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## About SHA YANG YE

### 企業簡介

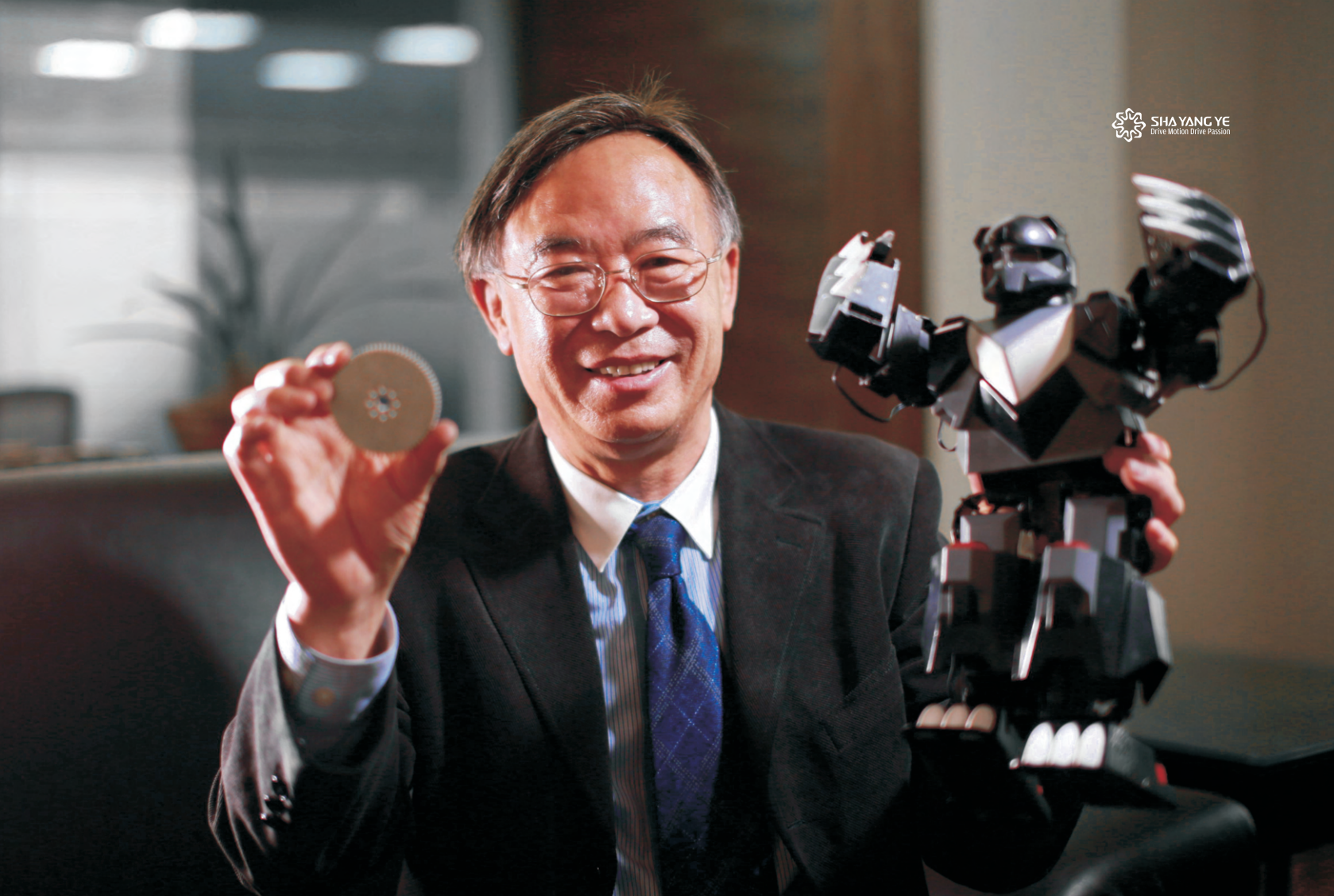


**SHA YANG YE**  
Drive Motion Drive Passion

SHA YANG YE Industrial Co., Ltd, with headquarters in Taoyuan, Taiwan, was established in 1980 by Mr. F.C. Tsai. We have production site in Kunshan, China, and sales office in Shenzhen and Shanghai, China.

