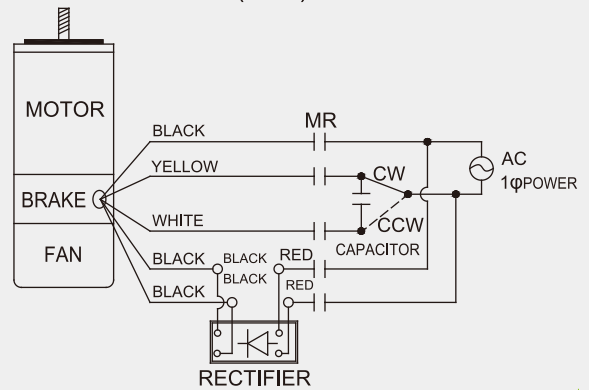
3.27  
3 phases brake motor (dual voltage)



3.28  
1 phases brake motor with terminal box (IP54)



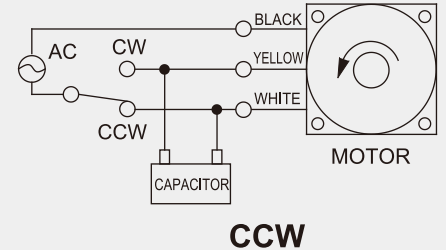
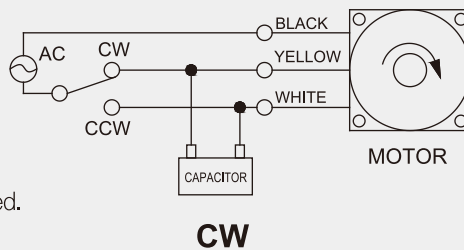
3.29  
1 phases brake motor (IP22)



### 3.3 Torque motor

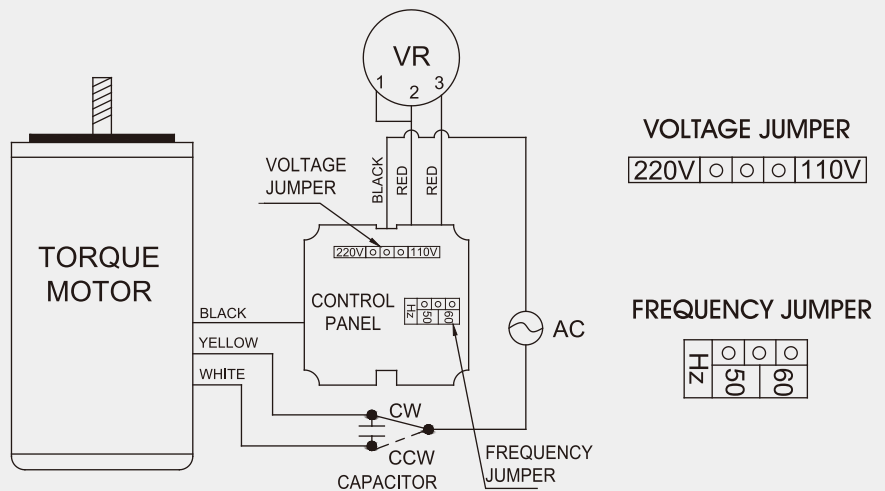
3.31 Standard type

- Motor rotating direction change is available by switching wiring to CW. or CCW.
- To adjust speed and torque, an external voltage regulator is needed.



3.32 Terminal box type

- Voltage regulator is installed in terminal box. Motor speed adjust is available by attached speed controller.

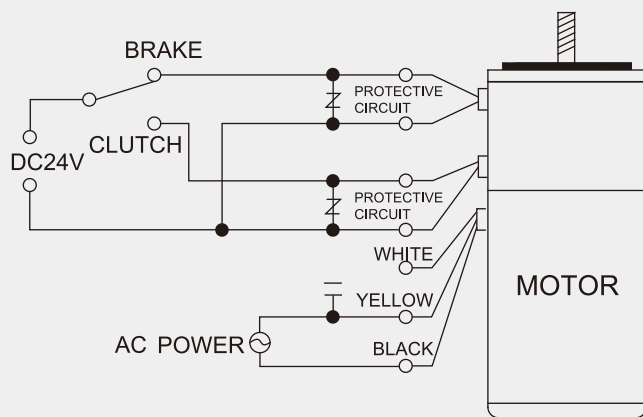


**Attention** ■ Before operate terminal type torque motor, please make sure correct voltage and frequency jumper on the control panel to prevent motor burning down.



## 3.4 Clutch brake motor

- The power supply for motor (AC) and clutch brake (DC24V) must be separated.
- The output shaft keeps rotating when switch to clutch side after power supplied. As the switch is on the brake side, the brake will stop shaft rotation and keep great holding force.
- DC power off will release the brake and hence the output shaft rotates freely.



## 4. Installation of Capacitor (Single Phase Motor Only)

- Ensure the capacitor matches the specification of the motor before installation.
- Install the capacitor with M4 screws (not included).
- Capacitor should be installed inside the electrical box or IP54 rated box to avoid electric shock.



**Attention**

- ▶ To avoid damaging on the mounting foot, the screws tightening torque should not exceed 1 N.m.
- ▶ Install capacitor at least 10 cm away from motor to prevent heat damage to capacitor.
- ▶ Connect one wire in one terminal only.

## 5. Thermally Protected Motor Precaution

- Single phase thermally protected motor will restart automatically when motor temperature falls below a certain level. Always turn off the power before conducting checks or performing work on the motor.
- Thermal switch of three phases motor is installed with two red wires. Please connect two red wires to control system. Thermally protected motor will restart automatically when motor temperature falls below a certain level. Always turn off the power before conducting checks or performing work on the motor.

## 6. Trouble Shooting Guides

Please check the motor according to procedures below if abnormal situation.

- The motor does not work or the speed cannot be raised.
  - Check if the power supply fits the motor specification?
  - Confirm if the power supply is correctly connected?
  - Confirm if the motor is overloaded?
  - Confirm if the wires are poor connected when using crimping terminal or terminal block?
  - Confirm if the capacitor is well installed?
- The motor is over heated
  - Check if the power supply fits the motor specification?
  - Check if the room temperature is under the requirement ( $< 40^{\circ}\text{C}$ )?
  - Confirm if the capacitor specification is correct?
- Noise
  - Check if the motor was blocked?
  - Check if a phase failure occurs?
  - Check if brake well functioning?
  - Check if the fan loosens?
- If the problem could not be solved via the procedures above, please DO NOT take apart the products, contact Sesame for technical support.

# 馬達·減速機 操作說明書

## 1. 注意事項

### 1.1 安裝前準備

- 使用前請熟讀“操作說明書”，若因人為原因、非產品本身原因或天災發生等因素而導致不良或損壞，在操作時違反說明書所示內容而造成的損害，或未依照原本設計之使用方式及非經由本公司進行的改裝及維修所造成的故障，本公司將不承擔任何賠償責任，特此聲明，敬請見諒。
- 本公司的產品保固期間為購買產品後一年內。保固期限內，若產品因非人為因素而發生故障，客戶將產品寄回，本公司免費更換受損零件。
- 安裝前請先確定使用正確之電壓規格。
- 請勿施壓於出口線上。
- 請指定技術人員進行安裝。
- 請按照接線圖確實地進行接線，否則有可能引起火災或觸電。
- 請勿對馬達進行拆解或改造，否則有可能引起觸電或受傷。

### 1.2 安裝環境的限制

馬達必須依據下列條件安裝，不符合下列之安裝條件及使用環境將會損害到本馬達，不在保固範圍內。

- 本產品之設計或製造，為使用裝配於其他之機械設備上。
- 避免將馬達使用於可燃氣體或腐蝕氣體之環境
- 限使用於室內。周溫範圍-10°C~+50°C ( 電容器組合馬達-10°C~+40°C )。
- 溼度: 不可超過85%，以避免水氣凝結。
- 高度: 不可超過海平面1000 公尺。
- 避免陽光直射，灰塵堆積。
- 避免水或油的噴濺。
- 避免連續性震動或撞擊。
- 使用於良好通風之場所。

### 1.3 操作準備

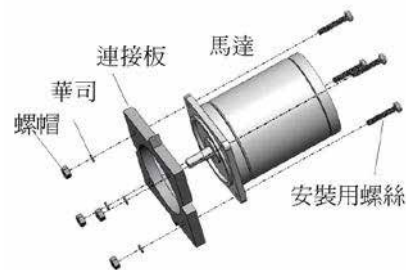
- 馬達啟動前請檢查電源。
- 高溫會損害線圈或培林之壽命。
- 使用前請先確認電容器規格。
- 請勿搭配變頻器使用。
- 馬達接線錯誤會導致馬達燒毀。
- 馬達超負荷使用有燒毀之虞。

## 2. 安裝

### 2.1 圓軸型

在連接板上開孔後用螺絲、螺帽及墊圈將馬達固定在安裝板上(安裝用螺絲未附)。

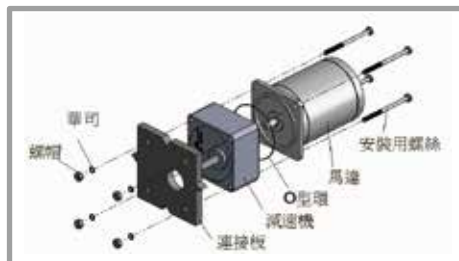
請注意馬達的安裝面與連接板之間不要留有縫隙。



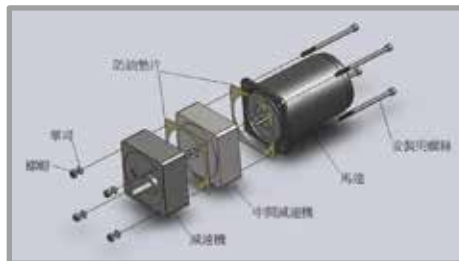
法蘭面口：	螺絲規格	安裝力矩
60mm	M4	2.0 N·m
70mm	M5	2.5 N·m
80mm	M5	2.5 N·m
90mm	M6	3.0 N·m

### 2.2 齒輪軸型

將馬達齒形出力軸端與減速機金屬板端結合，結合時不可硬擠或敲擊，將減速機輕輕左右旋轉，再慢慢的銜接，使用附屬之螺絲安裝於設備上時，請確認馬達與減速機間之結合面不可有間隙。



★部份機種附加O型環，請確實依安裝位置安裝，以免發生漏油。



★2GN~4GN中間減速機組裝時，前後請加裝防油墊片。

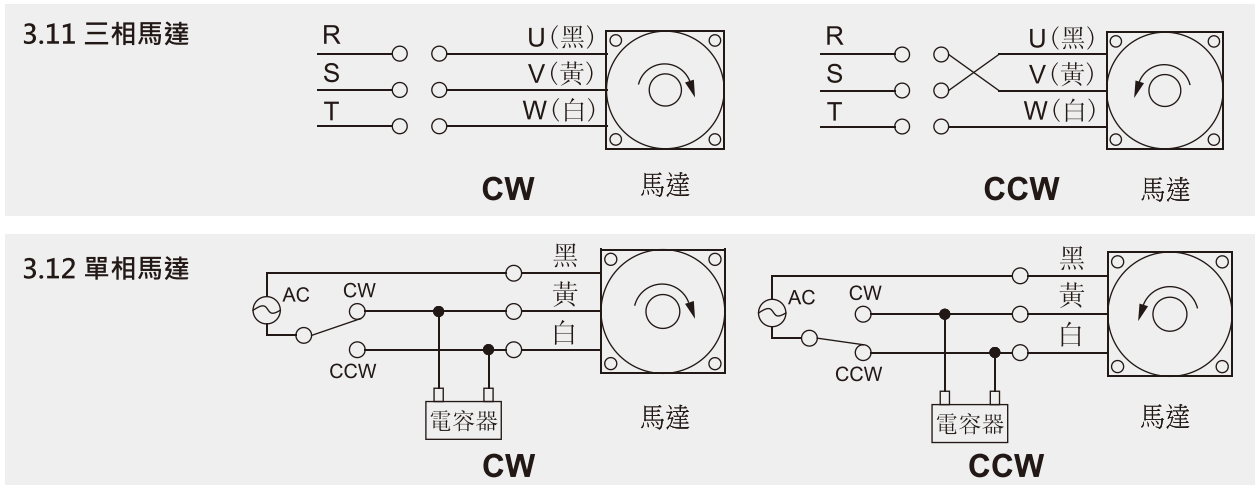
#### △ 請注意

- 減速機若有金屬屑或異物，或未依上述方法與馬達正確組合，將會使齒輪受傷而產生異音，減少二者使用壽命，也可能造成意外，請特別注意。
- 只有相同齒形的減速機及馬達出力軸，才能互相匹配組裝。
- 將本公司產品與其他產品搭配使用時，請確認是否符合客戶所需之規格、法規或限制等。
- 此外，請客戶自行確認目前所使用的系統、機械或是裝置是否適用於本公司產品。
- 如未確認是否符合或適用時，本公司無須對本公司產品的適用性負責。

## 3. 配線圖

- 馬達運轉方向乃為從輸出軸心正視目測到的方向。正轉方向為CW，逆轉方向為CCW。
- 單相馬達運轉方向的切換：將開關扳至CW時馬達則以順時鐘方向運轉，開關扳至CCW時，則以逆時鐘方向運轉。
- 三相馬達運轉方向的切換：只須改變U、V、W中任何2線的位置，馬達便會以逆時鐘方向運轉。

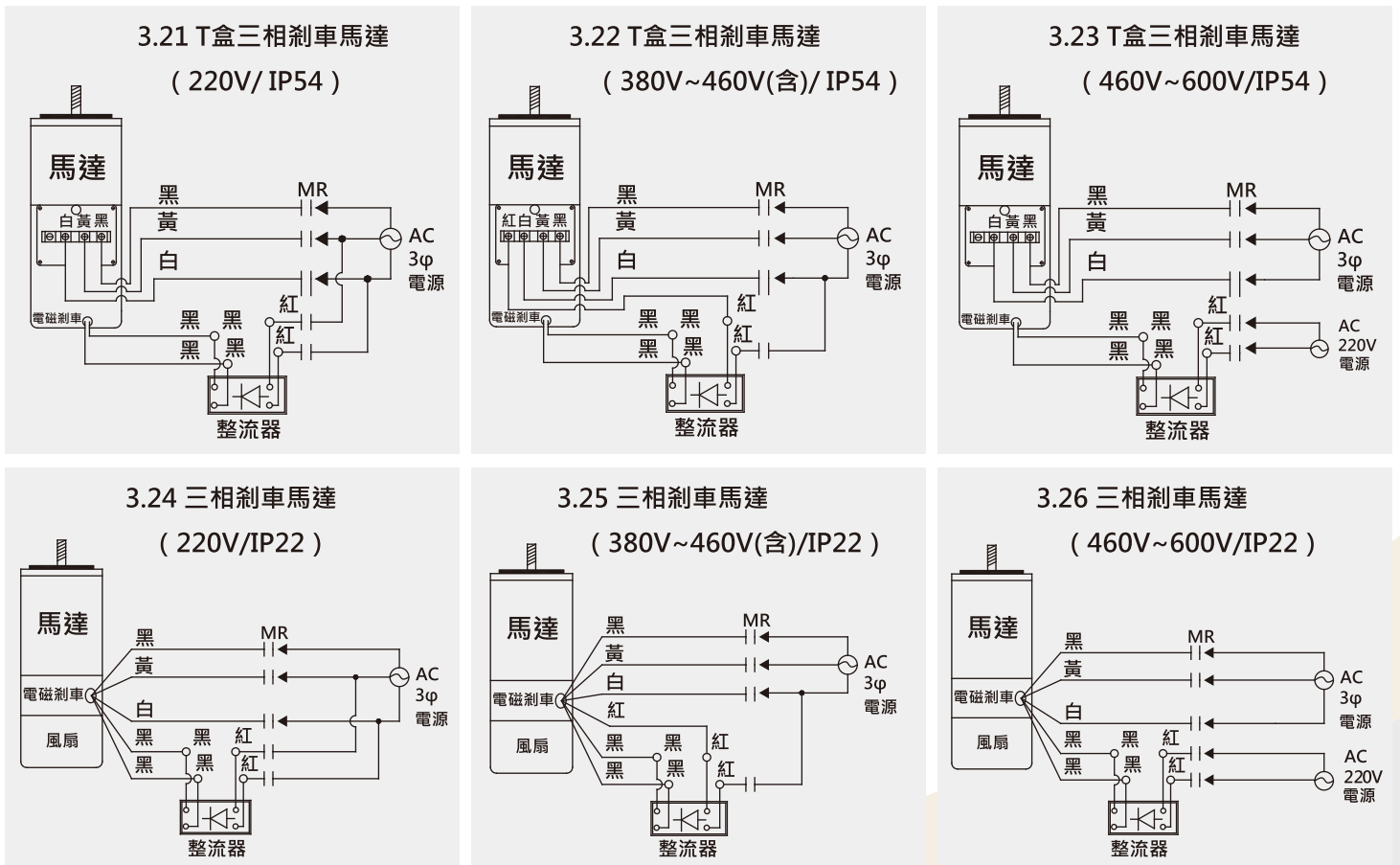
### 3.1 感應式/可逆式馬達



### 3.2 剎車馬達



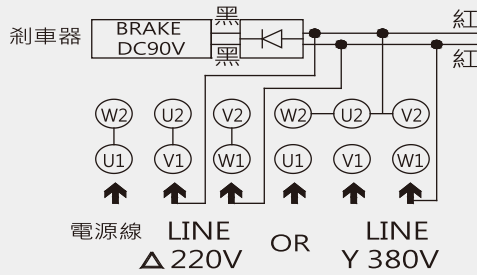
- ▶ 請注意使用一段時間之後，來令片間隙超過0.3~0.35mm，請更換來令片。
- ▶ 剎車馬達使用頻繁及高應答時，請使用隔離配線。
- ▶ 感應式電磁剎車馬達之使用頻率不可大於10次/分



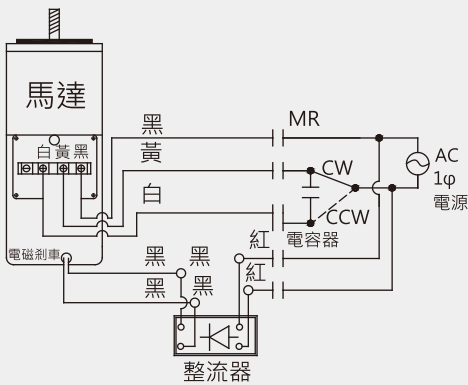


### 3. 配線圖

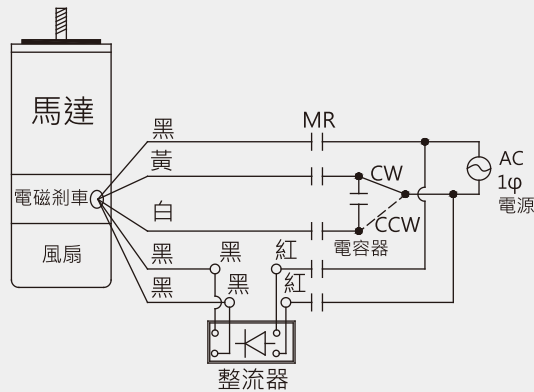
3.27 三相剎車馬達 (雙電壓)



3.28 T盒單相剎車馬達 (IP54)



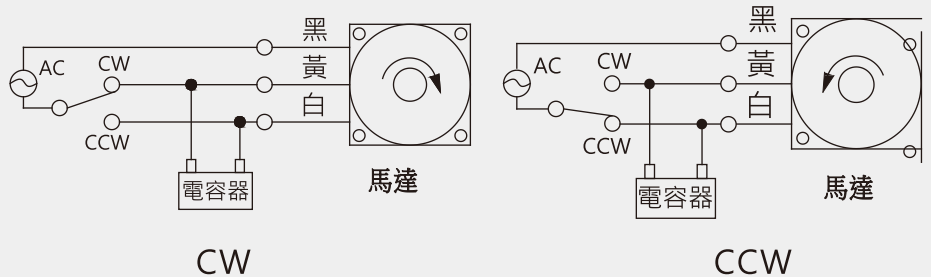
3.29 單相剎車馬達 (IP22)



### 3.3 轉矩馬達

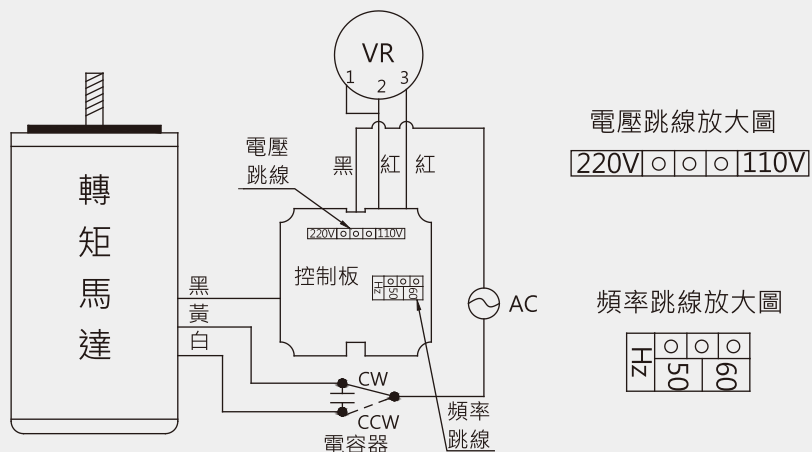
3.31 標準型轉矩馬達

- 運轉方向的切換：將開關扳至CW時馬達則以順時鐘方向運轉，開關扳至CCW時，則以逆時鐘方向運轉。
- 調整速度扭力時，必須於外部架設電壓調整器。



3.32 內藏型轉矩馬達

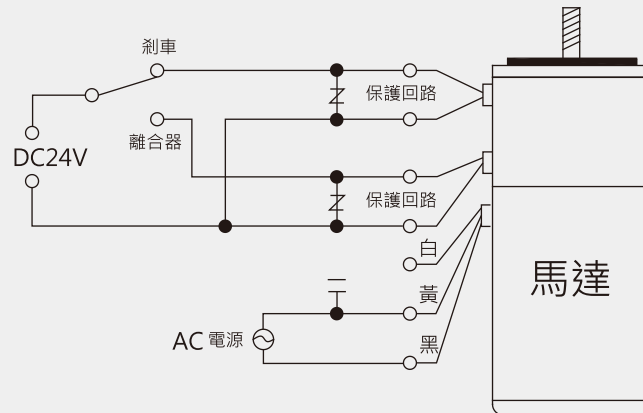
- 端子盒內藏電壓調節器，可依附屬的速度設定器簡單的控制馬達速度。



**⚠ 請注意** ■ 內藏型轉矩馬達使用前，請先調整控制板上的電壓跳線及頻率跳線，以確保馬達可以正常運轉，免於燒毀之虞。

## 3.4 離合剎車馬達

- 馬達電源 ( AC ) 與離合器、剎車用電源 ( DC24V ) 必須分開。
- 馬達在運轉狀態，開關切向離合器側時，出力軸開始回轉並將動力傳出。切向剎車側時瞬間停止，且有很大的保持力。
- 若將DC 電源切斷時，出力軸可以自由轉動。



## 4. 電容器安裝須知 (僅附於單相馬達)

- 請再確認附屬的電容器是否符合馬達銘牌上所記載的電容量再進行安裝。
- 安裝電容器時請用M4螺絲 ( 本電容器不附安裝螺絲 ) 。
- 電容器應安裝於電氣箱內或IP54保護盒內部，以避免電擊。



**請注意**

- ▶ 為防止安裝腳的損毀，螺絲的安裝力矩請控制在1N·m 以下。
- ▶ 電容器之安裝位置要離馬達外殼10cm 以上，以防電容器會因受熱而縮短使用壽命。
- ▶ 請在 1 個端子上連接 1 根導線。

## 5. 溫控機種注意事項

- 單相馬達內藏過熱保護裝置，該裝置可在馬達因某種原因造成過熱時自行啟動而使馬達停止。馬達於溫度下降時會自動恢復運轉，所以在進行檢查作業時，請務必事先切斷電源。
- 三相馬達過熱保護裝置，輸出二條紅色出口線，請與控制系統連結。該裝置可在馬達因某種原因造成過熱時自行啟動而使馬達停止。馬達於溫度下降時會自動恢復運轉，所以在進行檢查作業時，請務必事先切斷電源。

## 6. 故障排除步驟

馬達動作異常時，請依步驟進行檢查。

- 馬達不轉或轉速無法提升
    - 馬達電壓是否符合規格?
    - 電源連接是否準確?
    - 負載是否過大?
    - 使用端子台或者壓接端子作連結時是否有接觸不良的狀況?
    - 電容器是否規格正確或安裝妥當?
  - 馬達異常發熱?
    - 馬達電壓是否符合規格?
    - 環境溫度是否過高(需 < 40°C)?
    - 電容器是否正確?
  - 馬達發出異音
    - 確認是否有異物卡住?
    - 確認是否欠相?
    - 剎車器功能是否正常?
    - 風扇葉是否鬆脫?
- 若經以上檢查仍無法查出故障原因，請勿進行拆解，請儘快與世協電機連絡，以取得技術協助。

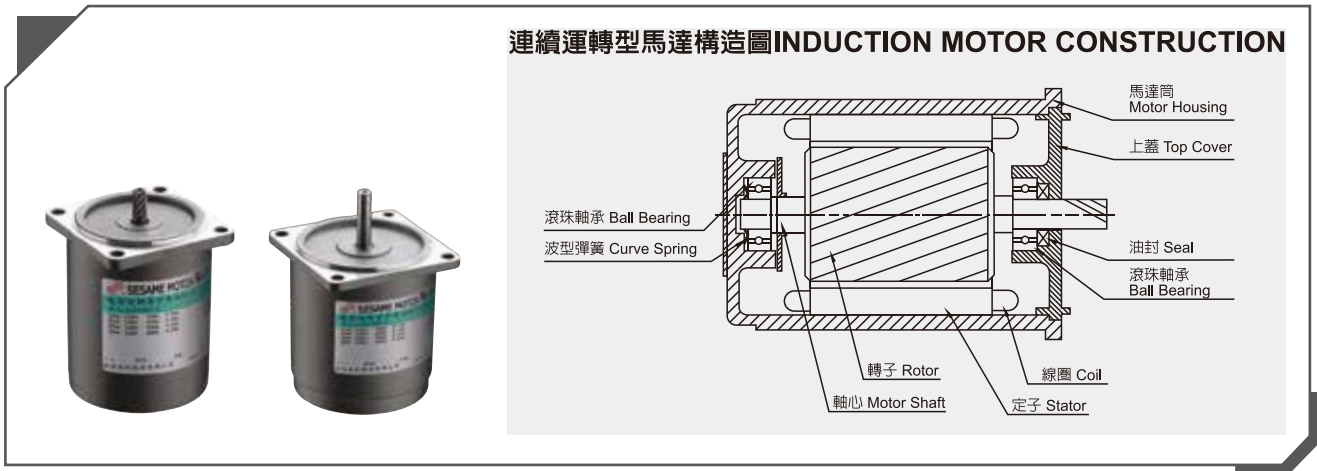
# GENERAL PURPOSE MOTOR

## 泛用型馬達

- 連續額定 Continuous Rating
- 高效率、低噪音 High Efficiency, Low Noise
- 用途廣泛 Multifunctional
- 單相馬達：電容運轉型 1 Phase: with Capacitor
- 三相馬達：連續運轉型，適合產業機械使用 3 Phase: Continuous Running, Suitable for Industrial Machinery

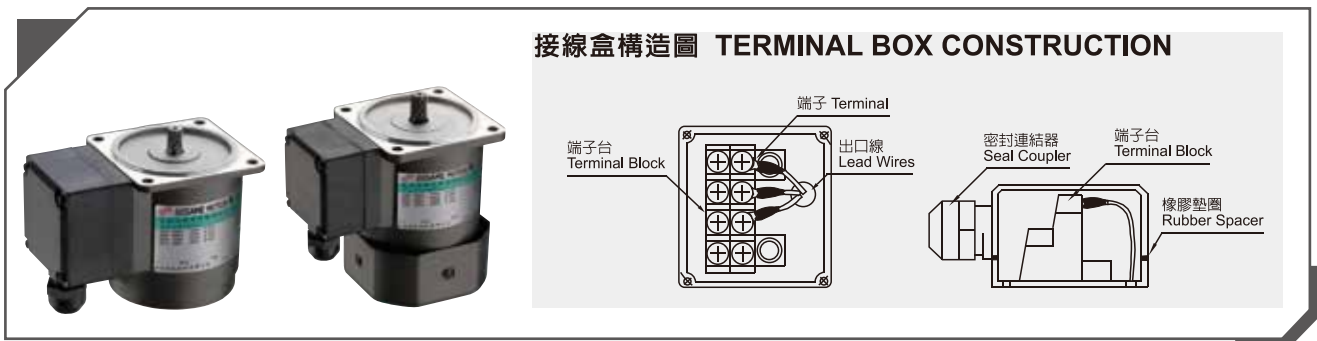
### 連續運轉型，導線式

### INDUCTION MOTOR, LEAD-WIRE TYPE (6W-90W)



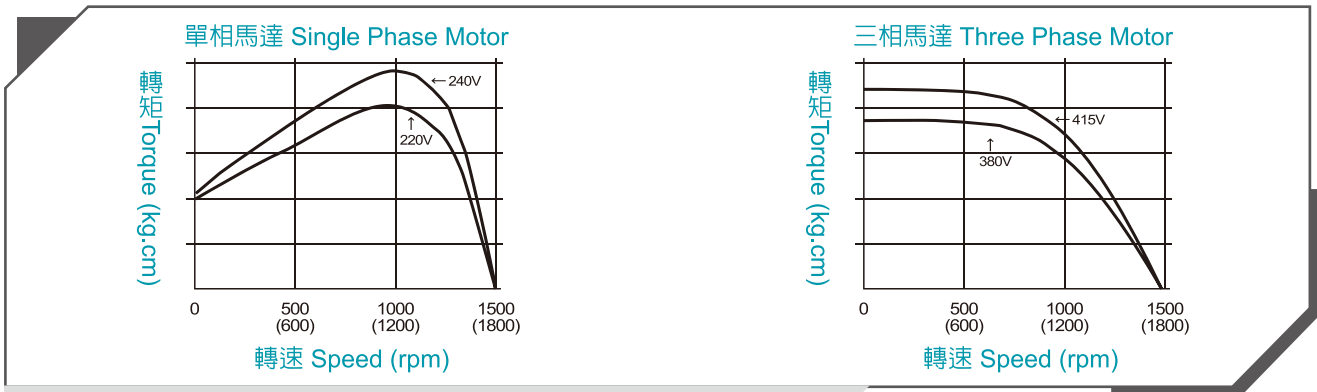
### 連續運轉型，接線盒式

### INDUCTION MOTOR, TERMINAL BOX TYPE (6W-90W)



### 連續運轉型馬達特性圖

### INDUCTION MOTOR CURVE

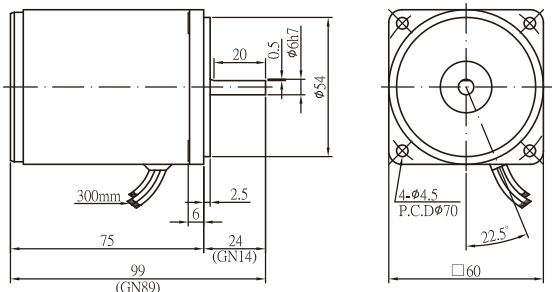


備註：4極馬達在頻率50Hz時，同步轉速為1500rpm。在60Hz時為1800rpm。  
 NOTES: At 50Hz, a 4-pole motor has synchronous turning speed of 1500rpm, 1800rpm at 60Hz.

## IK Series INDUCTION MOTOR, LEAD-WIRE TYPE-IP22

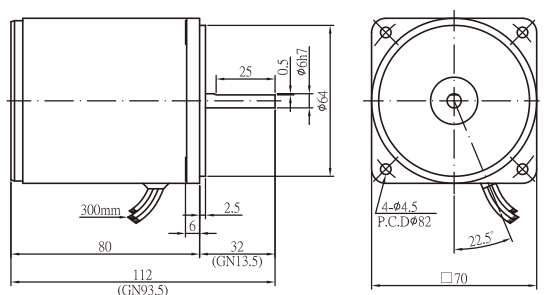
感應式馬達 導線式-防護等級IP22

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



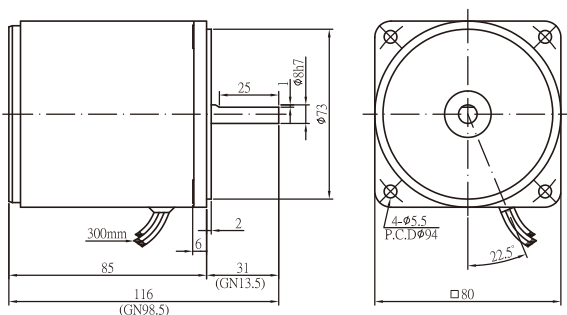
6W外型圖

6W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITOR
2IK6A(GN)-A	6	1ø100/110	50/60	4	1150/1400	連續Continuous	0.7/0.63	0.51/0.41	0.22/0.21	2.5/300V
2IK6A(GN)-C	6	1ø200/220	50/60	4	1150/1550	連續Continuous	0.65/0.7	0.51/0.54	0.1/0.1	0.7/450V
2IK6A(GN)-CE	6	1ø230/240	50	4	1100/1200	連續Continuous	0.74/0.77	0.55/0.5	0.11/0.1	0.7/450V



15W外型圖

15W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
3IK15A(GN)-A	15	1ø100/110	50/60	4	1200/1600	連續Continuous	0.88/1.04	1.22/0.91	0.36/0.35	5/300V
3IK15A(GN)-C	15	1ø200/220	50/60	4	1150/1600	連續Continuous	0.75/1.1	1.12/0.93	0.18/0.18	1.2/450V
3IK15A(GN)-CE	15	1ø230/240	50	4	1300/1300	連續Continuous	1.06/1.06	1.14/1.13	0.17/0.17	1.2/450V



25W外型圖

25W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
4IK25A(GN)-A	25	1ø100/110	50/60	4	1250/1600	連續Continuous	1.4/1.4	1.93/1.51	0.57/0.45	6/300V
4IK25A(GN)-C	25	1ø200/220	50/60	4	1250/1600	連續Continuous	1.57/1.38	1.91/1.52	0.28/0.25	1.5/450V
4IK25A(GN)-CE	25	1ø230/240	50	4	1300/1300	連續Continuous	1.38/1.55	1.9/1.86	0.25/0.24	1.5/450V
4IK25A(GN)-S	25	3ø220	50/60	4	1300/1550	連續Continuous	5.12/4.04	1.89/1.56	0.22/0.19	-
4IK25A(GN)-U	25	3ø380	50/60	4	1200/1350	連續Continuous	3.96/2.97	2.04/1.79	0.11/0.11	-

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

減速機  
SPEED REDUCER

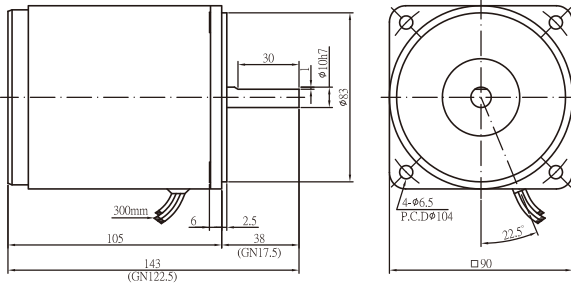
零組件類  
COMPONENTS



# IK Series INDUCTION MOTOR, LEAD-WIRE TYPE-IP22

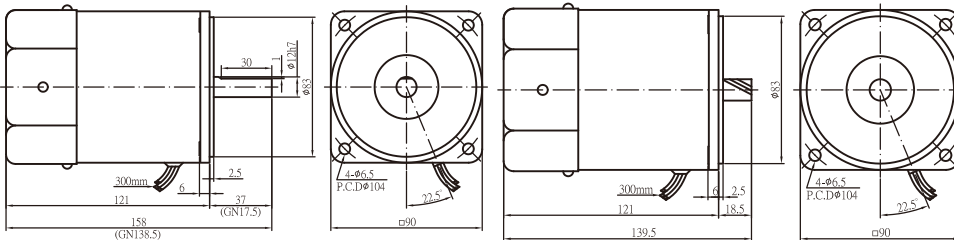
感應式馬達 導線式-防護等級IP22

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



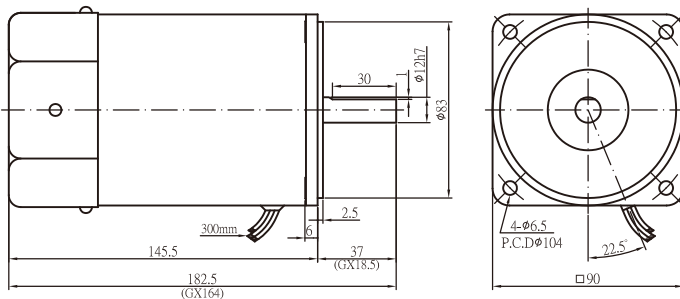
40W外型圖

40W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK40A(GN)-A	40	1φ100/110	50/60	4	1250/1600	連續Continuous	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40A(GN)-C	40	1φ200/220	50/60	4	1300/1650	連續Continuous	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40A(GN)-CE	40	1φ230/240	50	4	1350/1350	連續Continuous	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40A(GN)-S	40	3φ220	50/60	4	1400/1600	連續Continuous	10.51/7.83	2.83/2.4	0.29/0.27	-
5IK40A(GN)-U	40	3φ380	50/60	4	1350/1600	連續Continuous	9.25/6.68	2.85/2.45	0.16/0.15	-



60W/  
60W-GX外型圖

60W/60W-GX機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK60A(GN, GX)-AF	60	1φ100/110	50/60	4	1200/1650	連續Continuous	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60A(GN, GX)-CF	60	1φ200/220	50/60	4	1250/1600	連續Continuous	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60A(GN, GX)-CEF	60	1φ230/240	50	4	1300/1350	連續Continuous	4.14/5.22	4.56/4.4	0.56/0.55	4/450V
5IK60A(GN, GX)-SF	60	3φ220	50/60	4	1300/1550	連續Continuous	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60A(GN, GX)-UF	60	3φ380	50/60	4	1400/1550	連續Continuous	14.33/10.15	4.2/3.79	0.21/0.22	-



90W外型圖

90W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK90A(GX)-AF	90	1φ100/110	50/60	4	1300/1650	連續Continuous	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90A(GX)-CF	90	1φ200/220	50/60	4	1300/1650	連續Continuous	4.3/4.21	6.7/5.34	0.76/0.72	6/450V 5/450V
5IK90A(GX)-CEF	90	1φ230/240	50	4	1350/1350	連續Continuous	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90A(GX)-SF	90	3φ220	50/60	4	1400/1650	連續Continuous	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90A(GX)-UF	90	3φ380	50/60	4	1400/1650	連續Continuous	23.3/18.14	6.3/5.3	0.4/0.34	-

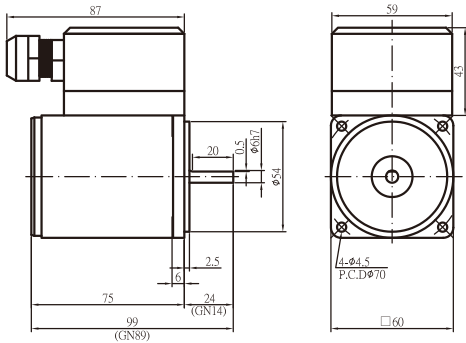
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

## IK Series

### INDUCTION MOTOR, TERMINAL BOX TYPE-IP54

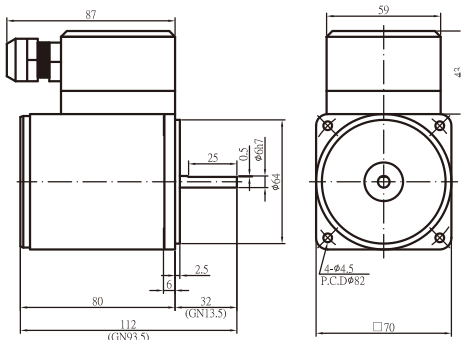
感應式馬達 接線盒式-防護等級IP54

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



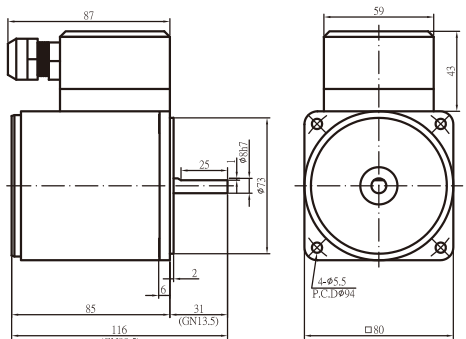
6W外型圖

6W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
2IK6A(GN)-AT	6	1φ100/110	50/60	4	1150/1400	連續Continuous	0.7/0.63	0.5/0.41	0.22/0.21	2.5/300V
2IK6A(GN)-CT	6	1φ200/220	50/60	4	1150/1550	連續Continuous	0.65/0.7	0.51/0.54	0.1/0.1	0.7/450V
2IK6A(GN)-CET	6	1φ230/240	50	4	1100/1200	連續Continuous	0.74/0.77	0.55/0.5	0.11/0.1	0.7/450V



15W外型圖

15W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
3IK15A(GN)-AT	15	1φ100/110	50/60	4	1150/1650	連續Continuous	0.88/1.04	1.22/0.91	0.36/0.35	5/300V
3IK15A(GN)-CT	15	1φ200/220	50/60	4	1150/1600	連續Continuous	0.75/1.1	1.12/0.93	0.18/0.18	1.2/450V
3IK15A(GN)-CET	15	1φ230/240	50	4	1300/1300	連續Continuous	1.06/1.06	1.14/1.13	0.17/0.17	1.2/450V



25W外型圖

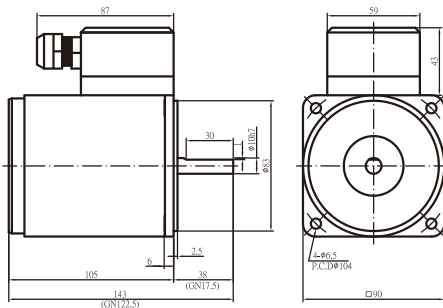
25W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
4IK25A(GN)-AT	25	1φ100/110	50/60	4	1250/1600	連續Continuous	1.4/1.4	1.93/1.51	0.57/0.45	6/300V
4IK25A(GN)-CT	25	1φ200/220	50/60	4	1250/1600	連續Continuous	1.57/1.38	1.91/1.52	0.28/0.25	1.5/450V
4IK25A(GN)-CET	25	1φ230/240	50	4	1300/1300	連續Continuous	1.38/1.55	1.9/1.86	0.25/0.24	1.5/450V
4IK25A(GN)-ST	25	3φ220	50/60	4	1300/1550	連續Continuous	5.12/4.04	1.89/1.56	0.22/0.19	-
4IK25A(GN)-UT	25	3φ380	50/60	4	1200/1350	連續Continuous	3.96/2.97	2.04/1.79	0.11/0.11	-

## IK Series

# INDUCTION MOTOR, TERMINAL BOX TYPE-IP54

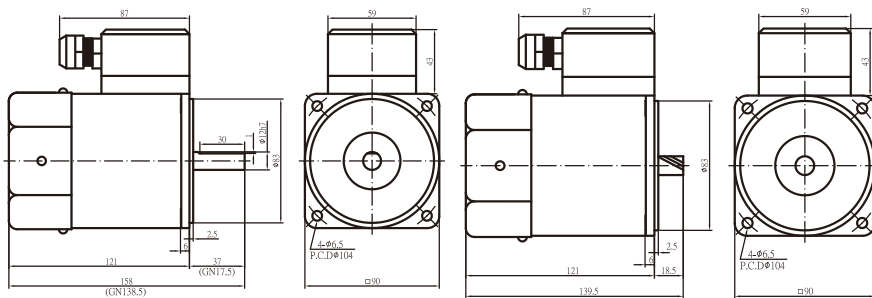
感應式馬達 接線盒式-防護等級IP54

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



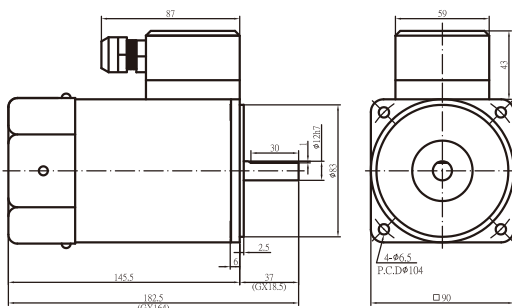
40W外型圖

40W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK40A(GN)-AT	40	1φ100/110	50/60	4	1250/1600	連續Continuous	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40A(GN)-CT	40	1φ200/220	50/60	4	1300/1650	連續Continuous	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40A(GN)-CET	40	1φ230/240	50	4	1350/1350	連續Continuous	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40A(GN)-ST	40	3φ220	50/60	4	1400/1600	連續Continuous	10.51/7.83	2.83/2.4	0.29/0.27	-
5IK40A(GN)-UT	40	3φ380	50/60	4	1350/1600	連續Continuous	9.25/6.68	2.85/2.45	0.16/0.15	-



60W/  
60W-GX外型圖

60W/60W-GX機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK60A(GN, GX)-AFT	60	1φ100/110	50/60	4	1200/1650	連續Continuous	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60A(GN, GX)-CFT	60	1φ200/220	50/60	4	1250/1600	連續Continuous	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60A(GN, GX)-CEFT	60	1φ230/240	50	4	1350/1350	連續Continuous	4.14/5.22	4.56/4.4	0.56/0.55	4/450V
5IK60A(GN, GX)-SFT	60	3φ220	50/60	4	1300/1550	連續Continuous	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60A(GN, GX)-UFT	60	3φ380	50/60	4	1400/1550	連續Continuous	14.33/10.15	4.2/3.79	0.21/0.22	-



90W外型圖

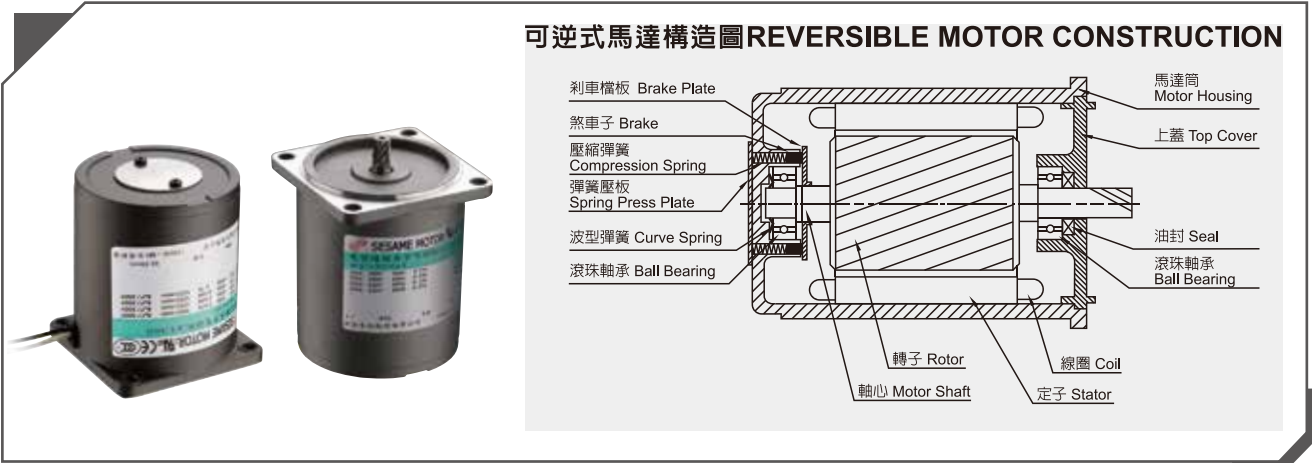
90W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK90A(GX)-AFT	90	1φ100/110	50/60	4	1300/1650	連續Continuous	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90A(GX)-CFT	90	1φ200/220	50/60	4	1300/1650	連續Continuous	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90A(GX)-CEFT	90	1φ230/240	50	4	1350/1350	連續Continuous	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90A(GX)-SFT	90	3φ220	50/60	4	1400/1650	連續Continuous	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90A(GX)-UFT	90	3φ380	50/60	4	1400/1650	連續Continuous	23.3/18.14	6.3/5.3	0.4/0.3	-

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

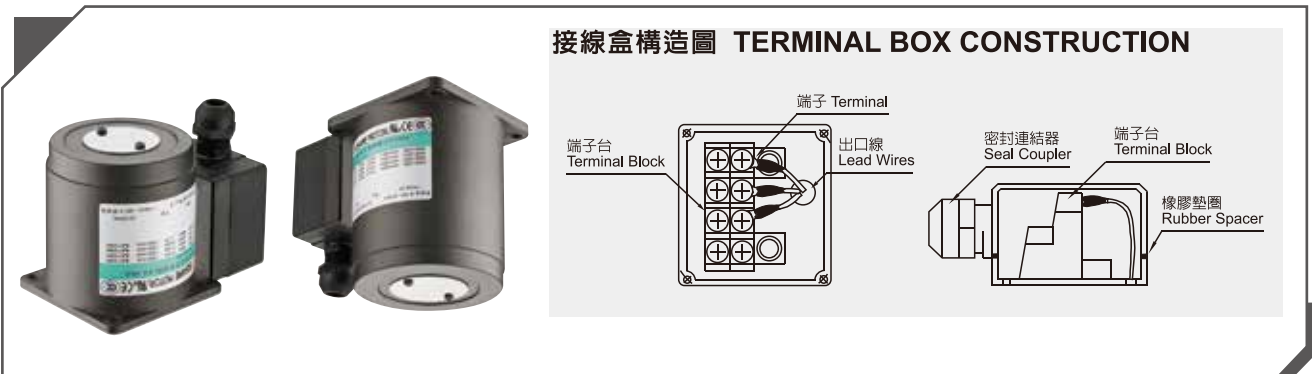
## RK Series REVERSIBLE MOTOR 可逆式馬達

- 30分鐘額定 Rated Time: 30 minutes
- 內建簡易煞車系統 Built-in Easy Brake System
- 頻繁正逆轉使用 Frequent Forward/Reverse Usage
- 過轉小、具微小保持力 Few Over Run, Minor Holding Force

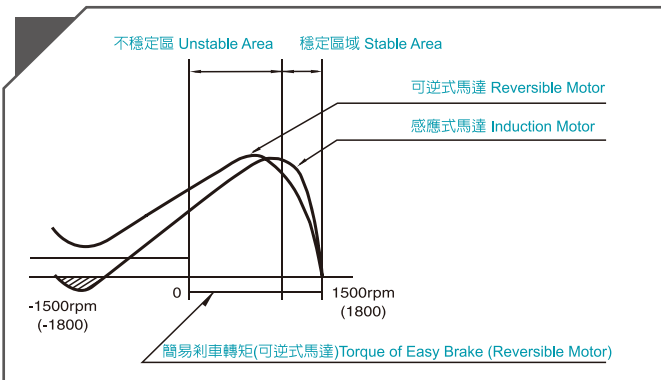
### 可逆式額定轉運型，導線式 REVERSIBLE MOTOR, LEAD WIRE TYPE (6W-60W)



### 可逆式額定轉運型，接線盒式 REVERSIBLE MOTOR, TERMINAL BOX TYPE (6W-60W)



### 可逆式馬達特性圖 REVERSIBLE MOTOR CURVE



備註：4極馬達在頻率50Hz時，同步轉速為1500rpm。在60Hz時為1800rpm。  
Notes: At 50Hz, a 4-Pole motor has synchronous turning speed of 1500rpm, 1800rpm at 60Hz.

### 可逆式馬達之煞車轉矩及過轉數 BRAKE TORQUE & OVERRUNS

出力 (W) OUTPUT	煞車轉矩 (kg.cm) BRAKE TORQUE	過轉數 (TURNS) OVERRUNS
6	0.59	4-6
15	1.27	4-6
25	1.47	4-6
40	3.92	4-6
60	3.92	4-6

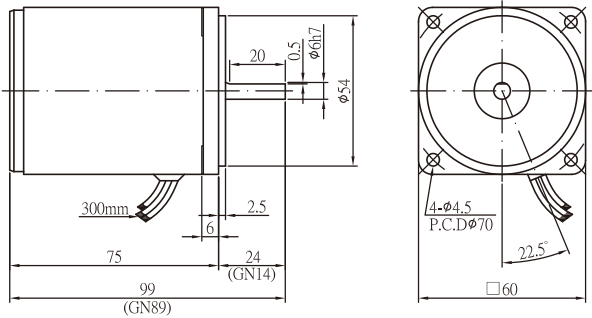
※ 僅供參考 FOR REFERENCE ONLY



# RK Series REVERSIBLE MOTOR, LEAD WIRE TYPE-IP22

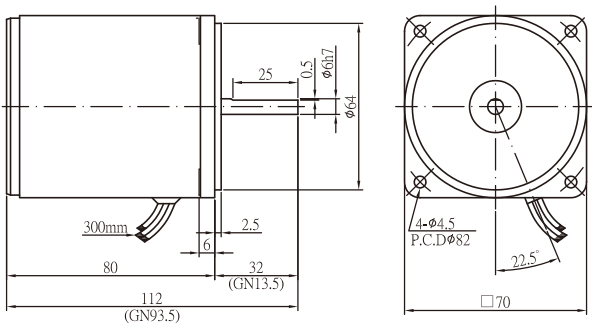
可逆式馬達 導線式-防護等級IP22

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



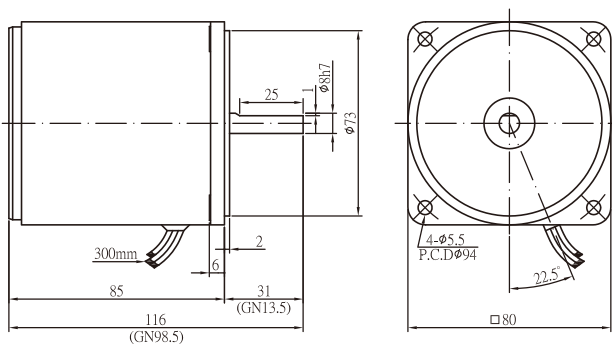
6W外型圖

6W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
2RK6A(GN)-A	6	1ø100/110	50/60	4	900/1150	30分鐘/minutes	0.72/0.7	0.57/0.51	0.24/0.25	3.3/300V 3/300V
2RK6A(GN)-C	6	1ø200/220	50/60	4	1000/1300	30分鐘/minutes	0.72/0.8	0.55/0.45	0.13/0.15	1/450V
2RK6A(GN)-CE	6	1ø230/240	50	4	1100/1050	30分鐘/minutes	0.95/0.94	0.53/0.55	0.14/0.14	1/450V



15W外型圖

15W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
3RK15A(GN)-A	15	1ø100/110	50/60	4	1200/1450	30分鐘/minutes	1.17/1.24	1.16/0.95	0.37/0.44	6/300V
3RK15A(GN)-C	15	1ø200/220	50/60	4	1200/1450	30分鐘/minutes	0.96/1.34	0.96/0.97	0.20/0.23	1.5/450V
3RK15A(GN)-CE	15	1ø230/240	50	4	1250	30分鐘/minutes	1.36/1.31	1.14/1.19	0.19/0.21	1.5/450V



25W外型圖

25W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
4RK25A(GN)-A	25	1ø100/110	50/60	4	1250/1650	30分鐘/minutes	1.65/1.92	1.95/1.48	0.56/0.51	8/300V
4RK25A(GN)-C	25	1ø200/220	50/60	4	1300/1600	30分鐘/minutes	1.98/1.94	1.89/1.54	0.29/0.30	2.5/450V 2/450V
4RK25A(GN)-CE	25	1ø230/240	50	4	1350/1350	30分鐘/minutes	2.22/2.19	1.8/1.82	0.25/0.25	2/450V

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

# MOTOR AND SPEED REDUCER

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

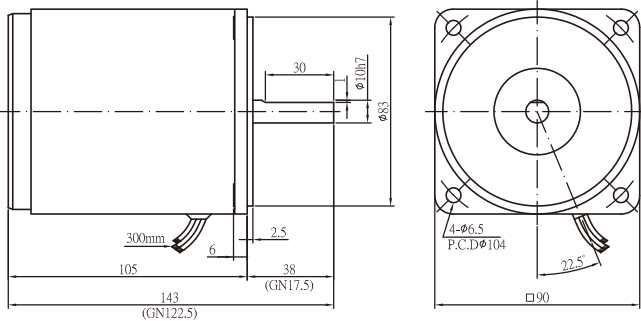
煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

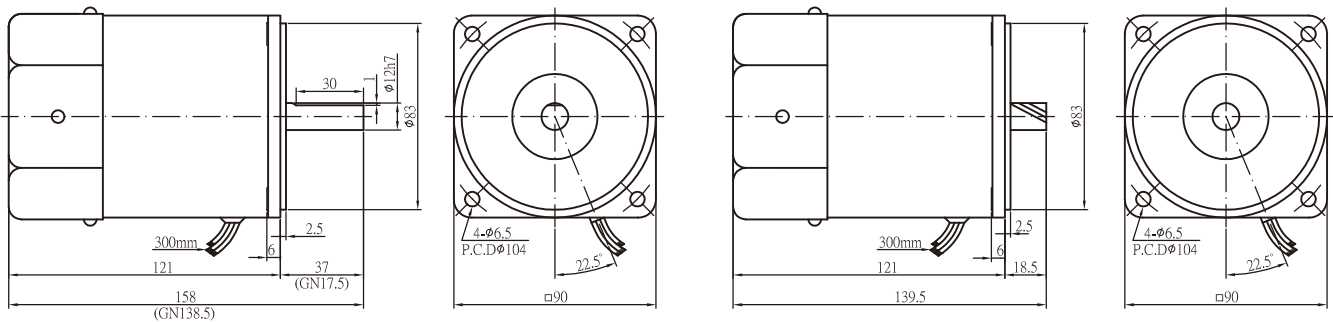
減速機  
SPEED REDUCER

零組件類  
COMPONENTS



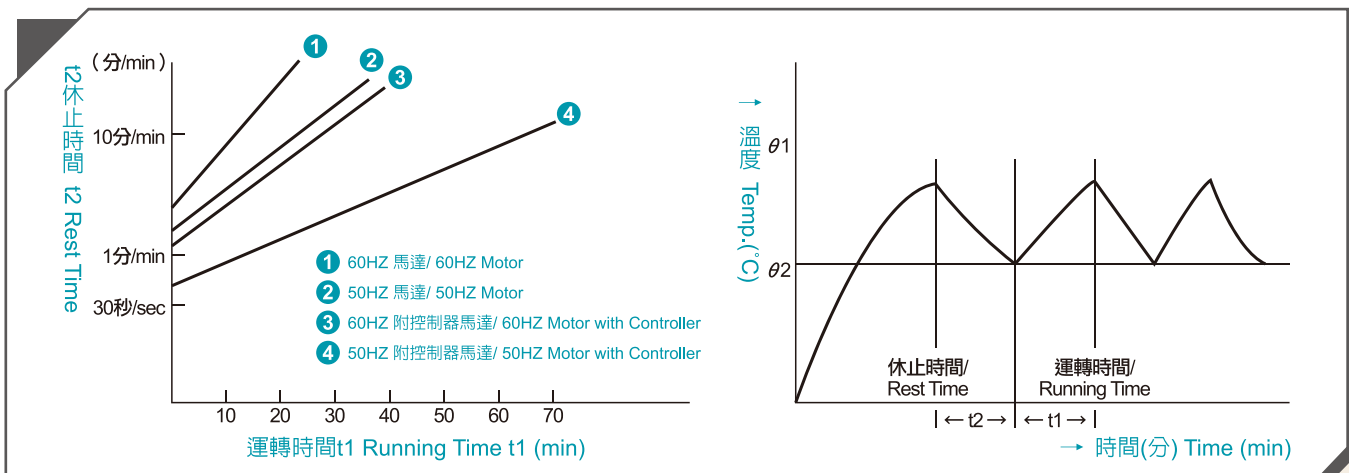
40W外型圖

40W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5RK40A(GN)-A	40	1φ100/110	50/60	4	1050/1500	30分鐘/minutes	2.43/3.1	2.83/2.64	0.99/1.01	12/300V
5RK40A(GN)-C	40	1φ200/220	50/60	4	1150/1500	30分鐘/minutes	3.76/2.73	3.35/2.64	0.54/0.53	4/450V 3/350V
5RK40A(GN)-CE	40	1φ230/240	50	4	1150/1300	30分鐘/minutes	2.41/3.17	3.36/3.04	0.49/0.44	3/450V



60W/60W-GX外型圖

60W/60W-GX機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5RK60A(GN, GX)-AF	60	1φ100/110	50/60	4	1300/1600	30分鐘/minutes	3.08/4.03	4.82/3.78	1.34/1.25	16/300V
5RK60A(GN, GX)-CF	60	1φ200/220	50/60	4	1250/1600	30分鐘/minutes	2.38/2.97	4.68/3.68	0.75/0.73	4/450V
5RK60A(GN, GX)-CEF	60	1φ230/240	50	4	1300	30分鐘/minutes	4.33/4.72	4.59/4.6	0.57/0.63	4/450V



## 說明 REMARKS :

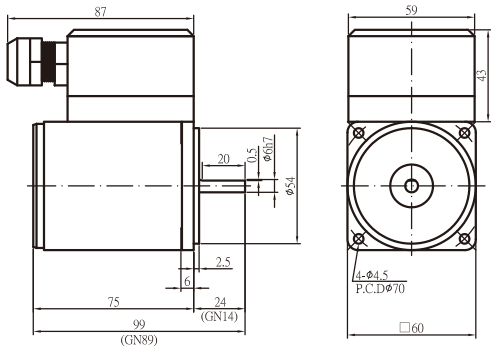
- 所謂「額定時間」是指馬達連續運轉的時間達到此數據時，就必須要先停止運轉，待冷卻後，才可繼續使用，否則馬達有可能會因溫度過高而燒毀。  
"Rated Time" indicates the time limit to which the motor must stop running after its continuous operation, and resume to run only after cooling down. Otherwise, the motor may burn down due to overheating.
- 可逆式馬達也可依上列圖示方式使用。 Reversible motors can also be used according to the methods shown above.