We are the leading manufacturer in Taiwan in gear motor industry with the distributors and customers all over the world.

祥儀企業股份有限公司成立於1980年，主要生產：微小型齒輪箱馬達、電動工具齒輪箱、編碼器、驅動器等產品，經銷商遍佈全球，產品外銷至歐洲、美洲、亞洲、大洋洲等世界各地。祥儀除台灣桃園廠的企業總部外，更將版圖拓展至大陸昆山、深圳及上海，成立工廠及海外辦事處。



蔡逢春 先生 / President: Mr. F.C. Tsai

## Founder's Philosophy

### 創辦人理念

Our mission is "Offering the intellectual and comprehensive drive solution to create a better human life", and the vision is "Becoming the leading manufacturer for diverse applications all over the world".

將提供智能化、全方位的生活應用傳動解決方案視為公司的使命，以「智能化生活應用傳動產品，全球專業的製造者」為願景，期望齒輪傳動模組產品品牌，能夠在智能化居家生活運用終端產品中，讓廣大消費者認同及被指定優先選用。

Sha Yang Ye's management philosophy is "Truthful, Innovative, and Harmonic" accompanying with our product design concept: "Automatic, Economical, Marvelous, and Technological." We are sure to DRIVE your products MOTION and DRIVE your ideas PASSION.

祥儀以祥和、務實、創新為經營主軸。微小型齒輪箱馬達在日常生活中扮演舉足輕重之角色，配合祥儀產品小型化、輕量化、省能源、低噪音等優勢，使之達到「自動化」、「省力化」、「新奇化」、「科技化」、「祥和、務實、創新」的經營理念及專業領域讓我們獲得顧客高度的信任與信賴。期許祥儀企業以最輕巧的微小型齒輪箱馬達，讓「祥儀傳動，卓越撼動」。





## Our Strength

### 祥儀的優勢

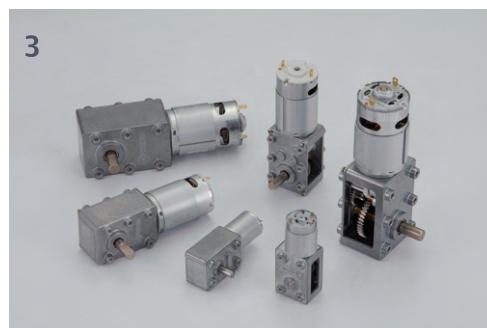
- Over 40 years manufacturing experience.
  - Customized products available.
  - Key parts mainly producing in house.
  - Dedicating to research and development.
  - Reliability tes laboratory.
  - Certified by ISO 9001, ISO 14001 and IATF 16949
- 
- 擁有超過 40 年專業製造經驗，能根據客戶需求訂做客製化產品
  - 專門領域：精密微型齒輪箱馬達、電動工具齒輪箱
  - 關鍵零組件完全自製，品質看得見
  - 專精與用心的研發團隊、設備齊全的功能測試實驗室
  - 品保體系經過嚴格認證，ISO 9001、ISO 14001、IATF 16949、中堅企業及國家品質獎