# RK Series

## REVERSIBLE MOTOR, TERMINAL BOX TYPE-IP54

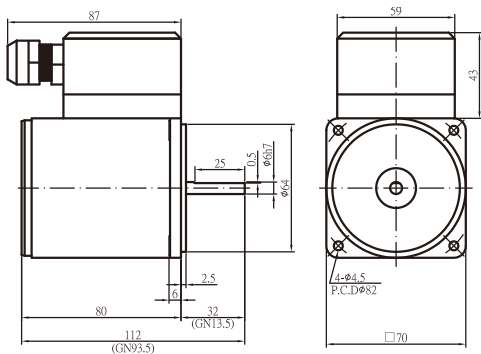
### 可逆式馬達 接線盒式-防護等級IP54

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



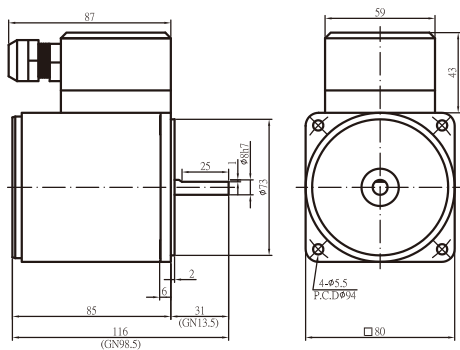
6W外型圖

6W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(µF) CAPACITY
2RK6A(GN)-AT	6	1ø100/110	50/60	4	900/1150	30分鐘/minutes	0.72/0.7	0.57/0.51	0.24/0.25	3.3/300V 3/300V
2RK6A(GN)-CT	6	1ø200/220	50/60	4	1000/1300	30分鐘/minutes	0.72/0.8	0.55/0.45	0.13/0.15	1/450V
2RK6A(GN)-CET	6	1ø230/240	50	4	1100/1050	30分鐘/minutes	0.95/0.94	0.53/0.55	0.14/0.14	1/450V



15W外型圖

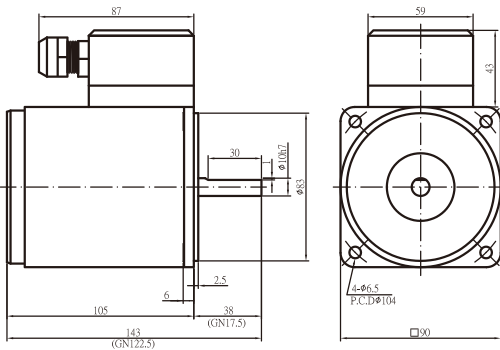
15W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(µF) CAPACITY
3RK15A(GN)-AT	15	1ø100/110	50/60	4	1200/1450	30分鐘/minutes	1.17/1.24	1.16/0.95	0.37/0.44	6/300V
3RK15A(GN)-CT	15	1ø200/220	50/60	4	1200/1450	30分鐘/minutes	0.96/1.34	0.96/0.97	0.20/0.23	1.5/450V
3RK15A(GN)-CET	15	1ø230/240	50	4	1250	30分鐘/minutes	1.36/1.31	1.14/1.19	0.19/0.21	1.5/450V



25W外型圖

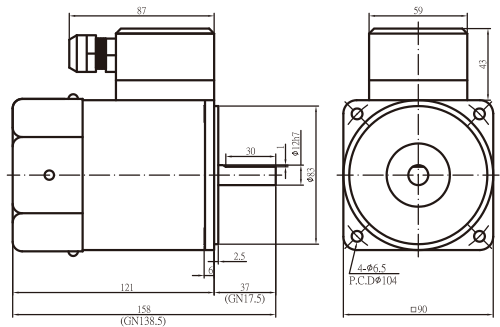
25W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(µF) CAPACITY
4RK25A(GN)-AT	25	1ø100/110	50/60	4	1250/1650	30分鐘/minutes	1.65/1.92	1.95/1.48	0.56/0.51	8/300V
4RK25A(GN)-CT	25	1ø200/220	50/60	4	1300/1600	30分鐘/minutes	1.98/1.94	1.89/1.54	0.29/0.3	2.5/450V 2/450V
4RK25A(GN)-CET	25	1ø230/240	50	4	1350/1350	30分鐘/minutes	2.22/2.19	1.8/1.82	0.25/0.25	2/450V

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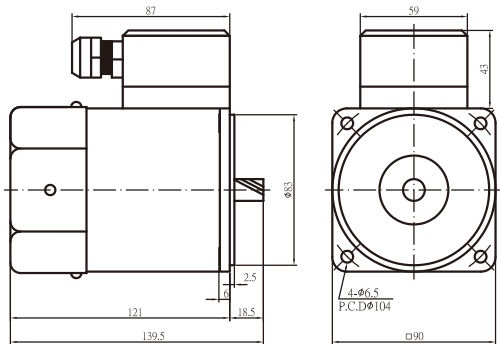


40W外型圖

40W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(µF) CAPACITY
5RK40A(GN)-AT	40	1ø100/110	50/60	4	1050/1500	30分鐘/minutes	2.43/3.1	2.83/2.64	0.99/1.01	12/300V
5RK40A(GN)-CT	40	1ø200/220	50/60	4	1150/1500	30分鐘/minutes	3.76/2.73	3.35/2.64	0.54/0.53	4/450V 3/450V
5RK40A(GN)-CET	40	1ø230/240	50	4	1150/1300	30分鐘/minutes	2.41/3.17	3.36/3.04	0.49/0.44	3/450V



60W外型圖



60W-GX外型圖

60W/60W-GX機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(µF) CAPACITY
5RK60A(GN, GX)-AFT	60	1ø100/110	50/60	4	1300/1600	30分鐘/minutes	3.08/4.03	4.82/3.78	1.34/1.25	16/300V
5RK60A(GN, GX)-CFT	60	1ø200/220	50/60	4	1250/1600	30分鐘/minutes	2.38/2.97	4.68/3.68	0.75/0.73	4/450V
5RK60A(GN, GX)-CEFT	60	1ø230/240	50	4	1300	30分鐘/minutes	4.33/4.72	4.59/4.6	0.57/0.63	4/450V

## 說明 REMARKS :

- 所謂「額定時間」是指馬達連續運轉的時間達到此數據時，就必須要先停止運轉，待冷卻後，才可繼續使用，否則馬達有可能會因溫度過高而燒毀。  
"Rated Time" indicates the time limit to which the motor must stop running after its continuous operation, and resume to run only after cooling down. Otherwise, the motor may be burn down to overheating.
- 可逆式馬達(接線盒式)之使用方式與可逆式馬達(導線式)相同。  
The usage of the reversible motor (terminal box type) is the same as the reversible motor (lead-wire type).



# SPEED CONTROLLED MOTOR

## 速度控制型馬達

- 配線簡單，速度控制容易 Easy Wiring and Speed Control
- 內建電子式煞車回路，具瞬時煞車功能 Built-in Electronic Brake Circuits for Instant Braking
- 速度變化範圍寬廣 Wide Range of Variable Speeds
- 具備並列運轉之功能 Parallel Rotation Performance
- 高應答性、高安定性之速度變化 High-Responsive and Great Stability in Speed Control
- 能與其他控制系統連結 Linkable to Other Control Systems

### ● 組合型 ASSEMBLED TYPE (US Series)



控制用迴路、運轉電容及可變電阻等均組合在一個控制箱內，並採用連結器與馬達連結，只要接上電源即可使用。  
Circuits, capacitor, and variable resistor are assembled into one control box, which is attached to the motor via connector. Ready-to-use.

- ◎ 出力6W-90W
- ◎ 馬達搭配組合型控制器使用
- ◎ Output: 6W-90W
- ◎ Motor should be used along with an assembled type controller.

### ● 分離型 SEPARATED TYPE (SS Series)

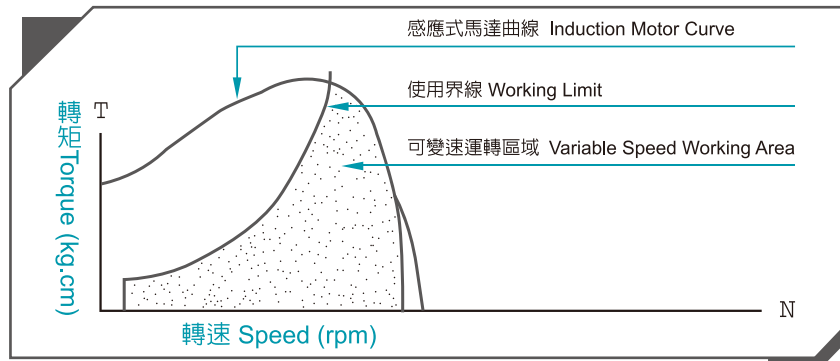


附轉速發電機之感應式馬達與可逆式馬達，可依據用途及需求而採用不同的配線方式與控制器連結。  
According to different purpose and needs, induction and reversible motors equipped with generators will adopt various wiring methods and controller types.

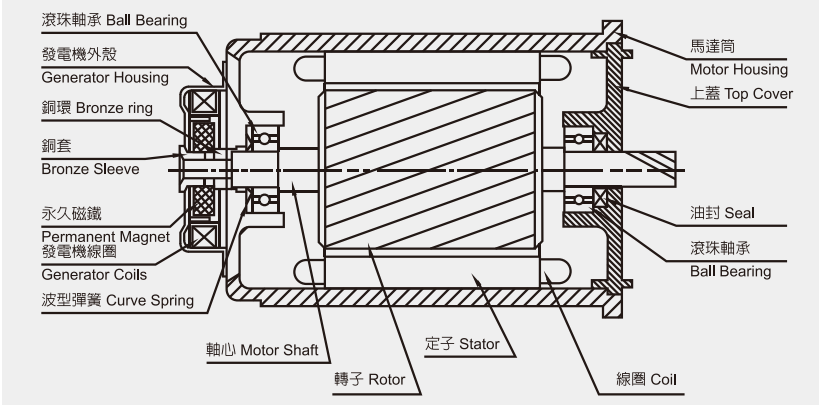
- ◎ 變速、正逆轉
- ◎ 瞬時煞車
- ◎ 並列運轉
- ◎ 與其他系統連結
- ◎ 出力6W-90W
- ◎ Variable Speed, Forward/Reverse
- ◎ Instant Braking
- ◎ Parallel Rotation
- ◎ Connectable to Other Systems
- ◎ Output: 6W-90W

### ● 轉速-轉矩特性

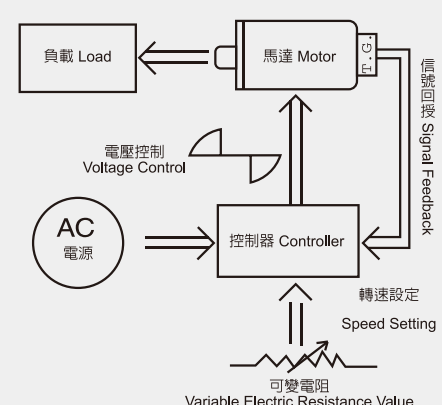
#### SPEED-TORQUE CURVE



### 速度控制型馬達構造圖 SPEED CONTROLLED MOTOR CONSTRUCTION



### 控制原理 CONTROL PRINCIPLES

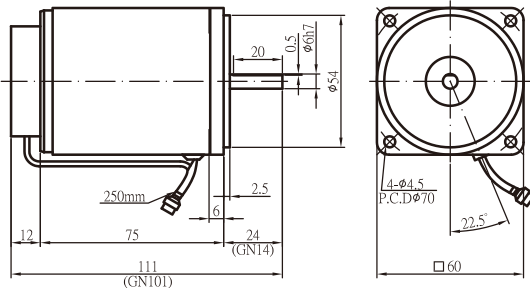


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- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm

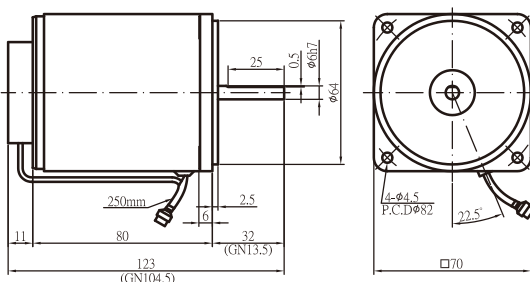
## ASSEMBLED TYPE, VARIABLE SPEED, INDUCTION/REVERSIBLE MOTOR

組合型無段變速馬達 感應式/可逆式



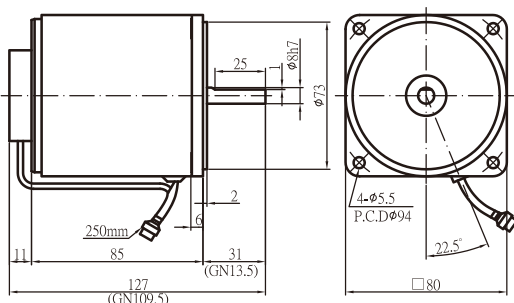
6W外型圖

6W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	M206-(0/4)01	連續Continuous	6	100/110	50/60	4	0.22/0.21	90~1400/90~1700	0.7/0.63	0.4/0.55	0.72/0.5
	M206-(0/4)02	連續Continuous	6	200/220	50/60	4	0.1/0.1	90~1400/90~1700	0.65/0.7	0.44/0.66	0.6/0.7
	M206-(0/4)02E	連續Continuous	6	230/240	50	4	0.11/0.1	90~1400	0.74/0.77	0.39/0.52	0.72/0.8
REVERSIBLE 可逆式	M206-(0/4)11	30分鐘/minutes	6	100/110	50/60	4	0.24/0.25	90~1400/90~1700	0.72/0.7	0.3/0.49	0.6/0.52
	M206-(0/4)12	30分鐘/minutes	6	200/220	50/60	4	0.13/0.15	90~1400/90~1700	0.72/0.8	0.26/0.52	0.67/0.7
	M206-(0/4)12E	30分鐘/minutes	6	230/240	50	4	0.14/0.14	90~1400	0.95/0.94	0.36/0.31	0.8/0.8



15W外型圖

15W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	M315-(0/4)01	連續Continuous	15	100/110	50/60	4	0.36/0.35	90~1400/90~1700	0.88/1.04	0.9/1.5	1.0/1.1
	M315-(0/4)02	連續Continuous	15	200/220	50/60	4	0.18/0.18	90~1400/90~1700	0.75/1.1	1.1/1.5	1.0/1.1
	M315-(0/4)02E	連續Continuous	15	230/240	50	4	0.17/0.17	90~1400	1.06/1.06	1.40/1.32	1.02/1.25
REVERSIBLE 可逆式	M315-(0/4)11	30分鐘/minutes	15	100/110	50/60	4	0.37/0.44	90~1400/90~1700	1.17/1.24	1.1/1.2	0.9/0.85
	M315-(0/4)12	30分鐘/minutes	15	200/220	50/60	4	0.20/0.23	90~1400/90~1700	0.96/1.34	1.4/1.2	0.9/0.85
	M315-(0/4)12E	30分鐘/minutes	15	230/240	50	4	0.19/0.21	90~1400	1.36/1.31	1.52/1.4	1.20/1.10



25W外型圖

25W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	M425-(0/4)01	連續Continuous	25	100/110	50/60	4	0.57/0.45	90~1400/90~1700	1.4/1.4	2.17/2.5	1.4/1.4
	M425-(0/4)02	連續Continuous	25	200/220	50/60	4	0.28/0.25	90~1400/90~1700	1.57/1.38	2.1/2.4	1.6/1.3
	M425-(0/4)02E	連續Continuous	25	230/240	50	4	0.25/0.24	90~1400	1.38/1.55	2.2/2.4	1.5/1.7
REVERSIBLE 可逆式	M425-(0/4)11	30分鐘/minutes	25	100/110	50/60	4	0.56/0.51	90~1400/90~1700	1.65/1.92	2.2/2.9	1.5/1.9
	M425-(0/4)12	30分鐘/minutes	25	200/220	50/60	4	0.29/0.3	90~1400/90~1700	1.98/1.94	2.4/2.6	1.9/1.8
	M425-(0/4)12E	30分鐘/minutes	25	230/240	50	4	0.25/0.25	90~1400	2.22/2.19	2.7/2.9	2.24/2.3

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

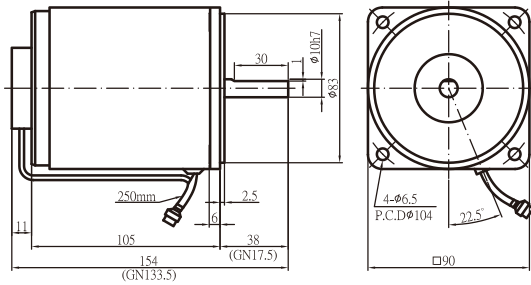
減速機  
SPEED REDUCER

零組件類  
COMPONENTS

# ASSEMBLED TYPE, VARIABLE SPEED, INDUCTION/REVERSIBLE MOTOR

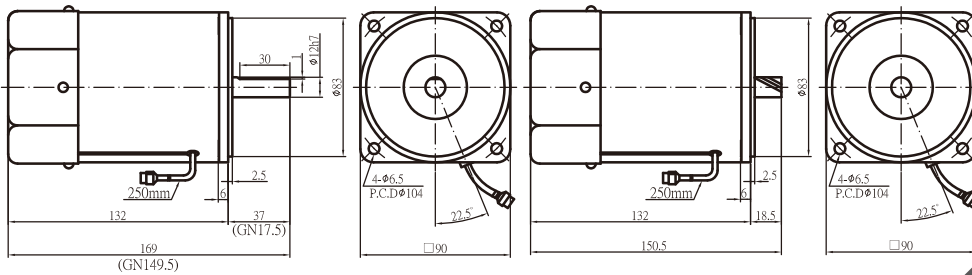
組合型無段變速馬達 感應式/可逆式

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



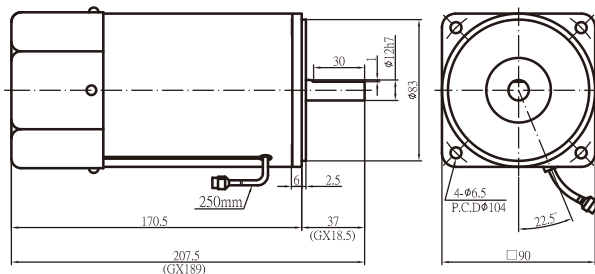
40W外型圖

40W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	M540-(0/4)01	連續Continuous	40	100/110	50/60	4	0.87/0.76	90~1400/90~1700	2.14/2.66	3.18/4.2	2.2/2.8
	M540-(0/4)02	連續Continuous	40	200/220	50/60	4	0.4/0.34	90~1400/90~1700	1.75/2.17	3.6/4.2	1.8/2.1
	M540-(0/4)02E	連續Continuous	40	230/240	50	4	0.32/0.32	90~1400	2.3/2.58	4.4/4.6	2.4/2.6
REVERSIBLE 可逆式	M540-(0/4)11	30分鐘/minutes	40	100/110	50/60	4	0.99/1.01	90~1400/90~1700	2.43/3.1	2.8/3.4	1.9/2.4
	M540-(0/4)12	30分鐘/minutes	40	200/220	50/60	4	0.54/0.53	90~1400/90~1700	3.76/2.37	3/3.4	3/2.2
	M540-(0/4)12E	30分鐘/minutes	40	230/240	50	4	0.49/0.44	90~1400	2.4/3.17	3/3.9	2/2.6



60W/60W-GX外型圖

60W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	M560-(0/4/6)01	連續Continuous	60	100/110	50/60	4	1.8/1.12	90~1400/90~1700	2.6/2.94	5.6/6.9	3.5/4.0
	M560-(0/4/6)02	連續Continuous	60	200/220	50/60	4	0.64/0.54	90~1400/90~1700	3.62/4.41	5.9/6.9	3.6/4.3
	M560-(0/4/6)02E	連續Continuous	60	230/240	50	4	0.56/0.55	90~1400	4.14/5.22	6.17/7.2	4.37/5.2
REVERSIBLE 可逆式	M560-(0/4/6)11	30分鐘/minutes	60	100/110	50/60	4	1.34/1.25	90~1400/90~1700	3.08/4.03	4.6/5.6	3.2/3.3
	M560-(0/4/6)12	30分鐘/minutes	60	200/220	50/60	4	0.75/0.73	90~1400/90~1700	2.38/2.97	5.5/5.8	2.3/2.5
	M560-(0/4/6)12E	30分鐘/minutes	60	230/240	50	4	0.57/0.63	90~1400	4.33/4.72	6.02/5.6	4.73/4.10



90W外型圖

■ 90W之GN為輕負載 The GN of 90W denotes light loading

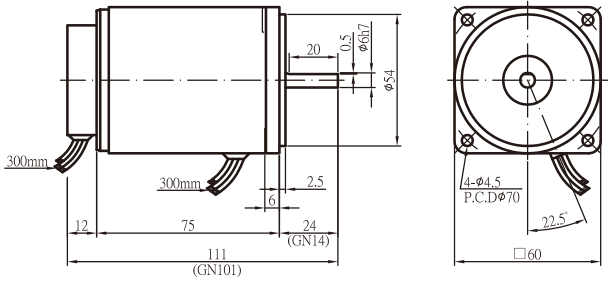
90W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	M590-(0/6)01	連續Continuous	90	100/110	50/60	4	1.5/1.41	90~1400/90~1700	4.76/5.86	8.4/10.2	5/6.1
	M590-(0/6)02	連續Continuous	90	200/220	50/60	4	0.76/0.72	90~1400/90~1700	4.3/4.21	8/8.7	5.7/6.0
	M590-(0/6)02E	連續Continuous	90	230/240	50	4	0.66/0.68	90~1400	4.93/5.08	9.8/10.2	5.2/5.6

備註 NOTES : 組合型無段變速馬達(可逆式)之使用方式與可逆式馬達(導線式)相同。  
The Assembled Type, Variable Speed Reversible Motor is used in the same way as the Reversible Motor, Lead-Wire Type.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

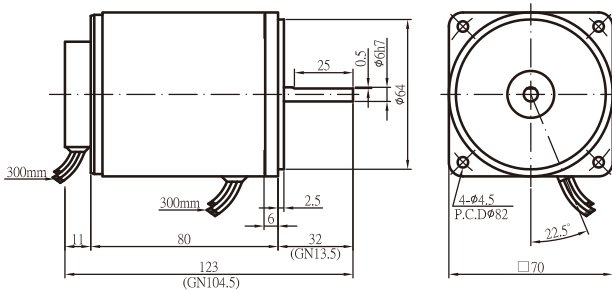
- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm

## SEPARATED TYPE, VARIABLE SPEED, INDUCTION/REVERSIBLE MOTOR-IP22 分離型無段變速馬達 感應式/可逆式-防護等級IP22



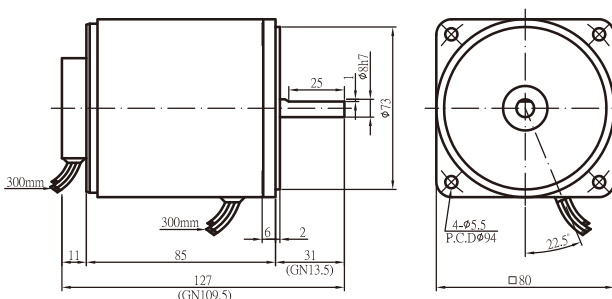
6W外型圖

6W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	2IK6RA(GN)-A	連續Continuous	6	100/110	50/60	4	0.22/0.21	90~1400/90~1700	0.7/0.63	0.4/0.55	0.72/0.5
	2IK6RA(GN)-C	連續Continuous	6	200/220	50/60	4	0.1/0.1	90~1400/90~1700	0.65/0.7	0.44/0.66	0.6/0.7
	2IK6RA(GN)-CE	連續Continuous	6	230/240	50	4	0.11/0.1	90~1400	0.74/0.77	0.39/0.52	0.72/0.8
REVERSIBLE 可逆式	2RK6RA(GN)-A	30分鐘/minutes	6	100/110	50/60	4	0.24/0.25	90~1400/90~1700	0.72/0.7	0.3/0.49	0.6/0.52
	2RK6RA(GN)-C	30分鐘/minutes	6	200/220	50/60	4	0.13/0.15	90~1400/90~1700	0.72/0.8	0.26/0.52	0.67/0.7
	2RK6RA(GN)-CE	30分鐘/minutes	6	230/240	50	4	0.14/0.14	90~1400	0.95/0.94	0.36/0.31	0.8/0.8



15W外型圖

15W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	3IK15RA(GN)-A	連續Continuous	15	100/110	50/60	4	0.36/0.35	90~1400/90~1700	0.89/1.24	0.9/1.5	1.0/1.1
	3IK15RA(GN)-C	連續Continuous	15	200/220	50/60	4	0.18/0.18	90~1400/90~1700	0.75/1.10	1.1/1.5	1.0/1.1
	3IK15RA(GN)-CE	連續Continuous	15	230/240	50	4	0.17/0.17	90~1400	1.06/1.06	1.40/1.32	1.02/1.25
REVERSIBLE 可逆式	3RK15RA(GN)-A	30分鐘/minutes	15	100/110	50/60	4	0.37/0.44	90~1400/90~1700	1.17/1.24	1.1/1.2	0.9/0.85
	3RK15RA(GN)-C	30分鐘/minutes	15	200/220	50/60	4	0.20/0.23	90~1400/90~1700	0.96/1.34	1.4/1.2	0.9/0.85
	3RK15RA(GN)-CE	30分鐘/minutes	15	230/240	50	4	0.19/0.21	90~1400	1.36/1.31	1.5/1.4	1.20/1.15



25W外型圖

25W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 連續運轉式	4IK25RA(GN)-A	連續Continuous	25	100/110	50/60	4	0.57/0.45	90~1400/90~1700	1.4/1.4	2.17/2.5	1.4/1.4
	4IK25RA(GN)-C	連續Continuous	25	200/220	50/60	4	0.28/0.25	90~1400/90~1700	1.57/1.38	2.1/2.4	1.6/1.3
	4IK25RA(GN)-CE	連續Continuous	25	230/240	50	4	0.25/0.24	90~1400	1.38/1.55	2.2/2.4	1.5/1.7
REVERSIBLE 可逆式	4RK25RA(GN)-A	30分鐘/minutes	25	100/110	50/60	4	0.56/0.51	90~1400/90~1700	1.65/1.92	2.2/2.9	1.5/1.9
	4RK25RA(GN)-C	30分鐘/minutes	25	200/220	50/60	4	0.29/0.3	90~1400/90~1700	1.98/1.94	2.4/2.6	1.9/1.8
	4RK25RA(GN)-CE	30分鐘/minutes	25	230/240	50	4	0.25/0.25	90~1400	2.22/2.19	2.7/2.9	2.24/2.3

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

減速機  
SPEED REDUCER

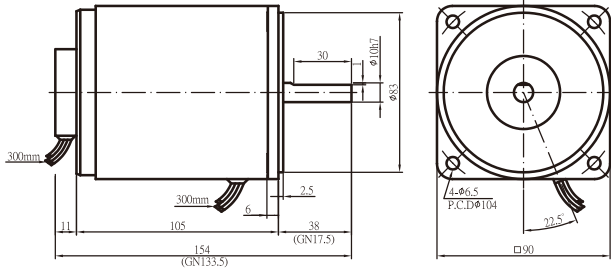
零組件類  
COMPONENTS



# SEPARATED TYPE, VARIABLE SPEED, INDUCTION/REVERSIBLE MOTOR -IP22

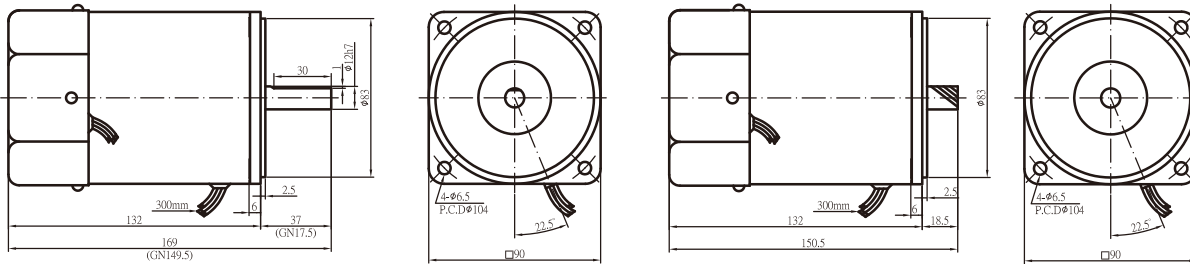
分離型無段變速馬達 感應式/可逆式-防護等級IP22

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



40W外型圖

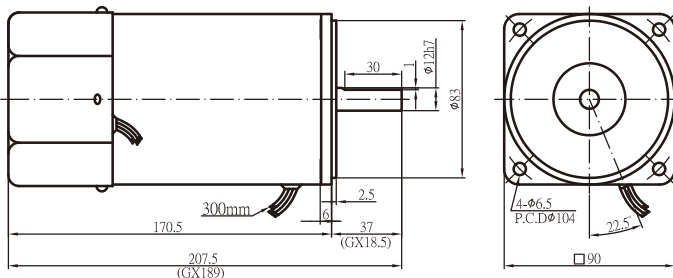
40W機型 TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 感應式	5K40RA(GN)-A	連續Continuous	40	100/110	50/60	4	0.87/0.76	90~1400/90~1700	2.14/2.66	3.18/4.2	2.2/2.8
	5K40RA(GN)-C	連續Continuous	40	200/220	50/60	4	0.4/0.34	90~1400/90~1700	1.75/2.17	3.6/4.2	1.8/2.1
	5K40RA(GN)-CE	連續Continuous	40	230/240	50	4	0.32/0.32	90~1400	2.3/2.58	4.4/4.6	2.4/2.6
REVERSIBLE 可逆式	5RK40RA(GN)-A	30分鐘/minutes	40	100/110	50/60	4	0.99/1.01	90~1400/90~1700	2.43/3.1	2.8/3.4	1.9/2.4
	5RK40RA(GN)-C	30分鐘/minutes	40	200/220	50/60	4	0.54/0.53	90~1400/90~1700	3.76/2.37	3/3.4	3/2.2
	5RK40RA(GN)-CE	30分鐘/minutes	40	230/240	50	4	0.49/0.44	90~1400	2.41/3.17	3/3.9	2/2.6



■ 60W之GN為輕負載 The GN of 60W denotes light loading

60W/60W-GX外型圖

60W/60W-GX 機型TYPE	機種名稱 MODEL	額定時間 RATED TIME	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS	
										1200rpm	90rpm
INDUCTION 感應式	5K60RA(GN)-AF 5K60RGX-AF	連續Continuous	60	100/110	50/60	4	1.80/1.12	90~1400/90~1700	2.60/2.94	5.6/6.9	3.5/4.0
	5K60RA(GN)-CF 5K60RGX-CF	連續Continuous	60	200/220	50/60	4	0.64/0.54	90~1400/90~1700	3.62/4.41	5.9/6.9	4.6/4.4
	5K60RA(GN)-CEF 5K60RGX-CEF	連續Continuous	60	230/240	50	4	0.56/0.55	90~1400	4.14/5.22	6.17/7.2	4.37/5.2
	5RK60RA(GN)-AF 5RK60RGX-AF	30分鐘/minutes	60	100/110	50/60	4	1.34/1.25	90~1400/90~1700	3.08/4.03	4.60/5.60	3.20/3.30
REVERSIBLE 可逆式	5RK60RA(GN)-CF 5RK60RGX-CF	30分鐘/minutes	60	200/220	50/60	4	0.75/0.73	90~1400/90~1700	2.38/2.97	5.5/5.8	2.3/2.5
	5RK60RA(GN)-CEF 5RK60RGX-CEF	30分鐘/minutes	60	230/240	50	4	0.57/0.63	90~1400	4.33/4.72	6.02/5.60	4.73/4.10



90W外型圖

■ 90W之GN為輕負載 The GN of 90W denotes light loading

90W機種名稱 MODEL	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5K90RA(GS, GX)-AF	90	100/110	50/60	4	1.51/1.41	90~1400/90~1700	4.76/5.86	8.4/10.2	5/6.1	22	250
5K90RA(GS, GX)-CF	90	200/220	50/60	4	0.76/0.72	90~1400/90~1700	4.3/4.21	8/8.7	4.4/4.4	5	450
5K90RA(GS, GX)-CEF	90	230/240	50	4	0.66/0.68	90~1400	4.93/5.08	9.8/10.2	5.2/5.6	5	450

備註 NOTES : 以上均為連續額定。Above models are rated continuously.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

## ASSEMBLED TYPE SPEED CONTROLLER

### 組合型速度控制器

#### ● 使用方法與注意事項 INSTRUCTION & PRECAUTIONS

- 電源線請用0.75mm<sup>2</sup>以上的。
- 變速範圍：50Hz時為90-1400rpm，60Hz時為90-1700rpm。
- 因齒輪減速機構的關係，迴轉方向相反時，請將CW與CCW之結線相反即可。
- STOP與RUN開關，並非電源開關，使用於馬達短時間停止的場合；若馬達須長時間停止時，請將馬達電源關閉。
- Power supply leads should be thicker than 0.75mm<sup>2</sup>.
- Variable speed ranges from 90-1400rpm at 50Hz, and 90-1700rpm at 60Hz.
- Due to the construction of the gear motor, please reverse the CW/CCW wires when you wish to switch to an opposite rotational direction.
- The STOP and RUN switches are for short interval stops only. If the motor must be stopped for a longer period, please turn off the power supply.

#### 感應式機種一覽表 INDUCTION MOTOR MODELS

電壓 VOLTAGE	機種 MODEL	組合式品名 NAME	=	馬達規格 MOTOR	+ 控制器規格 CONTROLLER
1ø 100V~125V	US206-001	M206-001		US206-01	
	US206-401	M206-401		US206-01	
	US315-001	M315-001		US315-01	
	US315-401	M315-401		US315-01	
	US425-001	M425-001		US425-01	
	US425-401	M425-401		US425-01	
	US540-001	M540-001		US540-01	
	US540-401	M540-401		US540-01	
	US560-001	M560-001		US560-01	
	US560-401	M560-401		US560-01	
	US560-601	M560-601		US560-01	
	US590-001	M590-001		US590-01	
US590-601	M590-601		US590-01		
1ø 200V	US206-002	M206-002		US206-02	
	US206-402	M206-402		US206-02	
	US315-002	M315-002		US315-02	
	US315-402	M315-402		US315-02	
	US425-002	M425-002		US425-02	
	US425-402	M425-402		US425-02	
	US540-002	M540-002		US540-02	
	US540-402	M540-402		US540-02	
	US560-002	M560-002		US560-02	
	US560-402	M560-402		US560-02	
	US560-602	M560-602		US560-02	
	US590-002	M590-002		US590-02	
US590-602	M590-602		US590-02		
1ø 240V 50Hz	US206-002E	M206-002E		US206-02E	
	US206-402E	M206-402E		US206-02E	
	US315-002E	M315-002E		US315-02E	
	US315-402E	M315-402E		US315-02E	
	US425-002E	M425-002E		US425-02E	
	US425-402E	M425-402E		US425-02E	
	US540-002E	M540-002E		US540-02E	
	US540-402E	M540-402E		US540-02E	
	US560-002E	M560-002E		US560-02E	
	US560-402E	M560-402E		US560-02E	
	US560-602E	M560-602E		US560-02E	
	US590-002E	M590-002E		US590-02E	
US590-602E	M590-602E		US590-02E		

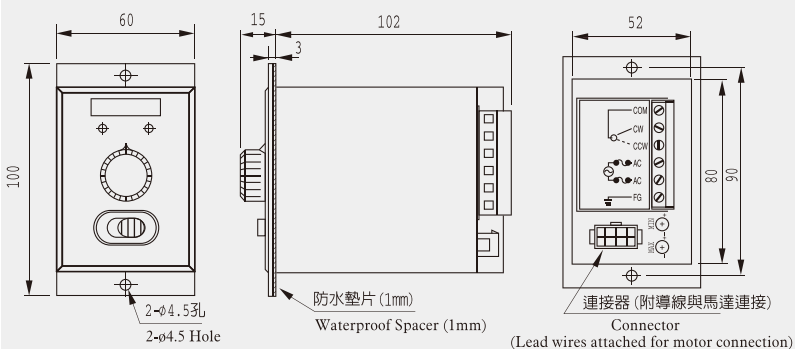


#### 可逆式機種一覽表 REVERSIBLE MOTOR MODELS

電壓 VOLTAGE	機種 MODEL	組合式品名 NAME	=	馬達規格 MOTOR	+ 控制器規格 CONTROLLER
1ø 100V~125V	US206-011	M206-011		US206-11	
	US206-411	M206-411		US206-11	
	US315-011	M315-011		US315-11	
	US315-411	M315-411		US315-11	
	US425-011	M425-011		US425-11	
	US425-411	M425-411		US425-11	
	US540-011	M540-011		US540-11	
	US540-411	M540-411		US540-11	
	US560-011	M560-011		US560-11	
	US560-411	M560-411		US560-11	
	US560-611	M560-611		US560-11	
	US206-012	M206-012		US206-12	
US206-412	M206-412		US206-12		
1ø 200V	US315-012	M315-012		US315-12	
	US315-412	M315-412		US315-12	
	US425-012	M425-012		US425-12	
	US425-412	M425-412		US425-12	
	US540-012	M540-012		US540-12	
	US540-412	M540-412		US540-12	
	US560-012	M560-012		US560-12	
	US560-412	M560-412		US560-12	
	US560-612	M560-612		US560-12	
	US206-012E	M206-012E		US206-12E	
	US206-412E	M206-412E		US206-12E	
	US315-012E	M315-012E		US315-12E	
US315-412E	M315-412E		US315-12E		
1ø 240V 50Hz	US425-012E	M425-012E		US425-12E	
	US425-412E	M425-412E		US425-12E	
	US540-012E	M540-012E		US540-12E	
	US540-412E	M540-412E		US540-12E	
	US560-012E	M560-012E		US560-12E	
	US560-412E	M560-412E		US560-12E	

#### ■ 組合型控制器外型尺寸圖 DIMENSIONS OF ASSEMBLED TYPE SPEED CONTROLLER

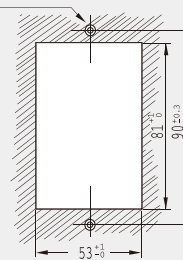
縮尺：1/4 單位：mm 重量：0.5kg SCALE：1/4 UNIT：mm WEIGHT：0.5kg



#### ■ 安裝孔加工圖

#### THE MACHINING OF THE INSTALLATION HOLES

(2-ø4.5) 安裝孔 (2-ø4.5) Installation Hole(s)



泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

減速機  
SPEED REDUCER

零組件類  
COMPONENTS

# SEPARATED TYPE SPEED CONTROLLER

## 分離型速度控制器

### SS21 / SS22



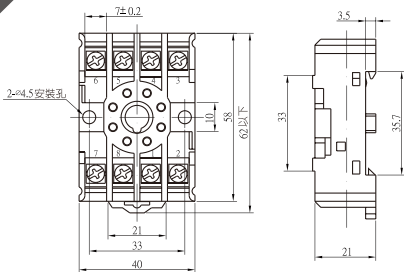
### SS31-HR / SS32-HR



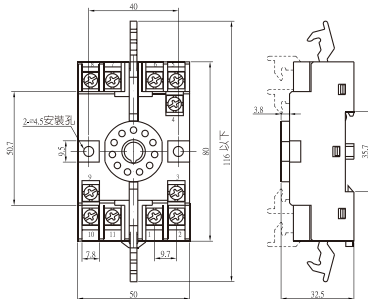
機種規格表 MODEL SPECIFICATIONS

品名 MODEL	SS21	SS22	SS31-HR	SS32-HR
電源範圍 POWER RANGE	100~125V	200~240V	100~125V	200~240V
頻率 FREQUENCY	50/60Hz			
最大容許電流 MAX. CURRENT ALLOWED	2A	2A	3A	3A
適用馬達 SUITABLE MOTOR	6W-90W			
速度控制範圍 SPEED CONTROL RANGE	90~1400rpm (50Hz) / 90~1700rpm (60Hz)			
速度變動率 VARIABLE SPEED RATIO	5%	5%	3%	3%
瞬時剎車 INSTANT BRAKE	-	-	電子式剎車 Electronic Brake	電子式剎車 Electronic Brake
剎車保持力時間 BRAKE HOLDING TIME	-	-	0.5 秒 0.5 Second	0.5 秒 0.5 Second
絕緣阻抗 INSULATION RESISTANCE	外殼與各端子間以DC 500V高阻計量測，測定值在10MΩ以上。 Tested value at 10MΩ and above, measured by DC 500V Hi-Resistance meter between the housing and terminals.			
絕緣耐壓 HI-POT INSULATION	外殼與各端子間以60Hz, 1kV加入一分鐘無異狀。 No damages caused after 1kV at 60Hz was tested between the housing and terminals.			
使用環境溫度 AMBIENT TEMPERATURE	-10~+40°			
保存溫度 STORAGE TEMPERATURE	-20~+60°			

8-PIN 腳座 8-PIN BASE

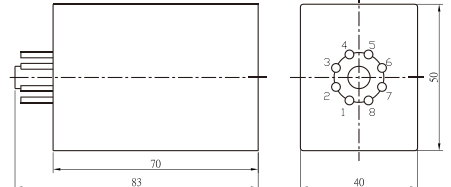


11-PIN 腳座 11-PIN BASE

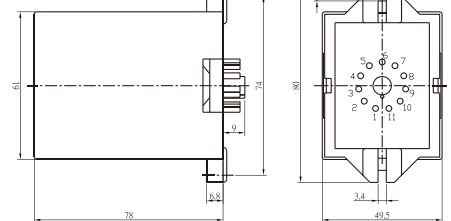


尺寸圖 DIMENSIONS

SS21/ SS22



SS31-HR/ SS32-HR



### 有段變速的使用 APPLICATION OF STEPPED SPEED

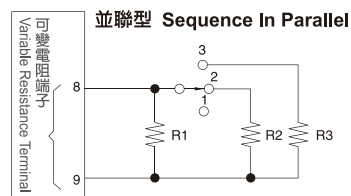
若使用的速度決定後，在切換轉速時，將可變電阻設定成固定電阻值，如下圖所示：

1. 並聯型：切換開關在接點切換時，與接點端子接觸後，再離開原有端子接點。
2. 串聯型：完全離開前一接點，才與另一個接點接觸。

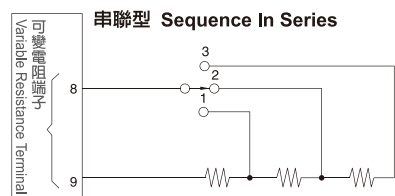
兩者都可使用，請依所需形式做好配線工作。使用串聯型的切換開關，在接點切換的瞬間會造成開路狀態，馬達轉速會急速上升，請特別注意。

- Once applicable speed is decided, as speed is changed, variable electric resistance value can be fixed.
1. Parallel Type: the switch first makes contact with the connecting terminal, then returns to the original terminal point.
  2. Series Type: the switch leaves the previous connecting point, then makes contact with another terminal point.
- Either type is applicable, please wire accordingly. When using the parallel type switch, an open-circuit mode is created at the instant of switching, where a rapid increase of motor speed must be taken into precaution.

SS21、SS31-HR  
SS22、SS32-HR



SS21、SS31-HR  
SS22、SS32-HR



■ 並聯型電阻值 (MAX. 20KΩ) R  
Sequence In Parallel Resistance Value =  $\frac{R1 \times R2}{R1 + R2}$ ,  $\frac{R1 \times R3}{R1 + R3}$

■ 串聯型電阻值 (MAX. 20KΩ) R  
Sequence In Series Resistance Value =  $R1 + R2 + R3$

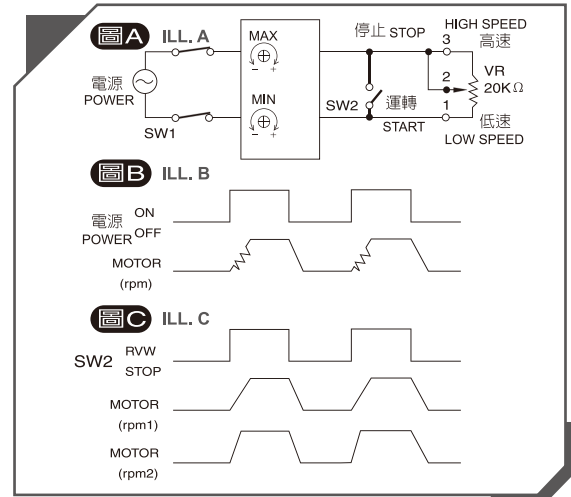
## WIRING APPLICATION FOR SEPARATE TYPE CONTROLLER

分離型控制器 在配線上的應用

### 在間歇性使用的場合，如何改善啓動時的特性

#### HOW TO IMPROVE STARTING FEATURES ON INTERVAL USAGE

控制器的電源開關 (SW1) 切到ON時，馬達需有較長的時間來啓動，且在電源開關ON / OFF間的電源突波，常會造成馬達啓動轉速不穩的暫態現象。(如右圖B)  
 在間歇性使用的場合，或馬達僅是短時間不使用時，請讓電源常駐於控制器內。改由SW2來控制RUN/STOP，即可獲得較佳的起動特性。(如右圖C的MOTOR rpm1)  
 若再將MIN的SVR向順時間微調一點點(但馬達未運轉)，以提升其零點的抵補偏壓值，即可獲得最佳的啓動應答性。(如右圖C的MOTOR rpm2)  
 When turning on power switch (SW1) of the controller, the motor needs more time to start. The surges between ON/OFF cause motor starting speed un-steady temporarily. (see ILL. B)  
 On interval usage or motor is not in use for short time, please leave power connected to the controller. A better starting feature is available by controlling RUN/STOP with SW2. (see MOTOR rpm1 of ILL. C)  
 To get a better starting response, turn SVR on MIN. clockwise slightly (but keep the motor still stop) to raise a substitution on bias voltage from zero. (see MOTOR rpm2 of ILL. C)

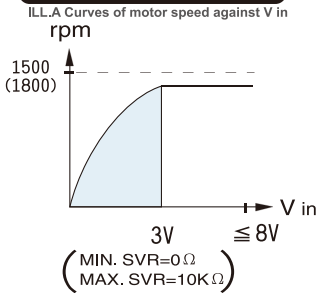


### 直流電壓控制速度的使用

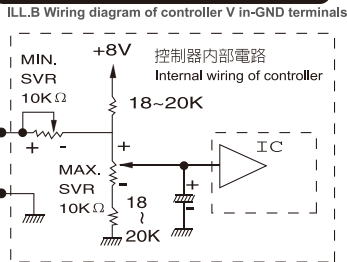
#### THE USAGE OF SPEED CONTROL IN DC VOLTAGE

- 速度控制用的可變電阻，可以改用輸入一直流電壓來代替。下圖的配線方法可提供設計應用時參考。
- 在應用時需特別注意V in 不能超過8V，且MIN.的SVR 需向左調至0。
- 需特別注意控制信號側 (V in) 和電源側的隔離狀態 (如下表所示)，以免造成控制器燒毀和漏電的情形。
- 確實連接220Ω, 1 / 2W 的電阻器。
- The variable resistance used for speed control could be replaced by inputting a DC voltage. The wiring below is for application reference.
- Be cautious in application that voltage input must not exceed 8V, and the SVR of MIN. must be turned left to zero.
- Special attention to the isolation status between control signal side (V in) and power supply side (see Table 1) to avoid controller burn down and current leakage.
- Be sure to connect 220Ω, 1/2W resistor.

圖A. 馬達轉速對V in的曲線



圖B. 控制器V in-GND端子的電路圖



表一/連接端子與電源隔離狀態

Table 1. isolation for connecting terminals and power

品名 Model name	V in 連接端子 connecting terminals	GND 連接端子 connecting terminals	對電源側 隔離狀態 Isolation beside power supply
SS21 SS22	6	3	無 NO
SS31-HR SS32-HR	8	9	有 YES

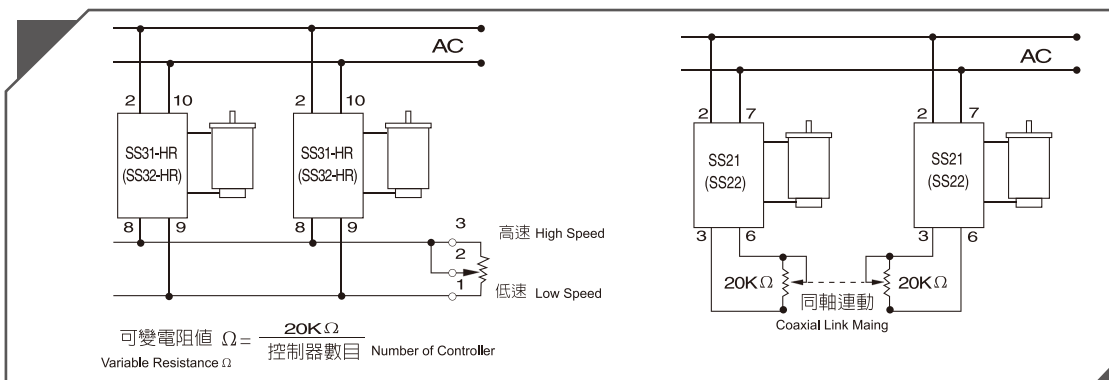
### 並列運轉

#### PARALLEL ROTATION

使用一個可變電阻 (僅限SS31 / SS32) 或同軸多組可變電阻 (用於SS21 / SS22) 來控制多個馬達時，控制器的配線，方法如下圖所示。但各個馬達間會因負載的不同及製品的誤差值，使得轉速會有微小的差異。

When a single variable resistance (only for SS31/SS32) or coaxial multi-variable resistances (only for SS21/SS22) are used to control several motors, the wiring of the controller are shown as below.

Speed of each motor may have minor variation due to different loading and product tolerance.

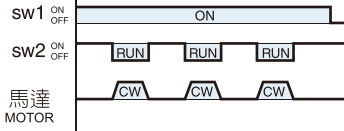
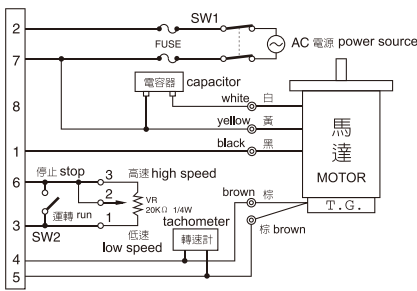




# SS21 SS22 EXTERNAL WIRING CONNECTIONS

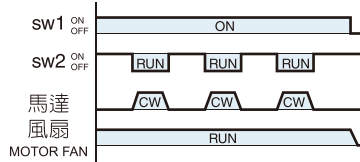
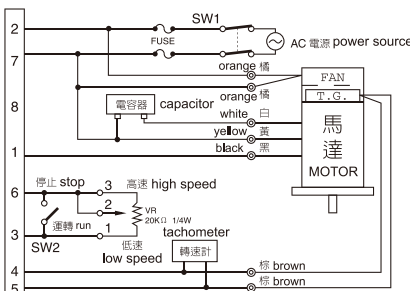
## SS21 SS22 外部配線圖

### 單一方向運轉+變速 SINGLE ROTATING DIRECTION + VARIABLE SPEED



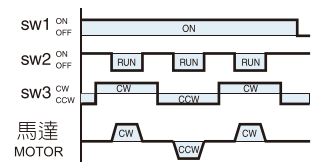
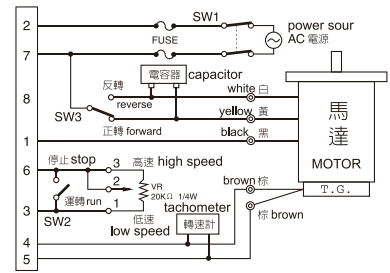
開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1	AC250V,5A以上above
SW2	DC20V,10mA
可變電阻 Variable resistance(VR)	20KΩ, 1/4W, B特性

### 單一方向運轉+強制風扇+變速 SINGLE ROTATING DIRECTION + FAN + VARIABLE SPEED



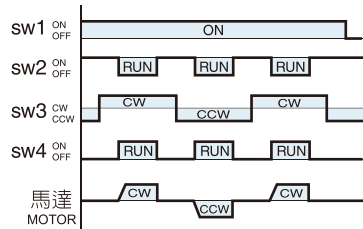
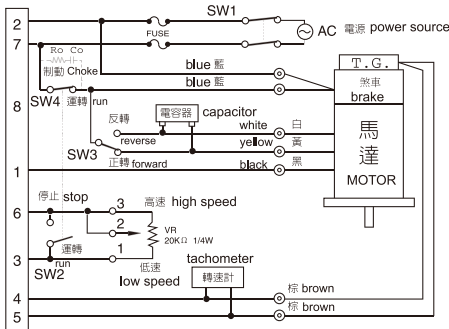
開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1	AC250V,5A以上above
SW2	DC20V,10mA
可變電阻 Variable resistance(VR)	20KΩ, 1/4W, B特性

### 正逆轉+變速 REVERSIBLE + VARIABLE SPEED



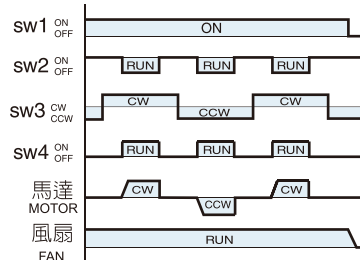
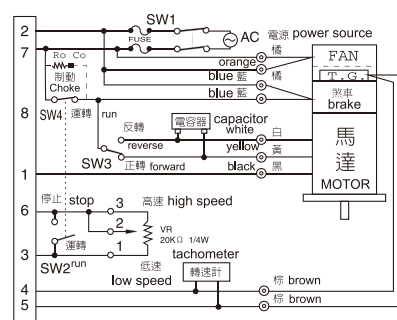
開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1, SW3	AC250V,5A以上above
SW2	DC20V,10mA
可變電阻 Variable resistance(VR)	20KΩ, 1/4W, B特性

### 正逆轉+電磁制車+變速 REVERSIBLE + MAGNETIC BRAKE + VARIABLE SPEED



開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1, SW3, SW4	AC250V,5A以上above
SW2	DC20V,10mA
接觸點保護 Contacting point protection(Ro Co)	Ro=5~200Ω (1/2W以上above) Co=0.1~0.2μF (400VAC以上above)
可變電阻 Variable resistance(VR)	20KΩ, 1/4W, B特性

### 正逆轉+強制風扇+電磁制車+變速 REVERSIBLE + FAN + MAGNETIC BRAKE + VARIABLE SPEED

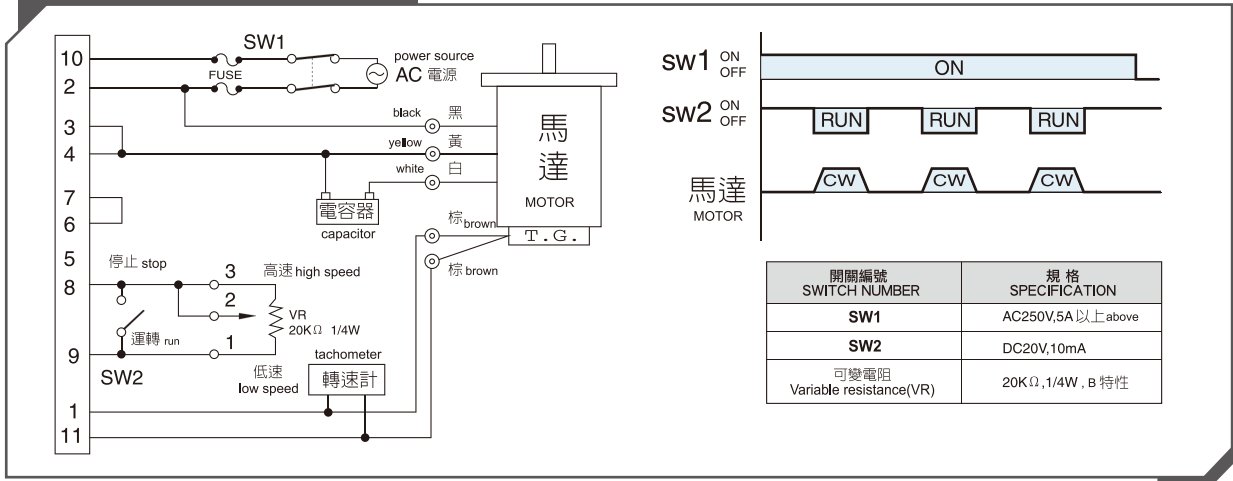


開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1, SW3, SW4	AC250V,5A以上above
SW2	DC20V,10mA
接觸點保護 Contacting point protection(Ro Co)	Ro=5~200Ω (1/2W以上above) Co=0.1~0.2μF (400VAC以上above)
可變電阻 Variable resistance(VR)	20KΩ, 1/4W, B特性

## SS31-HR SS32-HR EXTERNAL WIRING CONNECTIONS SS31-HR SS32-HR 外部配線圖

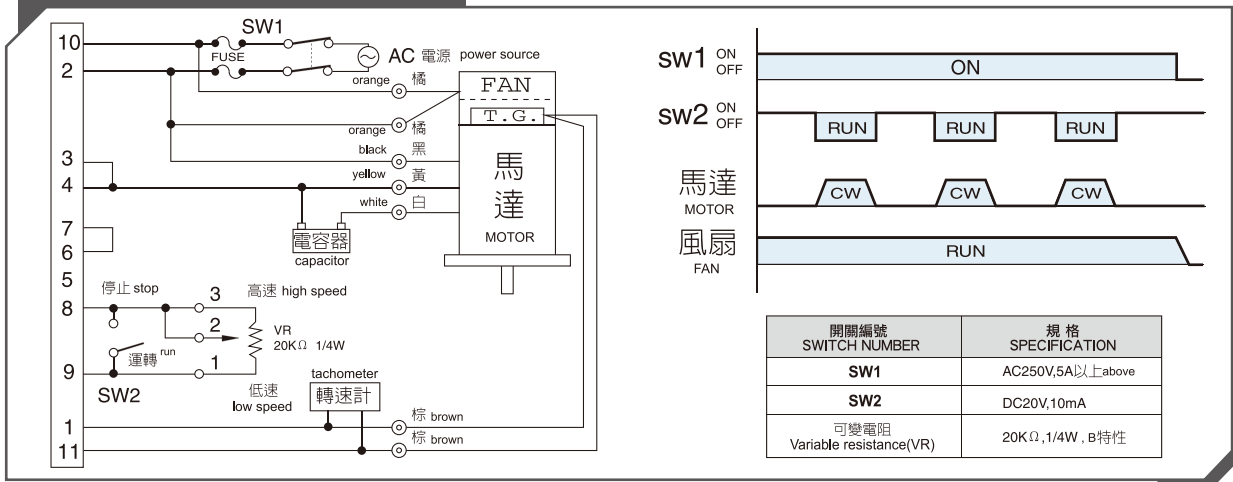
### 單一方向運轉+變速

SINGLE ROTATING DIRECTION + VARIABLE SPEED



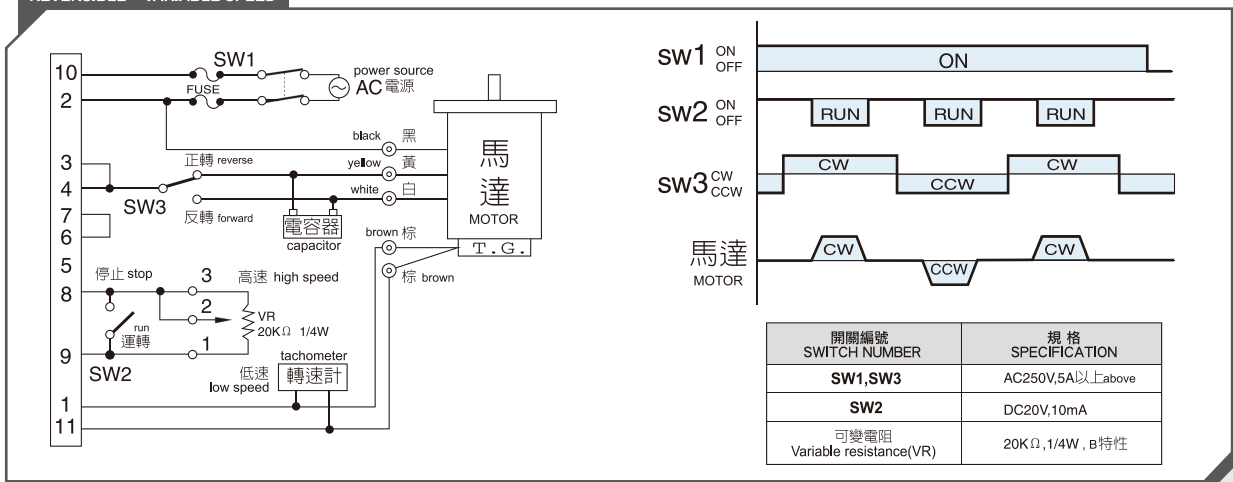
### 單一方向運轉+強制風扇+變速

SINGLE ROTATING DIRECTION + FAN + VARIABLE SPEED



### 正逆轉+變速

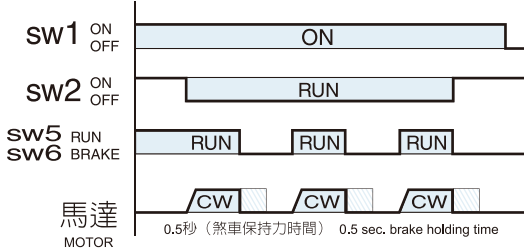
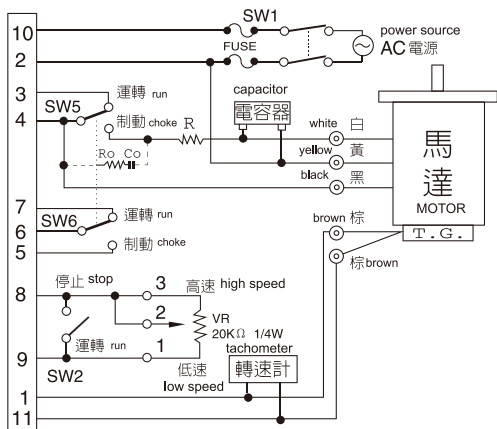
REVERSIBLE + VARIABLE SPEED



# SS31-HR SS32-HR EXTERNAL WIRING CONNECTIONS

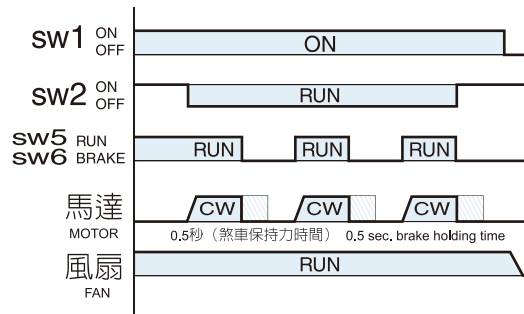
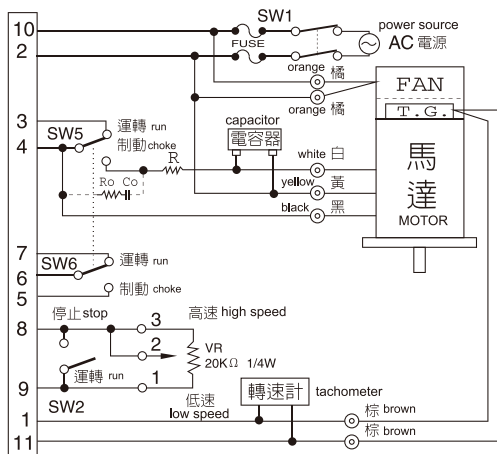
## SS31-HR SS32-HR 外部配線圖

### 單一方向運轉+變速+電子式剎車 SINGLE ROTATING DIRECTION + VARIABLE SPEED + ELECTRONIC BRAKE



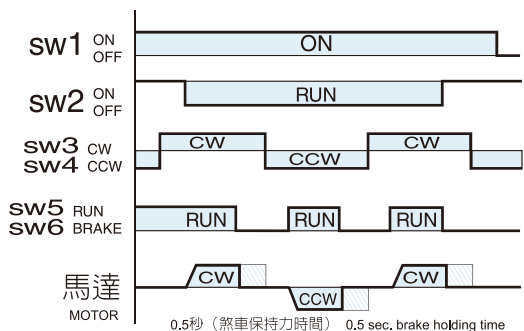
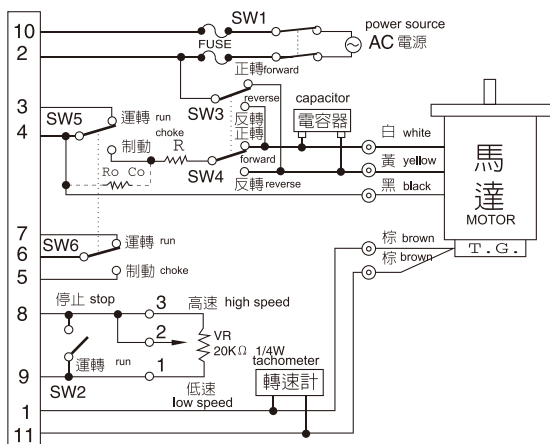
開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1, SW5, SW6	AC250V, 5A 以上 above
SW2	DC20V, 10mA
外接電阻 External resistance (Ro Co)	10W 10Ω
接點保護 Contacting point protection (Ro Co)	Ro=5-200Ω (1/2W 以上 above) Co=0.1-0.2μF (400VAC 以上 above)
可變電阻 Variable resistance (VR)	20KΩ, 1/4W, B 特性

### 單一方向運轉+強制風扇+變速+電子式剎車 SINGLE ROTATING DIRECTION + FAN + VARIABLE SPEED + ELECTRONIC BRAKE



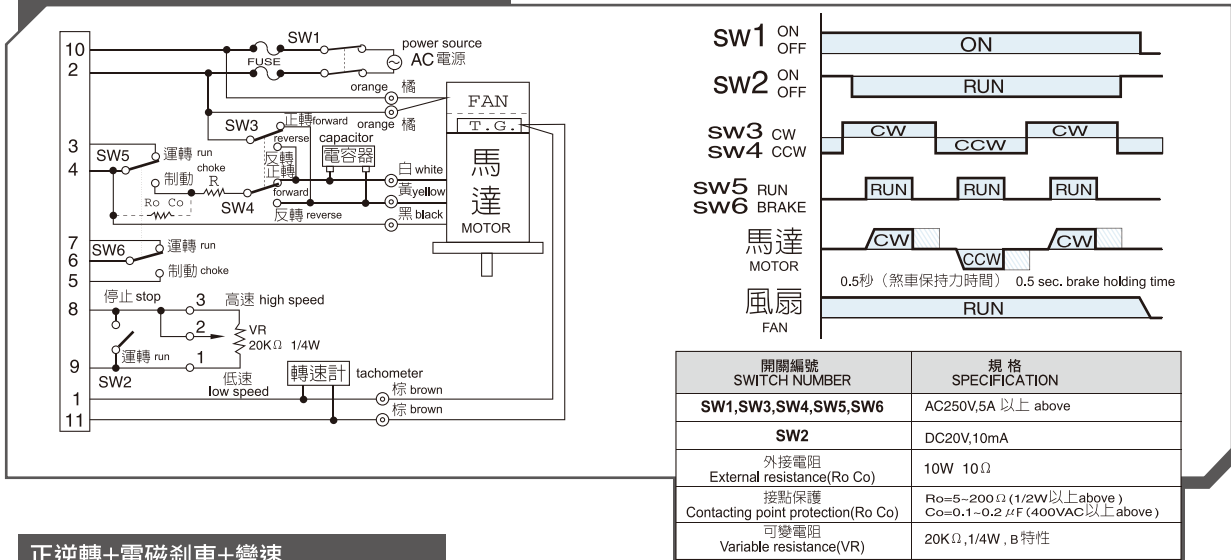
開關編號 SWITCH NUMBER	規格 SPECIFICATION
SW1, SW3, SW4, SW5, SW6	AC250V, 5A 以上 above
SW2	DC20V, 10mA
外接電阻 External resistance (R)	10W 10Ω
接點保護 Contacting point protection (Ro Co)	Ro=5-200Ω (1/2W 以上 above) Co=0.1-0.2μF (400VAC 以上 above)
可變電阻 Variable resistance (VR)	20KΩ, 1/4W, B 特性

### 正逆轉+變速+電子式剎車 REVERSIBLE + VARIABLE SPEED + ELECTRONIC BRAKE

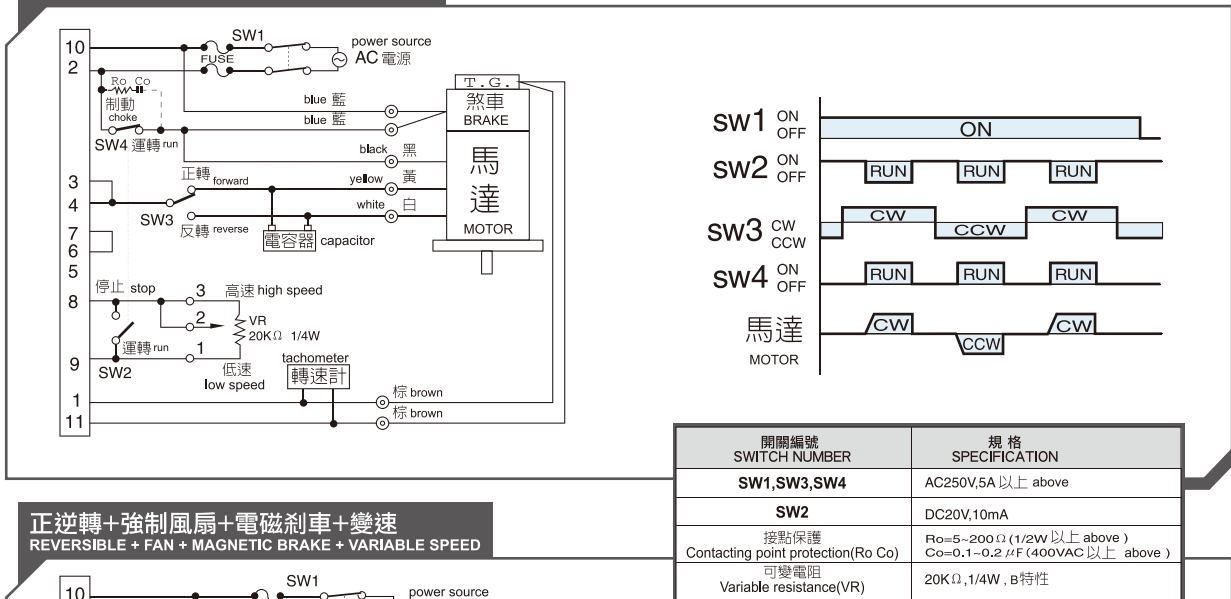


## SS31-HR SS32-HR EXTERNAL WIRING CONNECTIONS SS31-HR SS32-HR 外部配線圖

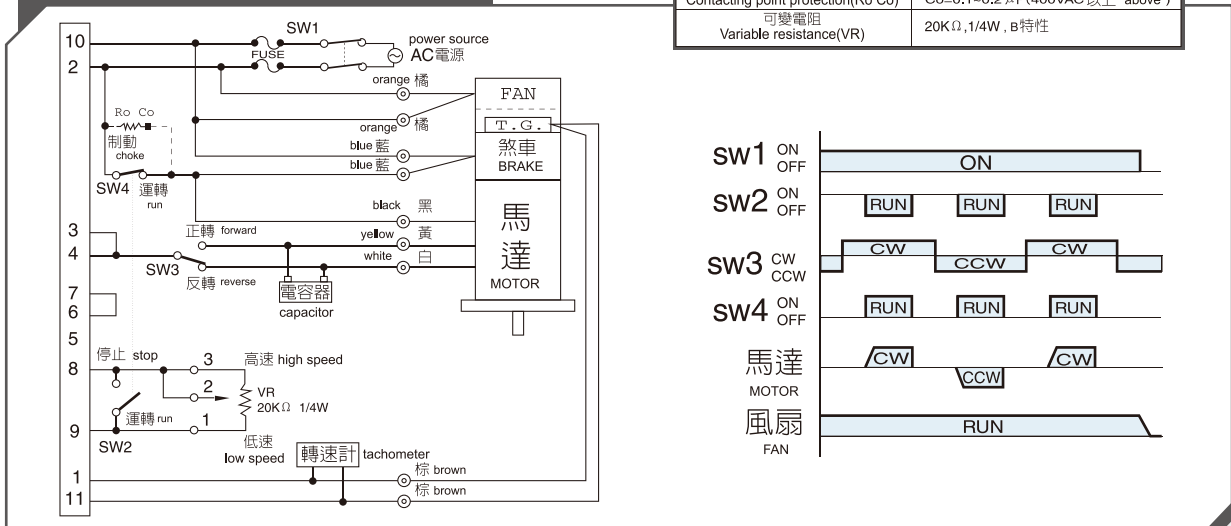
正逆轉+強制風扇+變速+電子式剎車  
REVERSIBLE + FAN + VARIABLE SPEED + ELECTRONIC BRAKE



正逆轉+電磁剎車+變速  
REVERSIBLE + MAGNETIC BRAKE + VARIABLE SPEED



正逆轉+強制風扇+電磁剎車+變速  
REVERSIBLE + FAN + MAGNETIC BRAKE + VARIABLE SPEED





# BRAKE MOTOR

## 剎車馬達

### 構造 (斷電剎車型) CONSTRUCTION (POWER-OFF BRAKE TYPE)

本公司的電磁剎車馬達為激磁作動型，當電磁鐵的激磁線圈，一加上電壓，與彈簧對抗的電磁鐵會將活動片吸住，於是剎車被放開，馬達軸心便可以自由地轉動。

Our brake motor is an excitation type motor. Once voltage is introduced into the coil, the magnet working against the spring will hold the moving plate, releasing the brake, and allowing the motor shaft to move freely.

#### ■ 絕緣阻抗 INSULATION RESISTANCE

線圈與外殼間以DC 500V高阻計量測，測定值在10MΩ以上。  
Tested value at 10MΩ and above, measured by DC 500V Hi-Resistance meter between the coil and housing.

#### ■ 絕緣耐力 HI-POT RESISTANCE

線圈與外殼間以60Hz, 1kV加入一分鐘無異狀。  
No damages caused after 1kV at 60Hz was tested for one minute between the coil and housing.



### 剎車間隙的調整 ADJUSTMENT OF THE BRAKE CLEARANCE

在電磁線圈與活動片之間間隙稱之為剎車間隙。出廠時我們會設定在0.15mm的理想值(約一張名片的厚度)。當使用一段時間後，會因剎車來令片的磨耗而使剎車間隙變大。若剎車間隙大於0.3mm時，送廠檢修或更新來令片將間隙調回0.15mm。

Brake clearance is the gap between magnetic coils and moving plate. The ideal pre-setting is 0.15mm (around the thickness of a name card). After a period of usage, the clearance is widened due to lining friction and wear. If the clearance is bigger than 0.3mm, please contact us or replace the lining.

### 特徵 FEATURES

#### ■ 高剎車力及保持力

##### HIGH BRAKING & HOLDING FORCE

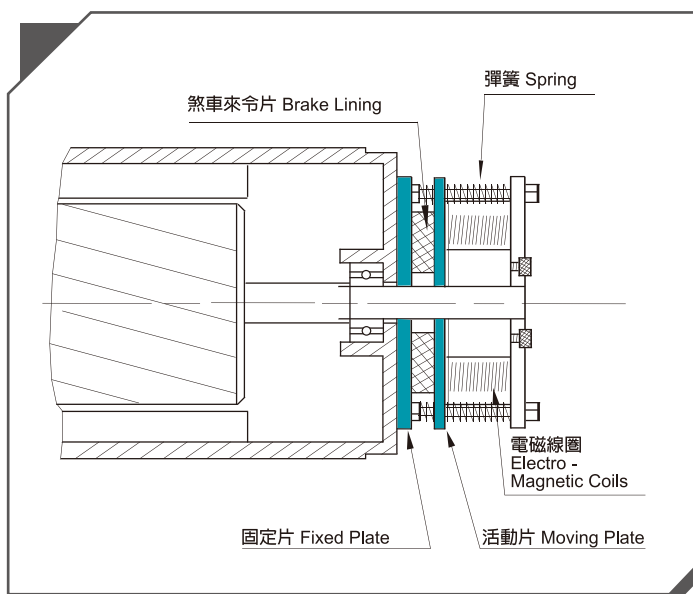
內建激磁作動的電磁剎車：當電源被切斷時，不但能迅速的停住馬達，而且能很確實的保持住負荷，所以最適合用於緊急時的安全剎車。

Built-in excitation brake: as the power is shut off, it can stop the motor instantly and accurately holds the load, making it most suitable for emergency braking.

#### ■ 剎車精度高 BRAKE PRECISION

不論馬達轉速多少，電磁剎車均能使馬達本體的過轉控制在2-3轉內，因此適用於頻繁正逆轉的操作。

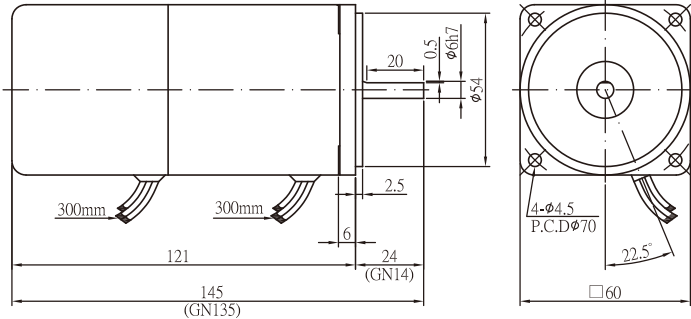
Regardless of rpm, the magnetic brake can control the overturns within 2-3 turns, making it suitable for frequent forward/reverse operation.



## ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR -IP22

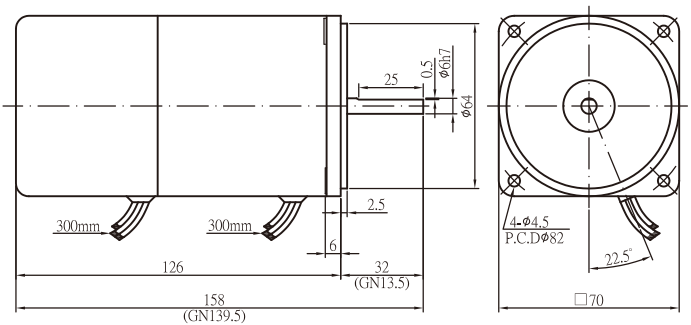
感應式電磁剎車馬達 防護等級IP22

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



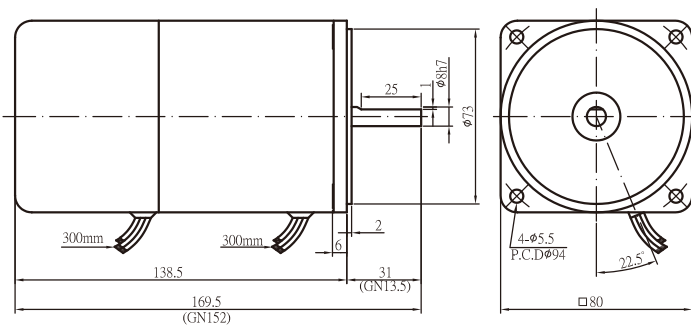
6W外型圖

6W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
2IK6A(GN)-AM	6	1ø100/110	50/60	4	1150/1400	30分鐘/minutes	0.7/0.63	0.5/0.41	0.22/0.21	2.5/300V
2IK6A(GN)-CM	6	1ø200/220	50/60	4	1150/1550	30分鐘/minutes	0.65/0.7	0.51/0.54	0.1/0.11	0.7/450V
2IK6A(GN)-CEM	6	1ø230/240	50	4	1100/1200	30分鐘/minutes	0.74/0.77	0.55/0.5	0.11/0.1	0.7/450V



15W外型圖

15W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
3IK15A(GN)-AM	15	1ø100/110	50/60	4	1150/1650	30分鐘/minutes	0.88/1.04	1.22/0.91	0.36/0.35	5/300V
3IK15A(GN)-CM	15	1ø200/220	50/60	4	1150/1600	30分鐘/minutes	0.75/1.1	1.12/0.93	0.18/0.18	1.2/450V
3IK15A(GN)-CEM	15	1ø230/240	50	4	1300/1300	30分鐘/minutes	1.06/1.06	1.14/1.13	0.17/0.17	1.2/450V



25W外型圖

25W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
4IK25A(GN)-AM	25	1ø100/110	50/60	4	1250/1600	30分鐘/minutes	1.4/1.4	1.93/1.51	0.57/0.45	6/300V
4IK25A(GN)-CM	25	1ø200/220	50/60	4	1250/1600	30分鐘/minutes	1.57/1.38	1.91/1.52	0.28/0.25	1.5/450V
4IK25A(GN)-CEM	25	1ø230/240	50	4	1300/1300	30分鐘/minutes	1.38/1.55	1.9/1.86	0.25/0.24	1.5/450V
4IK25A(GN)-SM	25	3ø220	50/60	4	1300/1550	30分鐘/minutes	5.12/4.04	1.89/1.56	0.22/0.19	-
4IK25A(GN)-UM	25	3ø380	50/60	4	1200/1350	30分鐘/minutes	3.96/2.97	2.04/1.79	0.11/0.11	-

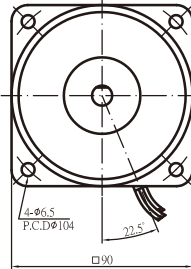
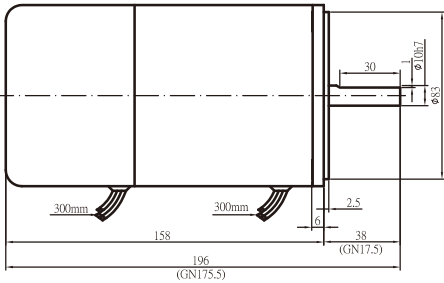
### 備註 NOTES :

1. 感應式電磁煞車馬達之使用頻率不可大於10次/分。The applicable frequency for the ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR should not exceed more than 10 times per minute.
2. 感應式電磁煞車馬達之靜摩擦轉矩：6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm. Static friction torque of a ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR is: 6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm.

# ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR -IP22

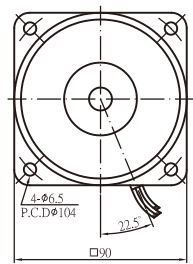
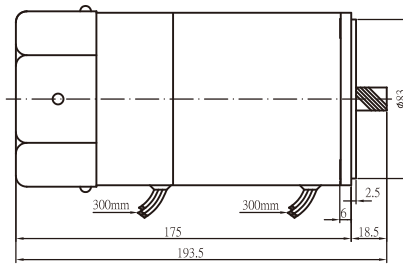
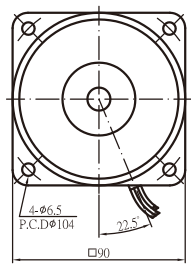
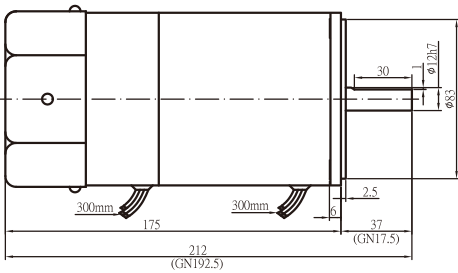
感應式電磁剎車馬達 防護等級IP22

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



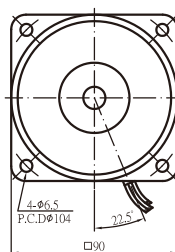
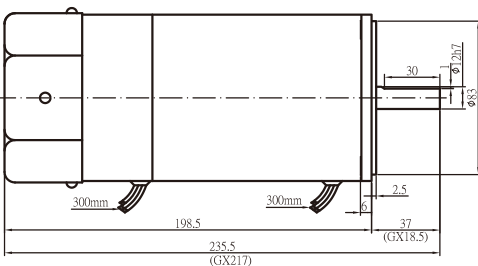
40W外型圖

40W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK40A(GN)-AM	40	1φ100/110	50/60	4	1250/1600	30分鐘/minutes	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40A(GN)-CM	40	1φ200/220	50/60	4	1300/1650	30分鐘/minutes	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40A(GN)-CEM	40	1φ230/240	50	4	1350/1350	30分鐘/minutes	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40A(GN)-SM	40	3φ220	50/60	4	1400/1600	30分鐘/minutes	10.51/7.83	2.83/2.4	0.32/0.28	-
5IK40A(GN)-UM	40	3φ380	50/60	4	1350/1600	30分鐘/minutes	9.25/6.68	2.85/2.45	0.16/0.15	-



60W/60W-GX外型圖

60W/60W-GX機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK60GX-AFM	60	1φ100/110	50/60	4	1200/1650	30分鐘/minutes	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60A(GN)-AFM										
5IK60GX-CFM	60	1φ200/220	50/60	4	1250/1600	30分鐘/minutes	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60A(GN)-CFM										
5IK60GX-CEFM	60	1φ230/240	50	4	1300/1350	30分鐘/minutes	4.14/5.22	4.56/4.4	0.56/0.55	4/450V
5IK60A(GN)-CEFM										
5IK60GX-SFM	60	3φ220	50/60	4	1300/1550	30分鐘/minutes	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60A(GN)-SFM										
5IK60GX-UFM	60	3φ380	50/60	4	1400/1550	30分鐘/minutes	14.33/10.15	4.2/3.79	0.21/0.22	-
5IK60A(GN)-UFM										



90W外型圖

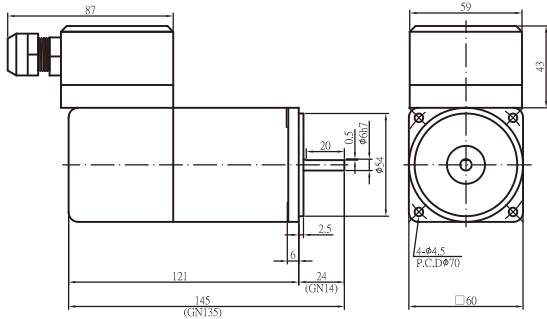
90W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK90A(GX)-AFM	90	1φ100/110	50/60	4	1300/1650	30分鐘/minutes	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90A(GX)-CFM	90	1φ200/220	50/60	4	1300/1650	30分鐘/minutes	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90A(GX)-CEFM	90	1φ230/240	50	4	1350/1350	30分鐘/minutes	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90A(GX)-SFM	90	3φ220	50/60	4	1400/1650	30分鐘/minutes	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90A(GX)-UFM	90	3φ380	50/60	4	1400/1650	30分鐘/minutes	23.3/18.14	6.27/5.23	0.4/0.3	-

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

## ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR, TERMINAL BOX TYPE -IP54

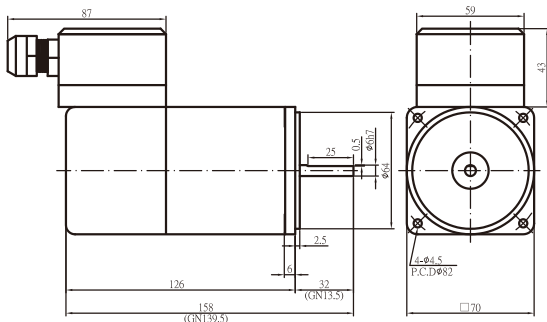
感應式電磁剎車馬達 接線盒式-防護等級IP54

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



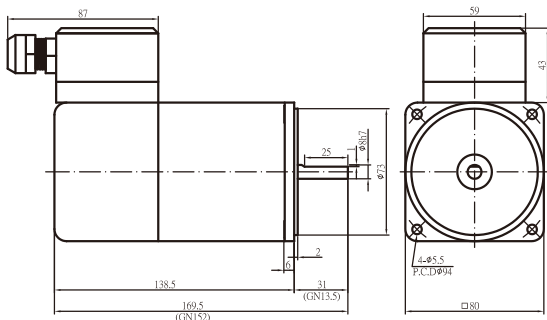
6W外型圖

6W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
2IK6A(GN)-AMT	6	1ø100/110	50/60	4	1150/1400	30分鐘/minutes	0.7/0.63	0.51/0.41	0.22/0.21	2.5/300V
2IK6A(GN)-CMT	6	1ø200/220	50/60	4	1150/1550	30分鐘/minutes	0.65/0.7	0.51/0.54	0.1/0.11	0.7/450V
2IK6A(GN)-CEMT	6	1ø230/240	50	4	1100/1200	30分鐘/minutes	0.74/0.77	0.55/0.5	0.11/0.1	0.7/450V



15W外型圖

15W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
3IK15A(GN)-AMT	15	1ø100/110	50/60	4	1150/1650	30分鐘/minutes	0.88/1.04	1.22/0.91	0.36/0.35	5/300V
3IK15A(GN)-CMT	15	1ø200/220	50/60	4	1150/1600	30分鐘/minutes	0.75/1.1	1.12/0.93	0.18/0.18	1.2/450V
3IK15A(GN)-CEMT	15	1ø230/240	50	4	1300/1300	30分鐘/minutes	1.06/1.06	1.14/1.13	0.17/0.17	1.2/450V



25W外型圖

25W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
4IK25A(GN)-AMT	25	1ø100/110	50/60	4	1250/1600	30分鐘/minutes	1.4/1.4	1.93/1.51	0.57/0.45	6/300V
4IK25A(GN)-CMT	25	1ø200/220	50/60	4	1250/1600	30分鐘/minutes	1.57/1.38	1.91/1.52	0.28/0.25	1.5/450V
4IK25A(GN)-CEMT	25	1ø230/240	50	4	1300/1300	30分鐘/minutes	1.38/1.55	1.9/1.86	0.25/0.24	1.5/450V
4IK25A(GN)-SMT	25	3ø220	50/60	4	1300/1550	30分鐘/minutes	5.12/4.04	1.89/1.56	0.22/0.19	-
4IK25A(GN)-UMT	25	3ø380	50/60	4	1200/1350	30分鐘/minutes	3.96/2.97	2.04/1.79	0.11/0.11	-

**備註 NOTES :**

- 感應式電磁剎車馬達之使用頻率不可大於10次/分。The applicable frequency for the ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR should not exceed more than 10 times per minute.
- 感應式電磁剎車馬達之靜摩擦轉矩：6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm. Static friction torque of a ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR is: 6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm.

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

減速機  
SPEED REDUCER

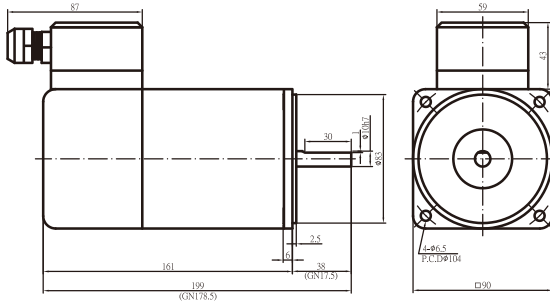
零組件類  
COMPONENTS



# ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR, TERMINAL BOX TYPE -IP54

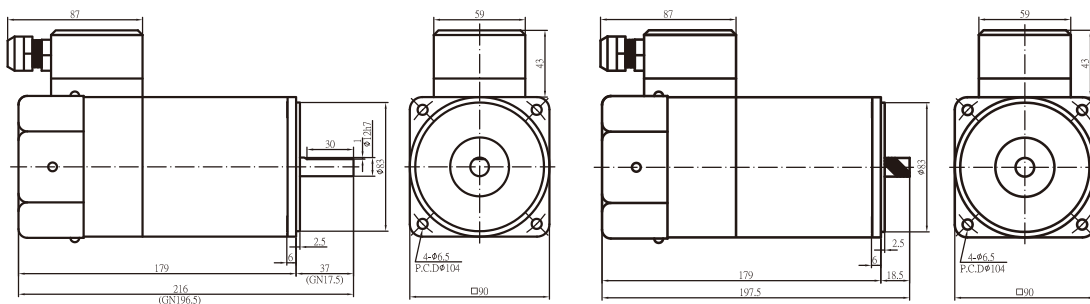
感應式電磁剎車馬達 接線盒式-防護等級IP54

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



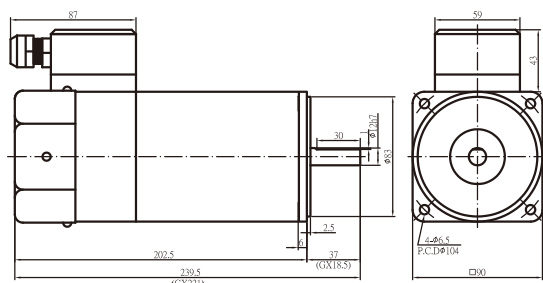
40W外型圖

40W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RRATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK40A(GN)-AMT	40	1φ100/110	50/60	4	1250/1600	30分鐘/minutes	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40A(GN)-CMT	40	1φ200/220	50/60	4	1300/1650	30分鐘/minutes	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40A(GN)-CEMT	40	1φ230/240	50	4	1350/1350	30分鐘/minutes	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40A(GN)-SMT	40	3φ220	50/60	4	1400/1600	30分鐘/minutes	10.51/7.83	2.83/2.4	0.29/0.27	-
5IK40A(GN)-UMT	40	3φ380	50/60	4	1350/1600	30分鐘/minutes	9.25/6.68	2.85/2.45	0.16/0.15	-



60W/60W-GX外型圖

60W/60W-GX機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK60A(GN)-AFMT 5IK60GX-AFMT	60	1φ100/110	50/60	4	1200/1650	30分鐘/minutes	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60A(GN)-CFMT 5IK60GX-CFMT	60	1φ200/220	50/60	4	1250/1600	30分鐘/minutes	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60A(GN)-CEFMT 5IK60GX-CEFMT	60	1φ220/240	50	4	1300/1350	30分鐘/minutes	4.14/5.22	4.56/4.40	0.56/0.55	4/450V
5IK60A(GN)-SFMT 5IK60GX-SFMT	60	3φ220	50/60	4	1300/1550	30分鐘/minutes	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60A(GN)-UFMT 5IK60GX-UFMT	60	3φ380	50/60	4	1400/1550	30分鐘/minutes	14.33/10.15	4.2/3.79	0.21/0.22	-



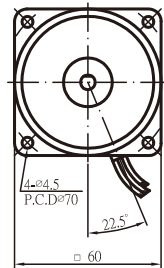
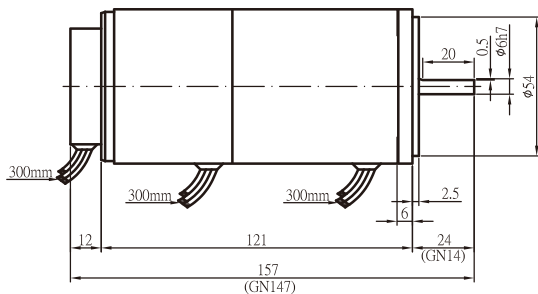
90W外型圖

90W機型MODEL	出力(W) OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	額定轉數(rpm) RATED SPEED	額定時間 RATED TIME	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
5IK90A(GX)-AFMT	90	1φ100/110	50/60	4	1300/1650	30分鐘/minutes	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90A(GX)-CFMT	90	1φ200/220	50/60	4	1300/1650	30分鐘/minutes	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90A(GX)-CEFMT	90	1φ220/240	50	4	1350/1350	30分鐘/minutes	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90A(GX)-SFMT	90	3φ220	50/60	4	1400/1650	30分鐘/minutes	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90A(GX)-UFMT	90	3φ380	50/60	4	1400/1650	30分鐘/minutes	23.3/18.14	6.3/5.3	0.4/0.3	-

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

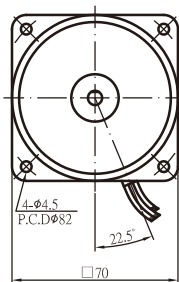
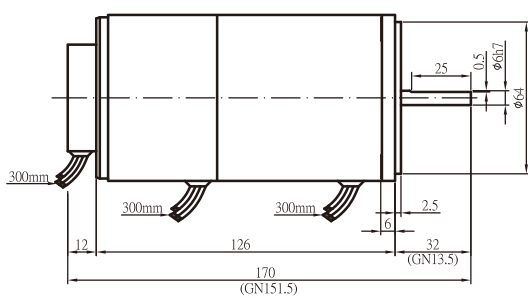
## ELECTRO-MAGNETIC VARIABLE SPEED BRAKE MOTOR 無段變速電磁剎車馬達

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



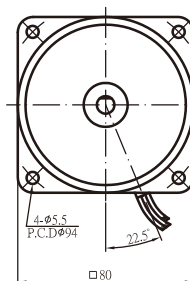
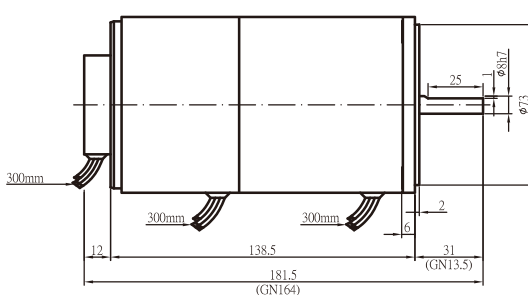
6W外型圖

6W機種名稱 TYPE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
2IK6RA(GN)-AM	6	100/110	50/60	4	0.22/0.21	90~1400/90~1700	0.7/0.63	0.4/0.55	0.72/0.5	2.5	300
2IK6RA(GN)-CM	6	200/220	50/60	4	0.1/0.11	90~1400/90~1700	0.65/0.7	0.44/0.66	0.6/0.7	0.7	450
2IK6RA(GN)-CEM	6	230/240	50	4	0.11/0.1	90~1400	0.74/0.77	0.39/0.52	0.72/0.8	0.7	450



15W外型圖

15W機種名稱 TYPE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
3IK15RA(GN)-AM	15	100/110	50/60	4	0.36/0.35	90~1400/90~1700	0.88/1.04	0.9/1.5	1.0/1.1	5	300
3IK15RA(GN)-CM	15	200/220	50/60	4	0.18/0.18	90~1400/90~1700	0.75/1.1	1.1/1.5	1.0/1.1	1.2	450
3IK15RA(GN)-CEM	15	230/240	50	4	0.17/0.17	90~1400	1.06/1.06	1.40/1.32	1.02/1.25	1.2	450



25W外型圖

25W機種名稱 TYPE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
4IK25RA(GN)-AM	25	100/110	50/60	4	0.57/0.45	90~1400/90~1700	1.4/1.4	2.17/2.5	1.4/1.4	6	300
4IK25RA(GN)-CM	25	200/220	50/60	4	0.28/0.25	90~1400/90~1700	1.57/1.38	2.1/2.4	1.6/1.3	1.5	450
4IK25RA(GN)-CEM	25	230/240	50	4	0.25/0.24	90~1400	1.38/1.55	2.2/2.4	1.5/1.7	1.5	450

### 備註 NOTES :

- 感應式電磁剎車馬達之使用頻率不可大於10次/分。The applicable frequency for the ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR should not exceed more than 10 times per minute.
- 感應式電磁剎車馬達之靜摩擦轉矩：6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm. Static friction torque of a ELECTRO-MAGNETIC INDUCTION BRAKE MOTOR is: 6W~25W: 4Kg.cm, 40W~90W: 10Kg.cm.

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

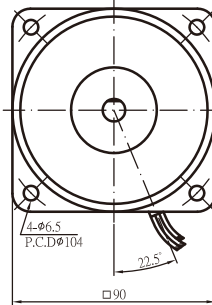
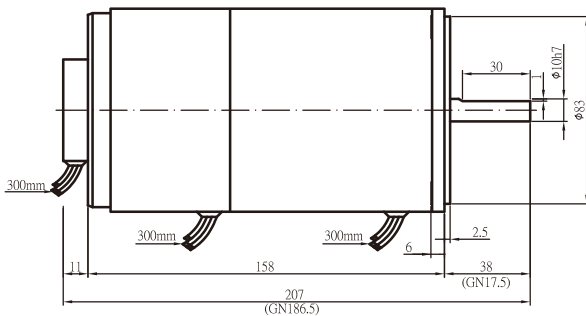
減速機  
SPEED REDUCER

零組件類  
COMPONENTS

# ELECTRO-MAGNETIC VARIABLE SPEED BRAKE MOTOR

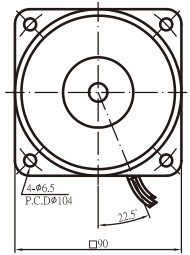
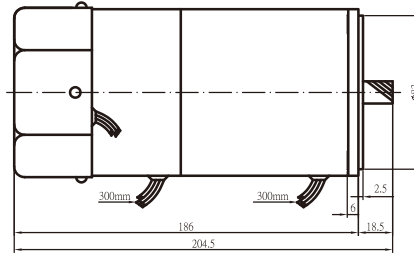
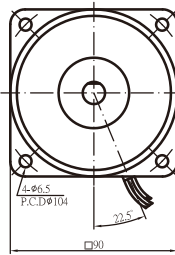
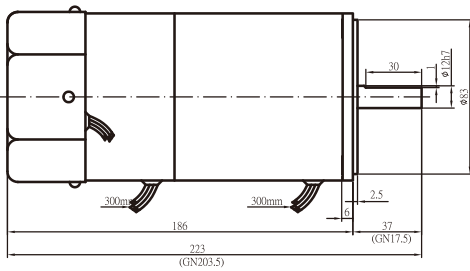
## 無段變速電磁剎車馬達

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



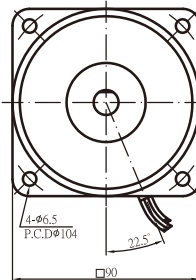
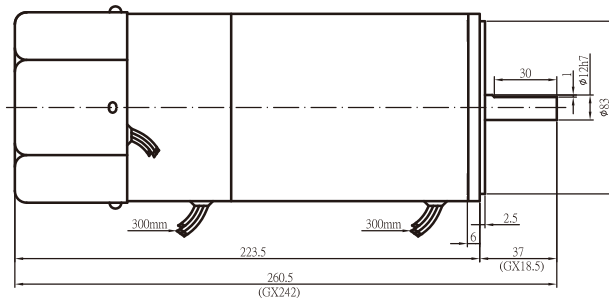
40W外型圖

40W機種名稱 TYPE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5IK40RA(GN)-AM	40	100/110	50/60	4	0.87/0.76	90~1400/90~1700	2.14/2.66	3.18/4.2	2.2/2.8	10	300
5IK40RA(GN)-CM	40	200/220	50/60	4	0.4/0.34	90~1400/90~1700	1.75/2.17	3.6/4.2	1.8/2.1	2.5	450
5IK40RA(GN)-CEM	40	230/240	50	4	0.32/0.32	90~1400	2.3/2.58	4.4/4.6	2.4/2.6	2.5	450



60W/60W-GX外型圖

60W/60W-GX機種名稱 TYPE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5IK60RA(GN)-AFM 5IK60RGX-AFM	60	100/110	50/60	4	1.8/1.12	90~1400/90~1700	2.6/2.94	5.6/6.9	3.5/4.0	16	300
5IK60RA(GN)-CFM 5IK60RGX-CFM	60	200/220	50/60	4	0.64/0.54	90~1400/90~1700	3.62/4.41	5.9/6.9	4.6/4.4	4	450
5IK60RA(GN)-CEFM 5IK60RGX-CEFM	60	230/240	50	4	0.56/0.55	90~1400	4.1/5.22	6.17/7.2	4.37/5.2	4	450



90W外型圖

90W機種名稱 TYPE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器CAPACITOR	
								1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5IK90RA(GX)-AFM	90	100/110	50/60	4	1.5/1.41	90~1400/90~1700	4.76/5.86	8.4/10.2	5/6.1	22	250
5IK90RA(GX)-CFM	90	200/220	50/60	4	0.76/0.72	90~1400/90~1700	4.3/4.21	8/8.7	4.4/4.4	5	450
5IK90RA(GX)-CEFM	90	230/240	50	4	0.66/0.68	90~1400	4.93/5.08	9.8/10.2	5.2/5.6	5	450

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。



## ELECTRONIC INSTANT BRAKE

電子式瞬時煞車器 (SB Series)

### ■ 使用頻率及界限

#### OPERATING FREQUENCY AND LIMITATION

雖然IN機形可用於寸動功能，如果使用頻率太高，馬達不斷的啟動、制動，會使溫度變高。所以馬達的表面溫度超過90°時，請暫停使用。

Although the "IN" model could be used for inch movement, a rise in temperature would result from frequent start-stop action of the motor. Please suspend operation temporarily if the surface temperature of the motor exceeds 90°C.

### ■ 安裝時應注意事項 INSTALLATION CAUTIONS.

- 一台馬達請用一台電子式制車器。
- 馬達出力不同結線方法也不同，所以請依47頁的結線圖結線。
- 開關SW1切向運轉側，馬達開始運作。切向制動側，馬達瞬時停止。
- 端子間有200V以上電壓，所以結線時請特別注意。
- 開關繼電器、閘刀開關請使用規格品。SB32-IN及SB32S-IN使用開關接點容量AC200V、5A以上。
- 結線圖範例，表示從馬達軸側看，為順時針方向旋轉的結線方式。  
若要作反時針旋轉之結線時：1. 感應式馬達：黃色線與白色導線對換。2. 可逆式馬達：切換SW2開關。  
CW：順時鐘方向旋轉 CCW：反時鐘方向旋轉
- 在正逆轉操作的場合，當制動開關(SW1)動作後，需有0.5秒以上才能切換方向開關(SW2)。
- 在制動頻繁的情況下，外接電阻會相當熱，安裝時需特別注意。
- 馬達起動時及制動操作後0.5秒內，請勿作反向旋轉之操作。
- 馬達為感性負荷，故接點關閉時會有火花產生，為了保護接點，必須連接如結線圖上突波吸收用之CR回路。  
Ro=5~200Ω(1/2W以上) Co=0.1~0.2 μF(400VAC以上)
- Apply only one electronic brake onto one motor.
- Motor wiring depends on motor output, please follow the wire diagram to make the wire connection.
- When SW1 is switched from "run" to "brake", the electronic brake is applied to stop the motor instantly.
- Be cautious about the 200 and above voltage among terminals when wiring.
- Apply industrial standard relay switch and gate switch. SB32-IN and SB32S-IN contact capacity is above AC200V, 5A.
- Wire-diagram, it is based on motor shaft point of view, as for clockwise rotate connectivity.  
For conduct counter-clock rotation: 1. induction motor: yellow line and white wire on the exchange. 2. reversible motor: switch SW2 switches.  
CW: clockwise CCW: counter-clockwise rotation
- For operated a reversible motor, it is require more than 0.5 second to switch its reversible mode.
- In the case of frequent braking, its external resistance will be very hot. For the installation, should pay particular attention.
- Within 0.5 seconds after motor start and operation, please do not perform reversible operation.
- To protect power connect spot from spark light when power on or off, it is require to enforce the connectivity via wire diagram such as surge absorber with CR circuit. Ro=5~200Ω(1/2W above) Co=0.1~0.2 μF(400VAC above)

### ■ 制動原理 BRAKING PRINCIPLES

電子制車回路是以被半波整流的脈動直流，流入馬達而產生之定向磁場，將馬達瞬間停止。制動電流是由控制器產生，僅在一短時間流入馬達，而後便無作用制動電流的流入時間(約0.5秒)是由控制器內的定時電路控制。因為是用電器特性來產生制車，所以無磨損，動作確實且壽命長。

Electronic brake circuit is design to introduce pulsated direct current rectified by the half wave into motor, to produce directional magnetic field and stop the motor instantly. Brake current is produced by the controller and introduced into motor in a very short time only. The time frame for brake current enter into the motor (approx 0.5 seconds) is controlled by timing circuit inside the controller. No friction created between parts, therefore lifespan is extended.

## 規格表

## SPECIFICATIONS

品名 MODEL	電壓(V) VOLTAGE(V)	相數 PHASE	制車保持力 BRAKE HOLDING FORCE	制車精度 BRAKE PRECISION	馬達出力(W) MOTOR OUTPUT	工作環境溫度 TEMPERATURE
SB31-IN	100 ~ 125	1φ 單相 Single Phase	0.5秒 / Second	200°	6 ~ 90	-10°C ~ +40°C
SB32-IN	200 ~ 240	1φ 單相 Single Phase	0.5秒 / Second	200°	6 ~ 90	-10°C ~ +40°C
SB32S-IN	200 ~ 240	3φ 三相 Three Phase	0.5秒 / Second	200°	6 ~ 90	-10°C ~ +40°C

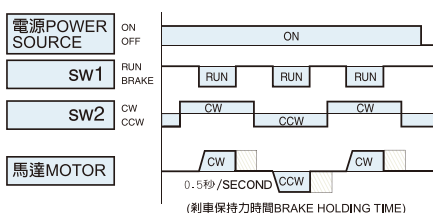
### ■ 絕緣阻抗 INSULATING RESISTANCE :

線圈與外殼間以DC 500V高阻計量測，測定值在10MΩ以上。  
Tested value at 10MΩ and above, measured by DC 500V hi-resistance meter between the coil and housing.

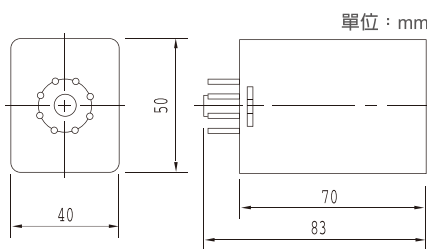
### ■ 絕緣耐力 INSULATION ENDURANCE :

線圈與外殼間以60Hz, 1kV加入一分鐘無異狀。  
No damages caused after 1kV at 60Hz was tested for one minute between the coil and housing.

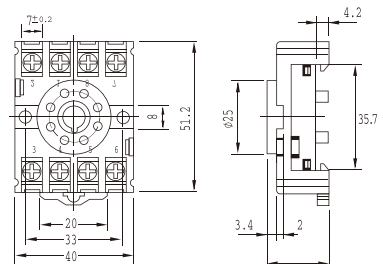
### ■ 電子式制車器作動時序圖 OPERATIONAL STEPS OF AN ELECTRONIC BRAKE



### ■ 外型尺寸圖 DRAWING DIMENSIONS



### ■ 腳座 8-PIN BASE :



泛用型馬達

速度控制型馬達

控制器

煞車馬達

離合煞車馬達

轉矩馬達

減速機

零件類



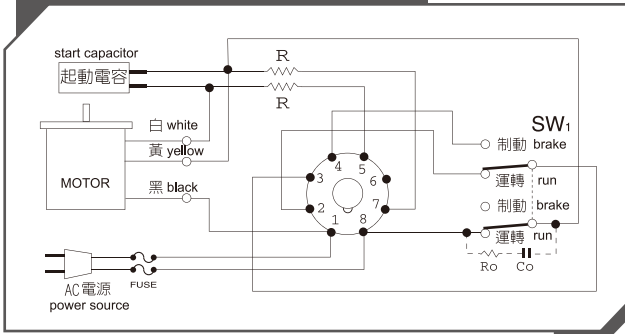
# ELECTRONIC INSTANT BRAKE

## 電子式瞬時煞車器

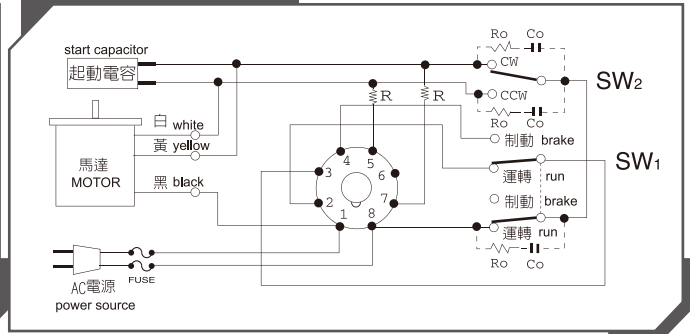
### ■ SB31-IN(單相110~125V) SINGLE PHASE 110~125V

### ■ SB32-IN(單相200~240V) SINGLE PHASE 200~240V

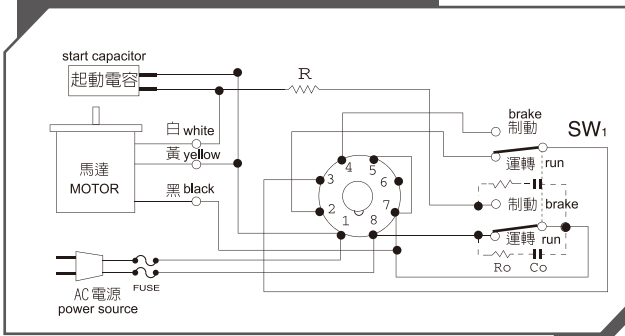
出力6W~25W，單方向運轉  
OUTPUT 6W~25W · SINGLE DIRECTION ROTATION



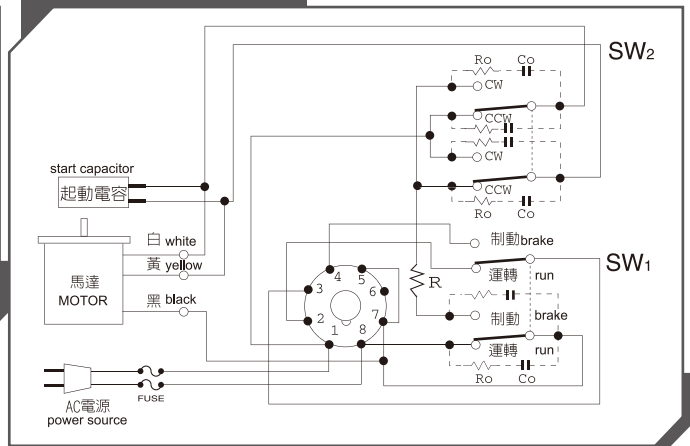
出力6W~25W，正逆轉  
OUTPUT 6W~25W · REVERSIBLE



出力40W~90W，單方向運轉  
OUTPUT 40W~90W · SINGLE DIRECTION ROTATION

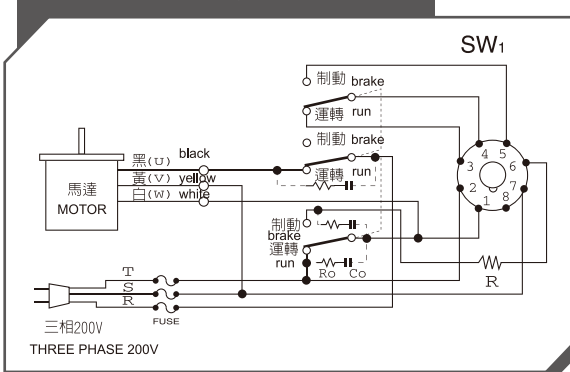


出力40W~90W，正逆轉  
OUTPUT 40W~90W · REVERSIBLE

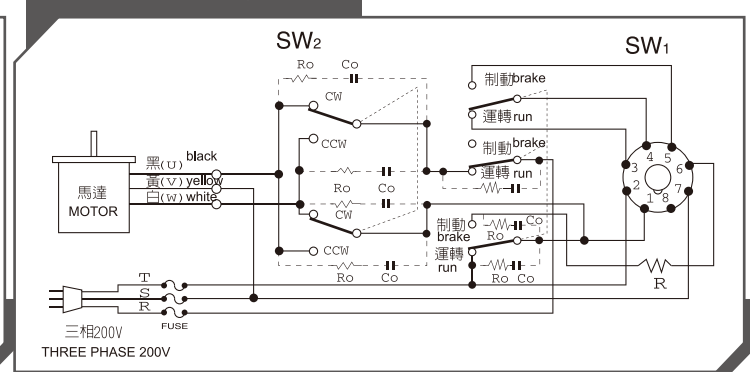


### ■ SB32S(三相200~240V) THREE PHASE 200~240V

出力25W~90W，單方向運轉



出力25W~90W，正逆轉



### ■ 外接電阻之選擇 SELECTION OF EXTERNAL RESISTANCE

- 出力6W~25W的外接電阻為20W/20Ω。(品名:DDR20W20Ω)
- 在制動頻率很高的情況下，外接電阻的溫度會很熱，請改用30W/20Ω的外接電阻(品名:DDR30W/20Ω)
- 出力40W~90W的外接電阻為50W/50Ω。(品名:DDR50W50Ω)
- 在制動頻率很高的情況下，外接電阻的溫度會很熱，請改用80W/50Ω的外接電阻。(品名:DDR80W50Ω)
- Output 6W~25W: external resistance 20W/20Ω. (Model:DDR20W20Ω)
- In frequent braking situation, temperature of external resistance would be very high. please use external resistance 30W/20Ω. (Model:DDR30W20Ω)
- Output 40W~90W: external resistance 50W/50Ω. (Model:DDR50W50Ω)
- In frequent braking situation, temperature of external resistance would be very high. please use external resistance 80W/50Ω. (Model:DDR80W50Ω)

## CLUTCH BRAKE MOTOR

### 離合刹車馬達



### 特徵 FEATURES

#### ■ 適用高頻率的間歇運轉 SUITABLE FOR HIGHLY FREQUENT START/STOP OPERATION

使用高精密度、高應答性的離合器及煞車器，最適合高頻率啟動/停止的機構。  
High precision and responsive clutch and brake are most suitable for frequent start/stop applications.

#### ■ 定位精準 PRECISE POSITIONING

當煞車器作動時，離合器會將馬達的連結跳開，因無馬達過轉問題，可使定位相當精準。

When the brake is in use, the clutch will separate the link from the brake, so there are no overruns, making positioning precise and accurate.

#### ■ 設計精簡 SIMPLE DESIGN

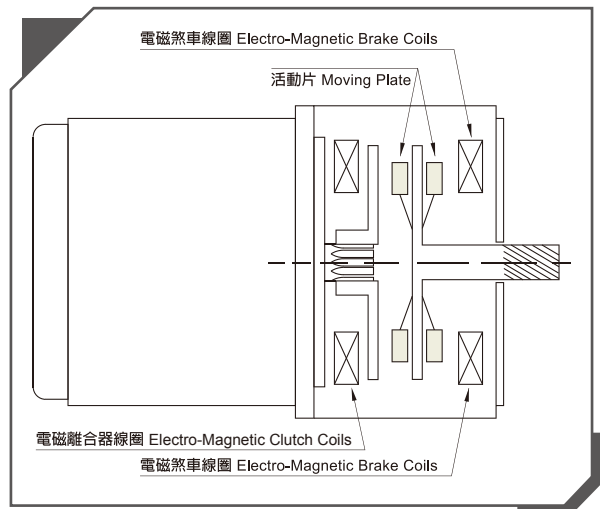
採用精巧、不佔空間的設計理念，不但操作容易，且能使機械美觀、簡潔。  
Adapting compact and space-saving design, making it easy to operate and looking elegant.

### 離合刹車器的構造 CONSTRUCTION OF CLUTCH BRAKER

離合刹車器是使用精密離合器與煞車器加以組合，適用於高頻率的啟動/停止。在與減速機結合後，很容易達成位置決定、寸動及間接輸送等動作。  
A clutch brake is a precision clutch assembled with a brake, suitable for highly frequent start/stop operation. After adjoining with a speed reducer, it can easily accomplish actions such as positioning, inch movement and interval transportation.

#### ■ 離合刹車器的規格 SPECIFICATION OF THE CLUTCH BRAKER

機型 MODELS	GK機型 GK TYPE		GS機型 GS TYPE	
	刹車器 BRAKER	離合器 CLUTCH	刹車器 BRAKER	離合器 CLUTCH
靜摩擦力矩 (kg.cm) STATIC FRICTION TORQUE	10	10	15	15
動摩擦力矩 (kg.cm) DYNAMIC FRICTION TORQUE	7	7	10	10
額定電壓 (DC-V) RATED VOLTAGE	24	24	24	24
容量(W) CAPACITY (AT 20°C)	8	6	8	6
動作程度 BRAKE FREQUENCY	最大100回/分鐘 Max. : 100 rounds /min			



#### ■ 絕緣阻抗 INSULATING RESISTANCE :

線圈與外殼間以DC 500V高阻計量測，測定值在10MΩ以上。  
Tested value at 10MΩ and above, measured by DC 500V hi-resistance meter between the coil and housing.

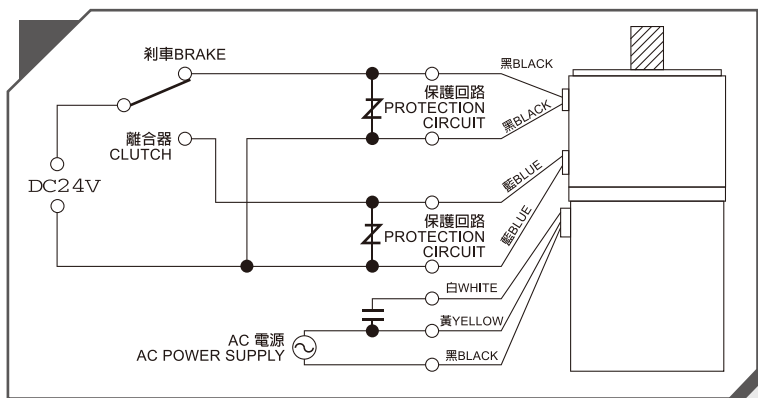
#### ■ 絕緣耐力 INSULATION ENDURANCE :

線圈與外殼間以60Hz, 1kV加入一分鐘無異狀。  
No damages caused after 1kV at 60Hz was tested between the coil and housing.

### 離合刹車器的結線圖 WIRING OF A CLUTCH BRAKE

馬達電源(AC)與離合器、煞車用電源(DC24V)必須分開。馬達在運轉狀態時，開關切向離合器側時，出力軸開始迴轉並將動力傳出。切向煞車側時即時停止，且保有很大的保持力。若將DC電源切斷時，出力軸可以自由轉動。

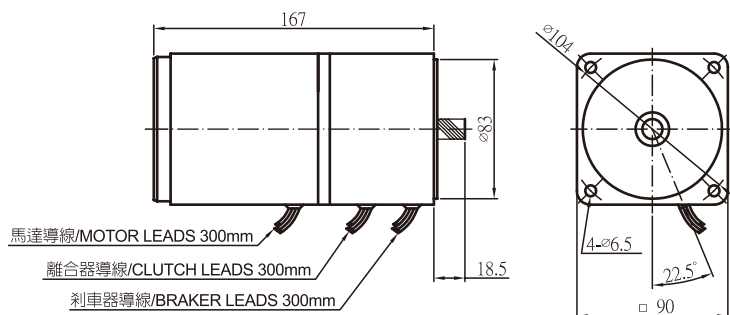
The power source for the motor (AC) and the clutch/brake (DC24V) must be separated. As the switch is on the clutch side when the motor is rotating, the output shaft will start rotating and transmits power accordingly. As the switch is on the brake side, it would stop instantly and hold great retention force. If the DC power is shut off, the output shaft can rotate freely.



# INDUCTION CLUTCH BRAKE MOTOR

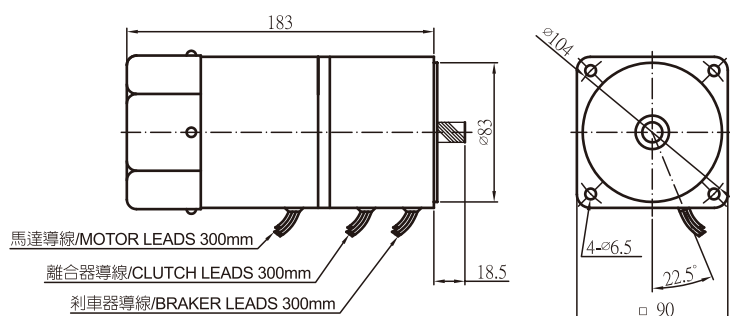
離合剎車 連續運轉型

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



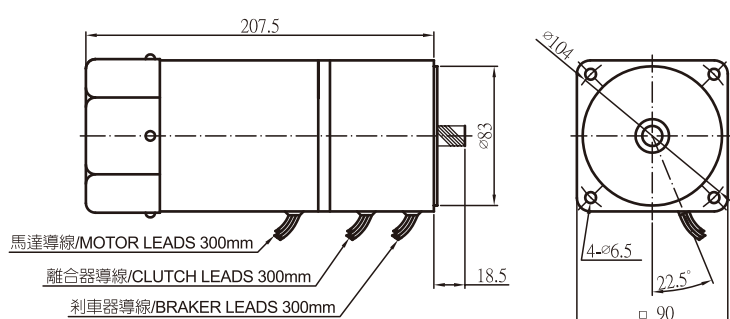
40W

40W機型MODEL		出力(W)	電壓(V)	頻率(HZ)	極數(P)	額定轉數(rpm)	額定時間	起動轉矩(Kg.cm)	額定轉矩(Kg.cm)	額定電流(A)	電容量(μF)
馬達MOTOR	離合剎車器 CLUTCH BRAKE	OUTPUT	VOLTAGE	FREQ.	POLE	RATED SPEED	RATED TIME	STARTING TORQUE	RATED TORQUE	RATED CURRENT	CAPACITY
5IK40GK-A	MBC90GN-DC24V	40	1ø100/110	50/60	4	1250/1600	連續Continuous	2.14/2.66	3.17/2.41	0.87/0.76	10/300V
5IK40GK-C	MBC90GN-DC24V	40	1ø200/220	50/60	4	1300/1650	連續Continuous	1.75/2.17	3.01/2.35	0.4/0.34	2.5/450V
5IK40GK-CE	MBC90GN-DC24V	40	1ø230/240	50	4	1350/1350	連續Continuous	2.3/2.58	2.87/2.84	0.32/0.32	2.5/450V
5IK40GK-S	MBC90GN-DC24V	40	3ø220	60	4	1400/1600	連續Continuous	10.51/7.83	2.83/2.4	0.29/0.27	-
5IK40GK-U	MBC90GN-DC24V	40	3ø380	60	4	1350/1600	連續Continuous	9.25/6.68	2.85/2.45	0.16/0.15	-



60W

60W機型MODEL		出力(W)	電壓(V)	頻率(HZ)	極數(P)	額定轉數(rpm)	額定時間	起動轉矩(Kg.cm)	額定轉矩(Kg.cm)	額定電流(A)	電容量(μF)
馬達MOTOR	離合剎車器 CLUTCH BRAKE	OUTPUT	VOLTAGE	FREQ.	POLE	RATED SPEED	RATED TIME	STARTING TORQUE	RATED TORQUE	RATED CURRENT	CAPACITY
5IK60GS-AF	MBC90GX-DC24V	60	1ø100/110	50/60	4	1200/1650	連續Continuous	2.6/2.94	5.0/3.5	1.8/1.12	16/300V
5IK60GS-CF	MBC90GX-DC24V	60	1ø200/220	50/60	4	1250/1600	連續Continuous	3.62/4.41	4.64/3.63	0.64/0.54	4/450V
5IK60GS-CEF	MBC90GX-DC24V	60	1ø230/240	50	4	1300/1350	連續Continuous	4.14/5.22	4.56/4.40	0.56/0.55	4/450V
5IK60GS-SF	MBC90GX-DC24V	60	3ø220	60	4	1300/1550	連續Continuous	13.72/10.70	4.47/3.77	0.41/0.39	-
5IK60GS-UF	MBC90GX-DC24V	60	3ø380	60	4	1400/1550	連續Continuous	14.33/10.15	4.2/3.79	0.21/0.22	-



90W

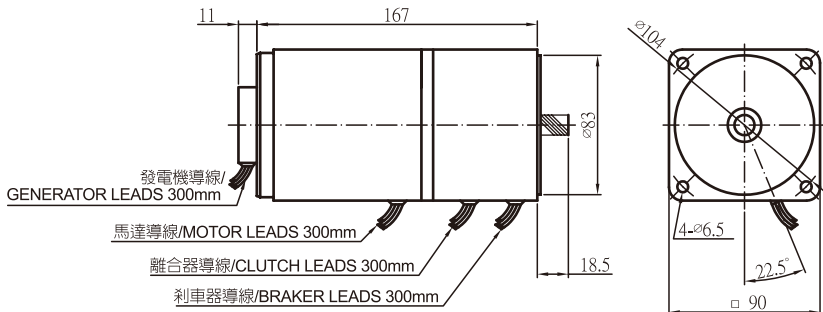
90W機型MODEL		出力(W)	電壓(V)	頻率(HZ)	極數(P)	額定轉數(rpm)	額定時間	起動轉矩(Kg.cm)	額定轉矩(Kg.cm)	額定電流(A)	電容量(μF)
馬達MOTOR	離合剎車器 CLUTCH BRAKE	OUTPUT	VOLTAGE	FREQ.	POLE	RATED SPEED	RATED TIME	STARTING TORQUE	RATED TORQUE	RATED CURRENT	CAPACITY
5IK90GS-AF	MBC90GX-DC24V	90	1ø100/110	50/60	4	1300/1650	連續Continuous	4.76/5.86	6.68/5.33	1.5/1.41	22/250V
5IK90GS-CF	MBC90GX-DC24V	90	1ø200/220	50/60	4	1300/1650	連續Continuous	4.3/4.21	6.89/5.34	0.76/0.72	5/450V
5IK90GS-CEF	MBC90GX-DC24V	90	1ø230/240	50	4	1350/1350	連續Continuous	4.93/5.08	6.44/6.42	0.66/0.68	5/450V
5IK90GS-SF	MBC90GX-DC24V	90	3ø220	60	4	1400/1650	連續Continuous	23.3/18.25	6.4/5.3	0.7/0.6	-
5IK90GS-UF	MBC90GX-DC24V	90	3ø380	60	4	1400/1650	連續Continuous	23.3/18.14	6.3/5.3	0.4/0.3	-

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

## VARIABLE SPEED CLUTCH BRAKE MOTOR

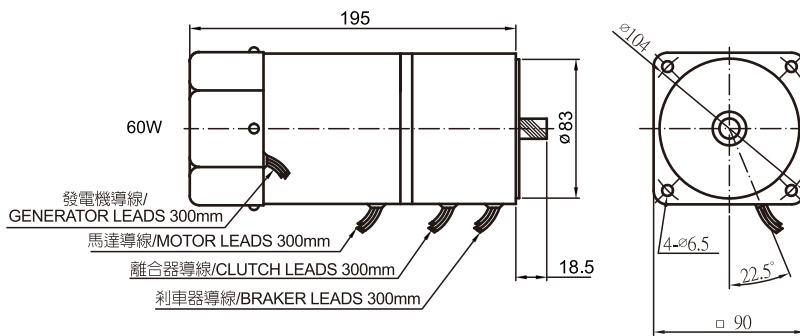
離合剎車 無段變速型

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



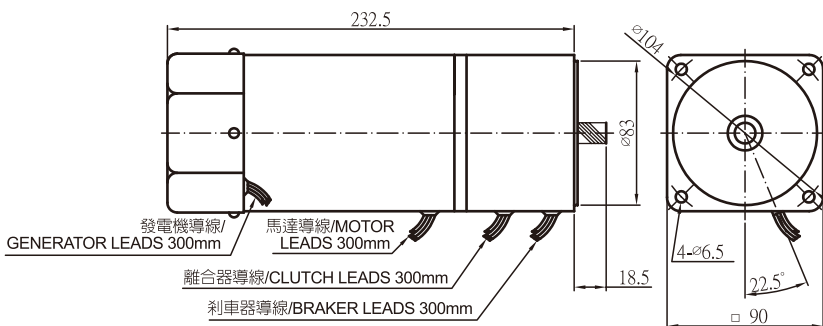
40W

馬達 MOTOR	離合剎車器 CLUTCH BRAKE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器 CAPACITOR	
									1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5IK40RGK-A	MBC90GN-DC24V	40	100/110	50/60	4	0.87/0.76	90~1400/90~1700	2.14/2.66	3.18/4.2	2.2/2.8	10	300
5JK40RGK-C	MBC90GN-DC24V	40	200/220	50/60	4	0.4/0.34	90~1400/90~1700	1.75/2.17	3.6/4.2	1.8/2.1	2.5	450
5IK40RGK-CE	MBC90GN-DC24V	40	230/240	50	4	0.32/0.32	90~1400	2.3/2.58	4.4/4.6	2.4/2.6	2.5	450



60W

馬達 MOTOR	離合剎車器 CLUTCH BRAKE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器 CAPACITOR	
									1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5IK60RGK-AF	MBC90GN-DC24V	60	100/110	50/60	4	1.8/1.12	90~1400/90~1700	2.6/2.94	5.6/6.9	3.5/4.0	16	300
5JK60RGK-CF	MBC90GN-DC24V	60	200/220	50/60	4	0.64/0.54	90~1400/90~1700	3.62/4.41	5.9/6.9	4.6/4.4	4	450
5IK60RGK-CEF	MBC90GN-DC24V	60	230/240	50	4	0.56/0.55	90~1400	4.14/5.22	7.2	5.2	4	450



90W

馬達 MOTOR	離合剎車器 CLUTCH BRAKE	額定出力(W) RATED OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	極數(P) POLE	電流(A) CURRENT	調速範圍(rpm) ADJUSTABLE RANGE	起動轉矩(Kg.cm) STARTING TORQUE	容許轉矩(Kg.cm)/ 設定迴轉數 MAXIMUM TORQUE/ PRE-SET TURNINGS		電容器 CAPACITOR	
									1200rpm	90rpm	容量(μF) CAPACITY	耐電壓(VAC) WITHSTAND VOLTAGE
5IK90RGS-AF	MBC90GX-DC24V	90	100/110	50/60	4	1.5/1.41	90~1400/90~1700	4.76/5.86	8.4/10.2	5/6.1	22	250
5JK90RGS-CF	MBC90GX-DC24V	90	200/220	50/60	4	0.76/0.72	90~1400/90~1700	4.3/4.21	8/8.7	4.4/4.4	5	450
5IK90RGS-CEF	MBC90GX-DC24V	90	230/240	50	4	0.66/0.68	90~1400	4.93/5.08	9.8/10.2	5.2/5.6	5	450

### 備註 :

1. 選用離合器的馬達因停動頻率及停動時間會產生很大的慣性矩，因此在選用結合齒箱時，請詳實計算本身機器上的反饋慣性矩，並告知本公司，讓本公司為貴公司提供通用之齒箱。
2. 因瞬間啟動及停止會產生很大的電流，致使馬達溫度急速升高，固停動頻率不可大於20次/分，GK離合器剎車之出力軸一律為GN軸，而GS離合器剎車之出力軸一律為GX軸。

### NOTES :

1. A clutch motor has great inertia according to the stop frequency and interval. When selecting a speed reducer, please calculate the feedback inertia accurately on your machine and advise us, so we can provide you the applicable model of speed reducer.
2. Instant start and stop will result in great currents, causing the temperature to rise rapidly, thus the start-stop frequency could not exceed 20 times per minute. GK model clutch brake motors have GN shafts, and GS model clutch brake motors have GX shafts.

泛用型馬達

速度控制型馬達

控制器

煞車馬達

離合煞車馬達

轉矩馬達

減速機

零組件類



# TORQUE MOTOR

## 轉矩馬達

### 轉矩馬達的特性

### CHARACTERISTICS OF THE TORQUE MOTOR

- 轉矩馬達具有強大的啟動迴轉扭力與垂下特性，在迴轉數—轉矩特性之全區域內，特別是在低速及拘束時，皆能安定運轉。
- 馬達的迴轉扭力與電壓成平方比，變更供給電壓即可改變迴轉速度。適用於低電壓時，使低速運轉中的物件逆迴轉，而電壓提升時提供高速運轉之用途。
- 轉矩馬達的設計不同於一般馬達，其拘束狀態為在低速運轉時，能得到穩定轉矩。適合在需要強制性靜止轉矩之場合或用於平常作高速運轉工程結束時，具保持拘束狀態用。電壓60V時可作連續運轉，在60V以上即需作短時間額定，110V時為5分鐘額定。※使用於拘束運轉時，其出力扭力會增大，請勿超越齒輪所容許之迴轉扭力，也務必不要碰撞停止，以免其衝擊力會造成減速機齒輪的毀損。
- 適用於捲取作業。持續性且一定速度的物品，以一定張力捲取。當捲取輪軸外徑變大時，迴轉扭力需增大，而速度則減慢。
- 在迴轉速—轉矩之特性的範圍內，與馬達運轉方向相反旋轉時，亦可當作剎車使用。
- A torque motor possesses strong starting torque and sloping characteristics. Within the full range of revolution-torque curve, especially under low speed and constraint, it can rotate steadily.
- The motor torque changes approximately proportion to the square of the voltage. The speed can be changed easily by varying the voltage supplied to the motor.
- The torque motor is designed differently than other motors. It can obtain stable torque in low speed under a restrained condition. Suitable in force static-torque situation, or restraints mode is required when the high-speed operation is finished. Continuously operation is available at 60V, rated for short interval operation is required above 60V, and 5 minutes rated at 110V. ※When operated under the restraint mode with speed reducer, the motor output torque would increase greatly. Please do not exceed the allowable torque of the speed reducer, and NEVER strike with force to stop the motor to prevent impact damage to the speed reducer.
- In an application where an object is released continuously at a constant speed and wound up with constant tension, the torque must be doubled and the speed must be halved if the diameter of the winding spool is doubled.
- Within the range of the revolution-torque characteristic curve, the motor can be used as a brake when the rotating motion is in the opposite direction.

### 轉矩馬達的種類

### TYPES OF THE TORQUE MOTOR

#### ■ 內藏轉矩馬達 REGULATOR BUILT-IN TYPE

接線箱內藏電壓調節器，可依附屬的速度設定器簡單地控制馬達速度，無須將電壓調節器架設於外部，安裝更簡便。  
The voltage regulator is stored inside the terminal box, where it can control the motor speed easily with the speed controller it is attached to. No need to attach the regulator on the exterior of the motor, making the installation more convenient.

#### ■ 標準型轉矩馬達 STANDARD TYPE

必須於外部架設電壓調節器，以調整速度與扭力。  
External voltage regulator is required to adjust speed and torque.

機型MODEL	額定時間 RATED TIME	最大出力(W) MAX. OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	額定轉速(rpm) RATED SPEED	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
2TK3(C)A(GN)-AP	5分min.連續Continuous	3/1	110/60	60	990/570	0.59/0.33	0.19/0.14	0.44/0.37	6 μ f/300V
	5分min.連續Continuous	3/1	110/60	50	1150/880	1.02/0.39	0.26/0.11	0.47/0.33	6 μ f/300V
3TK6(C)A(GN)-AP	5分min.連續Continuous	6/2	110/60	60	1550/1070	2.23/0.57	0.38/0.18	0.76/0.44	10 μ f/300V
	5分min.連續Continuous	6/2	110/60	50	1250/840	2.20/0.58	0.47/0.23	0.59/0.36	10 μ f/300V
4TK10(C)A(GN)-AP	5分min.連續Continuous	10/3	110/60	60	1500/700	2.87/0.99	0.65/0.41	0.91/0.61	12 μ f/300V
	5分min.連續Continuous	10/3	110/60	50	1140/1050	2.94/1.15	0.86/0.28	0.67/0.49	12 μ f/300V
5TK20(C)A(GN)-AP	5分min.連續Continuous	20/5	110/60	60	1340/1170	4.61/2.37	1.45/0.42	1.87/1.25	20 μ f/300V
	5分min.連續Continuous	20/5	110/60	50	1100/1010	4.57/1.95	1.76/0.48	1.36/0.92	20 μ f/300V
5TK40(C)A(GX)-AFP	5分min.連續Continuous	40/10	110/60	60	1510/1280	7.89/2.09	2.58/0.76	1.55/0.97	24 μ f/300V
	5分min.連續Continuous	40/10	110/60	50	1360/680	6.9/2.37	0.72/1.44	1.10/0.92	24 μ f/300V

機型MODEL	額定時間 RATED TIME	最大出力(W) MAX. OUTPUT	電壓(V) VOLTAGE	頻率(HZ) FREQ.	額定轉速(rpm) RATED SPEED	起動轉矩(Kg.cm) STARTING TORQUE	額定轉矩(Kg.cm) RATED TORQUE	額定電流(A) RATED CURRENT	電容量(μF) CAPACITY
2TK3(C)A(GN)-CP	5分min.連續Continuous	3/1	220/120	60	1170/1180	0.63/0.36	0.23/0.08	0.18/0.14	1 μ f/450V
	5分min.連續Continuous	3/1	220/120	50	1070/650	0.76/0.32	0.27/0.15	0.15/0.10	1 μ f/450V
3TK6(C)A(GN)-CP	5分min.連續Continuous	6/2	220/120	60	1240/1050	1.38/0.62	0.47/0.18	0.33/0.22	2 μ f/450V
	5分min.連續Continuous	6/2	220/120	50	1100/1180	1.63/0.7	0.54/0.17	0.27/0.20	2 μ f/450V
4TK10(C)A(GN)-CP	5分min.連續Continuous	10/3	220/120	60	1200/1300	2.76/1.23	0.80/0.22	0.37/0.28	2.5 μ f/450V
	5分min.連續Continuous	10/3	220/120	50	1050/1020	2.84/1.19	0.91/0.28	0.29/0.21	2.5 μ f/450V
5TK20(C)A(GN)-CP	5分min.連續Continuous	20/5	220/120	60	1350/1240	3.97/1.24	1.44/0.39	0.5/0.32	3 μ f/450V
	5分min.連續Continuous	20/5	220/120	50	1070/760	4.26/1.35	1.83/0.65	0.37/0.24	3 μ f/450V
5TK40(C)A(GX)-CFP	5分min.連續Continuous	40/10	220/120	60	1480/1360	7.9/2.4	2.63/0.72	0.45/0.5	6 μ f/450V
	5分min.連續Continuous	40/10	220/120	50	1100/900	7.1/3.2	3.53/1.1	0.71/0.54	6 μ f/450V

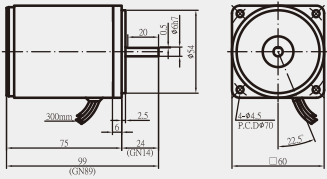
備註：電壓如超過額定電壓，須另行訂購。 NOTES：Custom order is required when applied voltage exceeding the rated voltage.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

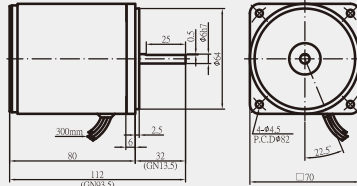


## TORQUE MOTOR 轉矩馬達

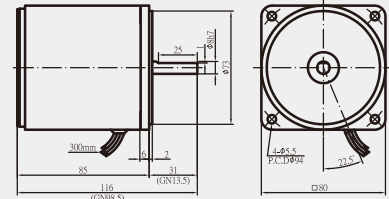
- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



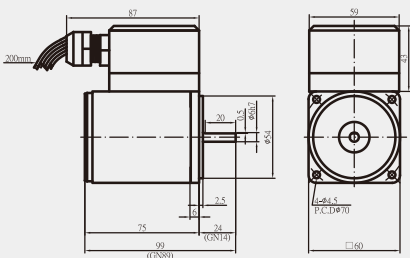
**3W 2TK3A(GN)-AP(CP)**



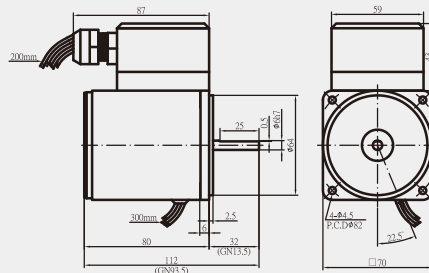
**6W 3TK6A(GN)-AP(CP)**



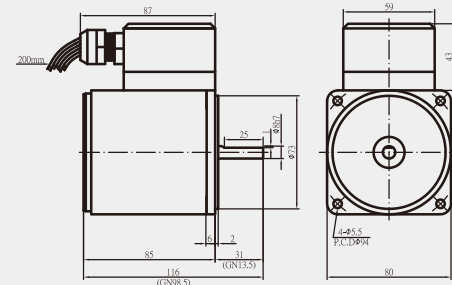
**10W 4TK10A(GN)-AP(CP)**



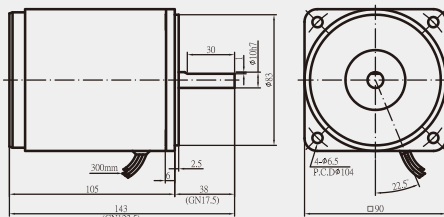
**3W 2TK3CA(GN)-AP(CP)**



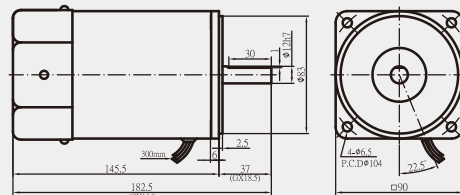
**6W 3TK6CA(GN)-AP(CP)**



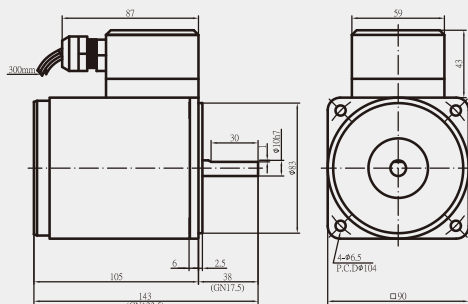
**10W 4TK10CA(GN)-AP(CP)**



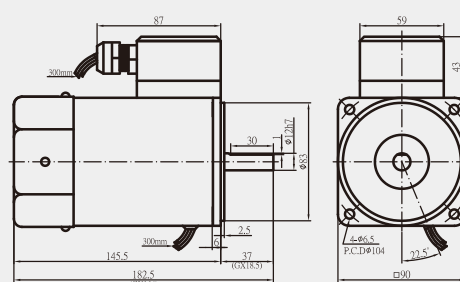
**20W 5TK20A(GN)-AP(CP)**



**40W 5TK40A(GN/GX)-AP(CP)**



**20W 5TK20CA(GN)-AP(CP)**



**40W 5TK40CA(GN/GX)-AP(CP)**

# SPEED REDUCER

## 減速機

- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm

### 減速機之選定 HOW TO SELECT A SPEED REDUCER

#### ■ 與減速機直結後的回轉數及轉矩 ROTATION AND TORQUE GIVEN FROM CONJUNCTION WITH SPEED REDUCER

與減速機直結後的回轉數及轉矩可由以下公式算出  
Following is the calculation formula:

$$\text{回轉速 Rotations: } N_G = \frac{N_M}{i}$$

$$\text{轉矩 Torque: } T_G = T_M \cdot i \cdot \eta$$

$N_G$  : 加減速機後之回轉數 Rotations after conjunction with speed reducer (rpm)

$N_M$  : 馬達本體之回轉數 Rotations of Motor (rpm)

$i$  : 減速機減速比 Speed Reducer's reduce ratio

$T_G$  : 加減速機後之轉矩 Torque after conjunction with speed reducer (kg·m)

$T_M$  : 馬達本體之轉矩 Torque of Motor (kg·m)

$\eta$  : 減速機之傳動效率 The transmission efficiency of the Speed Reducer

#### ■ 最大容許轉矩 MAXIMUM TORQUE ALLOWED

限於材料或其他條件的限制，減速機能承受的轉矩是有極限的，當減速比變大時，請參考後面各章節。

The maximum torque a speed reducer can tolerate is limited due to materials or other specs. Please see the specification of speed reducer for maximum torque allowed at different ratio.

#### ■ 容許側向負載及容許軸向負載

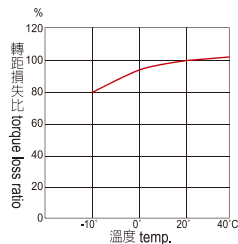
##### ALLOWABLE RADIAL LOAD AND AXIAL LOAD

所謂側向負載，就是出力軸在1/2處可以承受的彎曲負載，一般使用於以鏈條連結的機構。若是使用的連結器傳動的方式，可以不考慮。因為側向負載與軸向負載會影響減速機的壽命及強度，請勿超負載使用。

Radial load refers to the bending load of output shaft at the 1/2 point, commonly used in units linked by chains. Radial load can be disregarded if a coupling is used. Do not over-load since radial load and axial load may affect service life and strength.

#### ■ 依溫度調整減速比 ADJUSTED THE SPEED REDUCER RATIO VIA ENVIRONMENT TEMPERATURE

環境溫度對於減速機的傳動效率有明顯的影響。上表的傳動效率是在室溫20°C時的量測值。當機台使用在寒帶地區時，請用右表的轉矩損失比來乘標示的轉矩。例如：若機台使用在-10°C的環境，其轉矩將減少20%。(僅供參考用)



Transmission efficiency of a speed reducer apparently does affected by the environment temperature. The graphic display the torque loss percentage at different ambient temperature (for reference only).

#### ■ 負載形態與減速機壽命 LOAD PATTERNS VS. LIFESPAN OF SPEED REDUCER

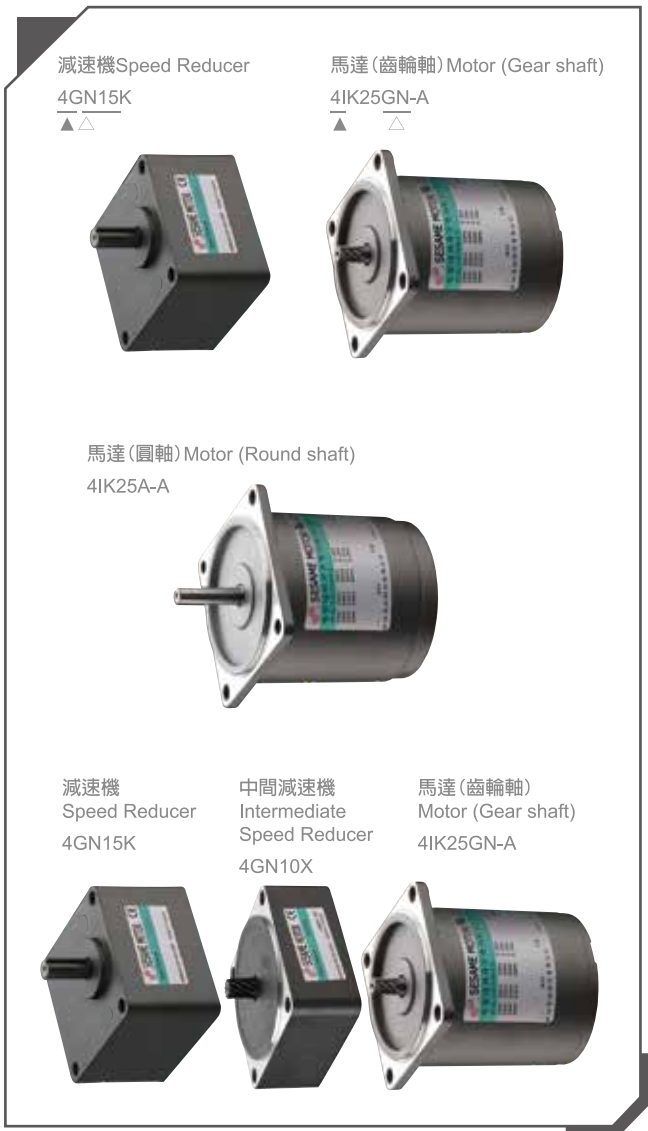
減速機的壽命會因負載方式，每日運轉時間及軸承種類的不同而改變。下表是假設減速機的負載低於最大容許轉矩。(僅供設計人員參考用)

Speed Reducer lifespan will be vary by ways of loading including but not limit to operation time frame, different type of bearing. The following table assumes that the load gear is under the maximum permissible torque. (Reference for engineers)

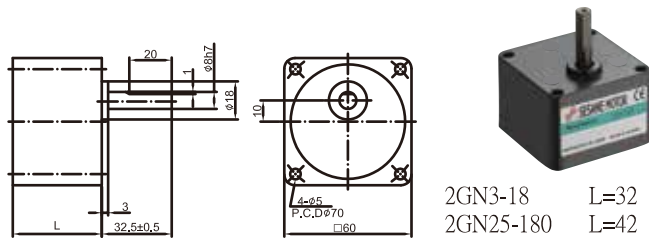
單位：小時 hrs

負載形態 LOAD PATTERN	含油軸承 BEARING			滾珠軸承 BALL BEARING			應用說明 Application instructions.
	5 hrs/day	8 hrs/day	24 hrs/day	5 hrs/day	8 hrs/day	24 hrs/day	
固定負載 FIXED LOAD	2000	1500	1000	6250	5000	3400	單方向運轉，如，輸送機。 Operated in one direction, such as conveyors.
輕微衝擊 SLIGHT IMPACT	1500	1250	800	4200	3400	2500	經常起動/停止的機構，凸輪運轉。 Frequent start/stop, ex. cam operator.
強烈衝擊 STRONG IMPACT	800~1000	700~1000	600~700	2000~2500	1700~2500	1400~1700	可逆馬達的瞬間正逆轉，用 車器瞬間剎車。 Reversible motors, instant moment reversed, with brake system in an instant brake.

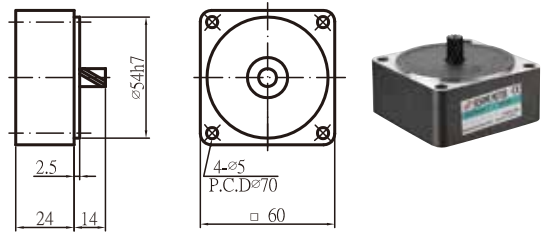
#### ■ 馬達有圓軸及齒輪軸兩種，只有齒輪軸才能夠與減速機直結。 MOTOR EQUIP WITH ROUND SHAFT AND GEAR SHAFT, ONLY GEAR SHAFT CAN CONJUNCT WITH SPEED REDUCER.



## 2 GN KE . 2 GN 減速機 / SPEED REDUCER

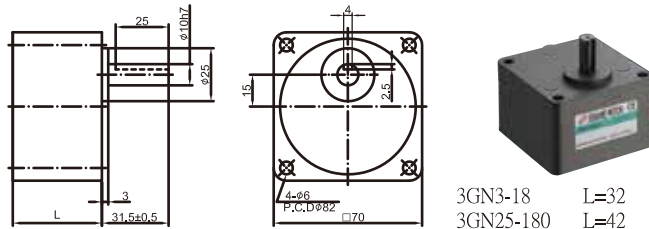


## 2GN10X . 2GN10XK 中間減速機 / INTERMEDIATE SPEED REDUCER

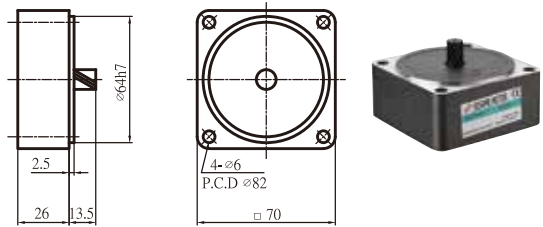


迴轉速 / SPEED(rpm)	500	300	200	180	150	120	100	60	50	30	20	15	10
減速比 / SPEED REDUCTION RATIO 50HZ	3	5	7.5	-	10	12.5	15	25	30	50	75	100	150
減速比 / SPEED REDUCTION RATIO 60HZ	3.6	6	9	10	-	15	18	30	36	60	90	120	180
最大容許轉矩 / (kgf.cm) MAX. TORQUE	1.1	1.8	2.7	3.0	3.9	4.5	5.4	8.1	9.7	15	23	25	25

## 3 GN KE . 3 GN 減速機 / SPEED REDUCER

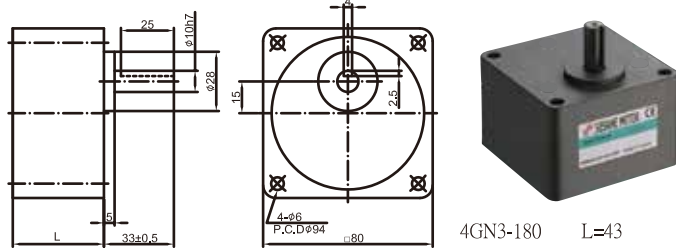


## 3GN10X . 3GN10XK 中間減速機 / INTERMEDIATE SPEED REDUCER

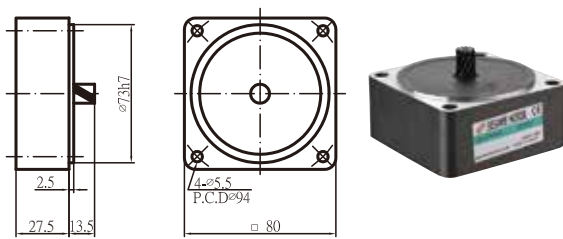


迴轉速 / SPEED(rpm)	500	300	200	180	150	120	100	60	50	45	37.5	30	20	15	10
減速比 / SPEED REDUCTION RATIO 50HZ	3	5	7.5	-	10	12.5	15	25	30	-	40	50	75	100	150
減速比 / SPEED REDUCTION RATIO 60HZ	3.6	6	9	10	-	15	18	30	36	40	-	60	90	120	180
最大容許轉矩 / (kgf.cm) MAX. TORQUE	2.6	4.4	6.6	7.4	9.8	11	13	20	24	24	32	36	50	50	50

## 4 GN KE . 4 GN 減速機 / SPEED REDUCER

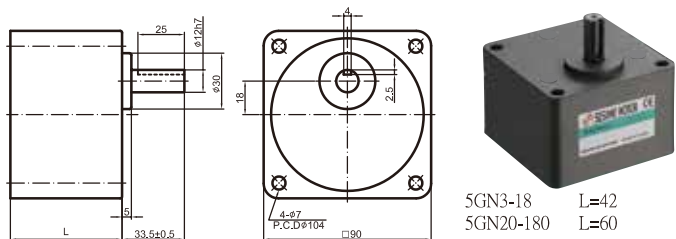


## 4GN10X . 4GN10XK 中間減速機 / INTERMEDIATE SPEED REDUCER

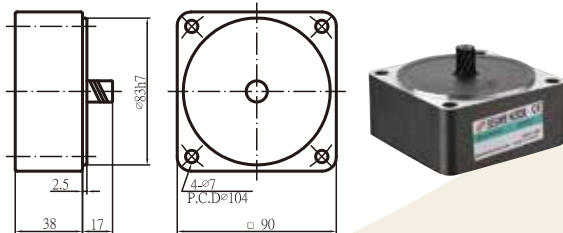


迴轉速 / SPEED(rpm)	500	300	200	180	150	120	100	60	50	45	37.5	30	20	15	10
減速比 / SPEED REDUCTION RATIO 50HZ	3	5	7.5	-	10	12.5	15	25	30	-	40	50	75	100	150
減速比 / SPEED REDUCTION RATIO 60HZ	3.6	6	9	10	-	15	18	30	36	40	-	60	90	120	180
最大容許轉矩 / (kgf.cm) MAX. TORQUE	4.4	7.4	11	12	15	11	22	33	40	40	50	60	80	80	80

## 5 GN KE . 5 GN 減速機 / SPEED REDUCER



## 5GN10X . 5GN10XK 中間減速機 / INTERMEDIATE SPEED REDUCER



迴轉速 / SPEED(rpm)	500	300	200	180	150	120	100	90	75	60	50	45	37.5	30	20	15	10
減速比 / SPEED REDUCTION RATIO 50HZ	3	5	7.5	-	10	12.5	15	-	20	25	30	-	40	50	75	100	150
減速比 / SPEED REDUCTION RATIO 60HZ	3.6	6	9	10	-	15	18	20	-	30	36	40	-	60	90	120	180
最大容許轉矩 / (kgf.cm) MAX. TORQUE	10	17	26	29	36	43	52	52	65	78	93	93	100	100	100	100	100



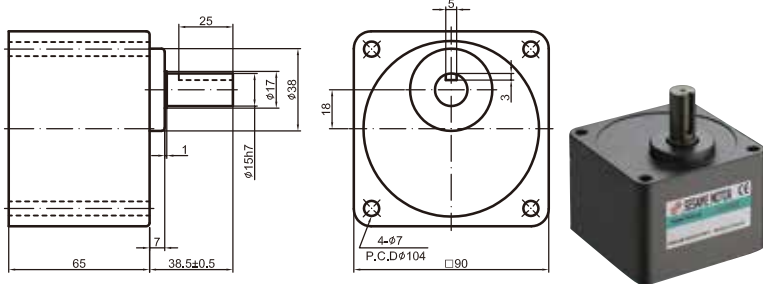
# SPEED REDUCER

## 減速機

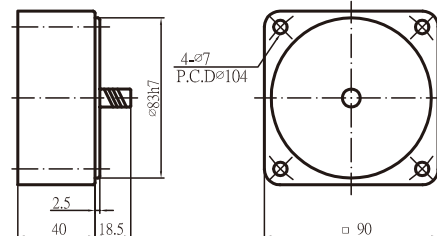
- 外形圖與規格表
- OUTLINE & SPECIFICATION
- 單位/UNIT : mm



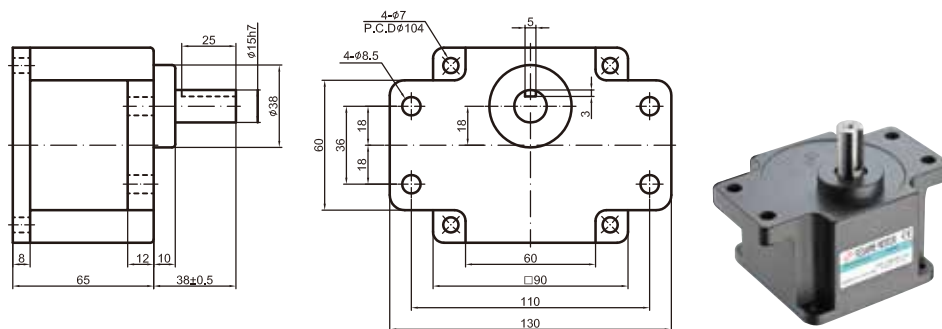
### ■ 5 GX□KB 減速機 / SPEED REDUCER



### ■ 5GX10XK 中間減速機 / INTERMEDIATE SPEED REDUCER

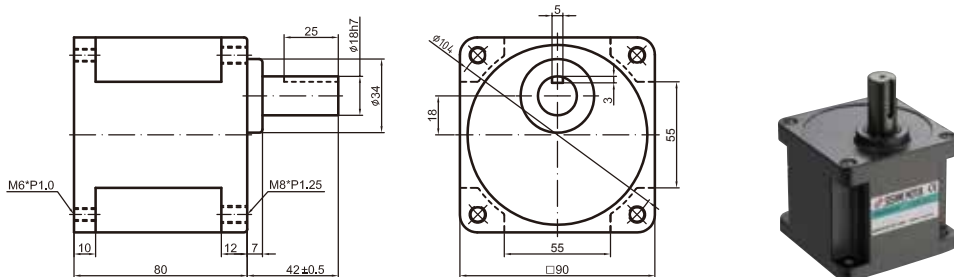


### ■ 5 GX□K 減速機 / SPEED REDUCER



迴轉速 / SPEED (rpm)	500	300	200	120	100	90	75	60	50	30	20	15	10	9	7.5
減速比 / SPEED REDUCTION RATIO 50HZ	3	5	7.5	12.5	15	-	20	25	30	50	75	100	150	-	200
減速比 / SPEED REDUCTION RATIO 60HZ	3.6	6	9	15	18	20	-	30	36	60	90	120	180	200	-
最大容許轉矩 / (kgf.cm) MAX. TORQUE	15	26	38	57	69	69	86	103	124	200	200	200	200	200	200

### ■ 5 GX□KBH 重力減速機 / GRAVITY FORCE TYPE REDUCER



迴轉速 / SPEED (rpm)	30	20	15	10	9	7.5
減速比 / SPEED REDUCTION RATIO 50HZ	50	75	150	150	-	200
減速比 / SPEED REDUCTION RATIO 60HZ	60	90	180	120	200	-
最大容許轉矩 / (kgf.cm) MAX. TORQUE	350	350	350	350	350	350

#### 說明 :

1. 減速機品名中□放入減速比。
2. 迴轉速是以馬達的同步轉速為基準(50 HZ : 1500rpm, 60HZ : 1800rpm)除以減速比; 實際迴轉速應依負載之大小減少2%~20%。
3. 標示■的減速機旋轉方向與馬達方向相反, 其他則與馬達同方向。
4. 齒箱使用注意事項及說明: 減速機中若有金屬或異物仍勉強與馬達組合, 將會使齒輪受傷而產生異常音, 及減少減速機使用壽命, 也可能發生意外, 請特別注意。
5. 齒箱與馬達結合一定要核對編碼是否正確, 否則無法組裝。

#### NOTES :

1. Please fill in the required speed reduction ratio in the □ (square) after the speed reducer model no.
2. Rotational speed is calculated by dividing the synchronous speed of the motor (50Hz: 1500rpm; 60Hz: 1800rpm) with the reduction ratio. Depending on total load, actual rotational speed is 2%~20% less.
3. Speed reducers marked in the highlighted areas have opposite rotational direction to the motor. Others unmarked have the same rotational direction as the motor.
4. Attention: metal chips or objects in speed reducer will result in gear damage, noise and shorten service-life when assembling with motor.
5. Please make sure that the shaft size of the motor matches to that of the accompanying reducer model before assembly, otherwise inconformity will occur.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞, 不在保固範圍內。

## COMPONENTS

### 零組件類

泛用型馬達  
GENERAL PURPOSE MOTOR

速度控制型馬達  
SPEED CONTROLLED MOTOR

控制器  
CONTROLLER

煞車馬達  
BRAKE MOTOR

離合煞車馬達  
CLUTCH BRAKE MOTOR

轉矩馬達  
TORQUE MOTOR

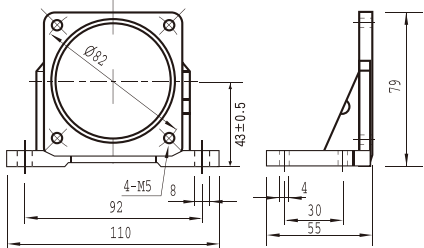
減速機  
SPEED REDUCER

零組件類  
COMPONENTS

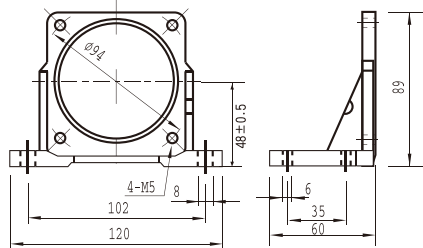


### 馬達安裝用L型腳座 / L TYPE BASE BRACKET FOR MOTOR INSTALLATION

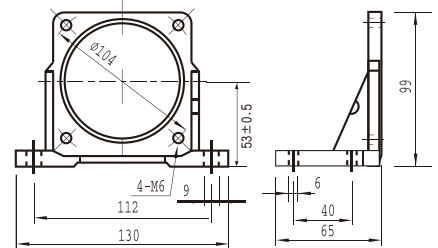
PAL-3N (□70mm用)



PAL-4N (□80mm用)

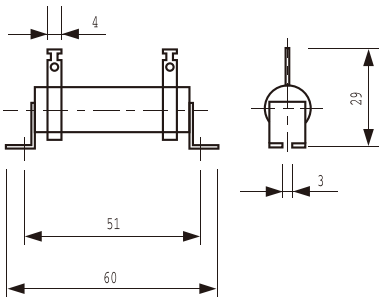


PAL-5N (□90mm用)

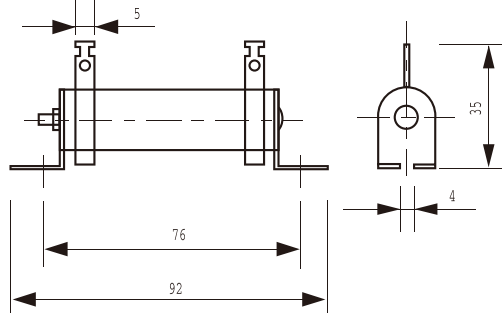


### 電子式剎車回路用外部電阻器 / EXTERNAL RESISTOR FOR ELECTRONIC BRAKE CIRCUITS

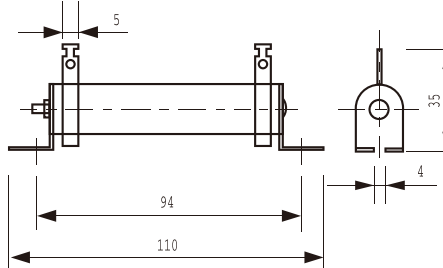
DDR10W10Ω J (10瓦/10歐姆)



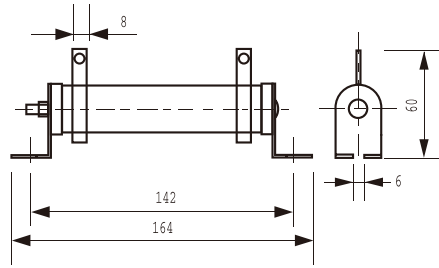
DDR20W20Ω J (20瓦/20歐姆)



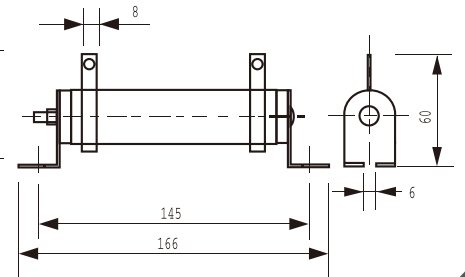
DDR30W20Ω J (30瓦/20歐姆)



DDR50W50Ω J (50瓦/50歐姆)

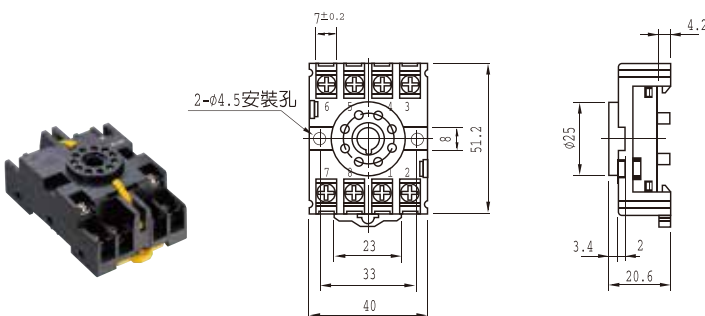


DDR80W50Ω J (80瓦/50歐姆)



### 露出型腳座 / EXTENDED BASE BRACKET

PF-083A腳座 (8腳用)



11-PFA腳座 (11腳用)