# Product Categories

產品類別

1. Planetary Gearbox & Gear Motor
2. Spur Gearbox & Gear Motor
3. Worm Gear Motor
4. Encoder/ Driver

1. 行星式齒輪箱 (馬達)
2. 正齒齒輪箱 (馬達)
3. 蝸桿蝸輪齒輪箱馬達
4. 編碼器 / 驅動器

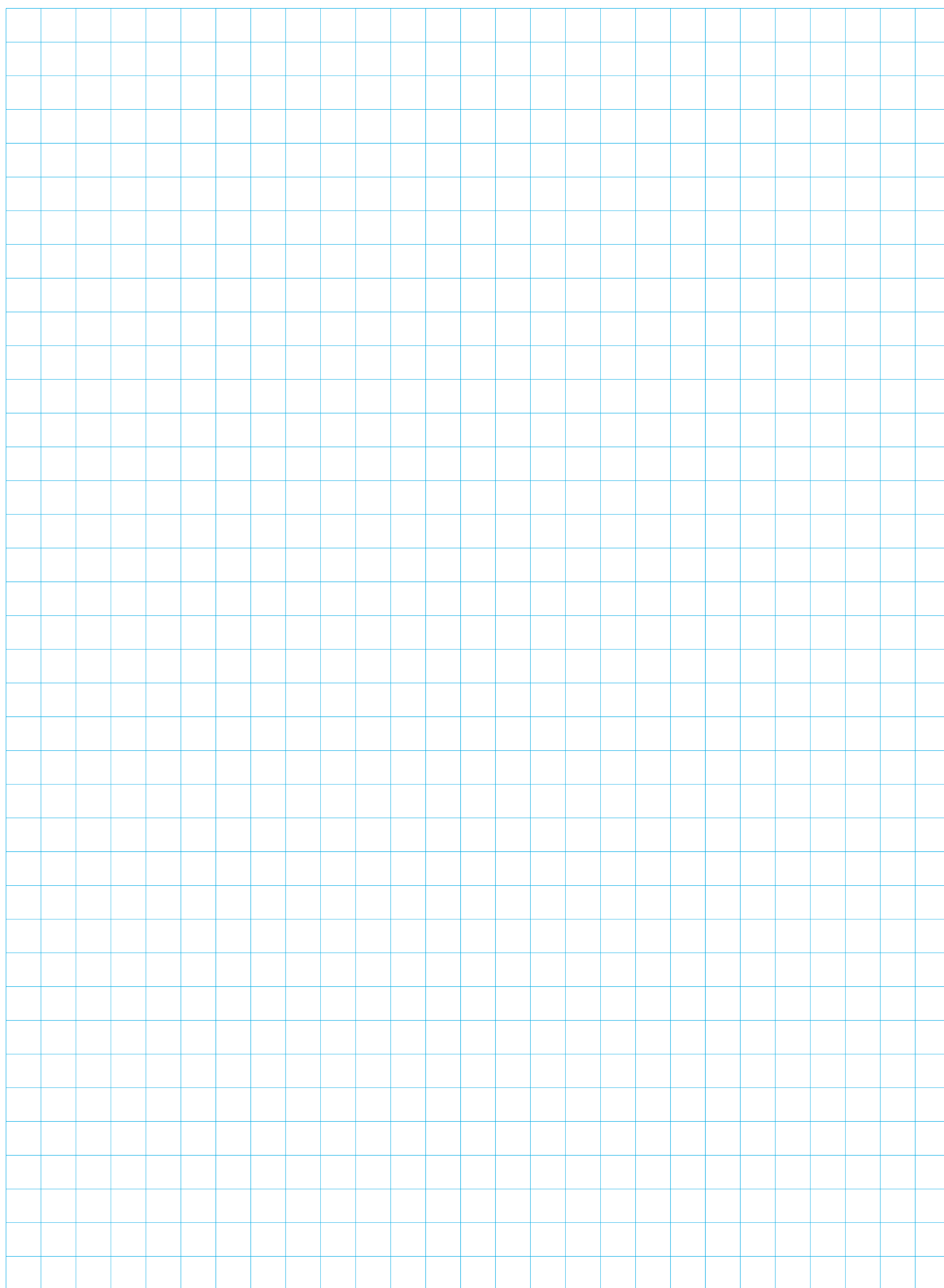




# Planetary Gearbox & Gear Motor

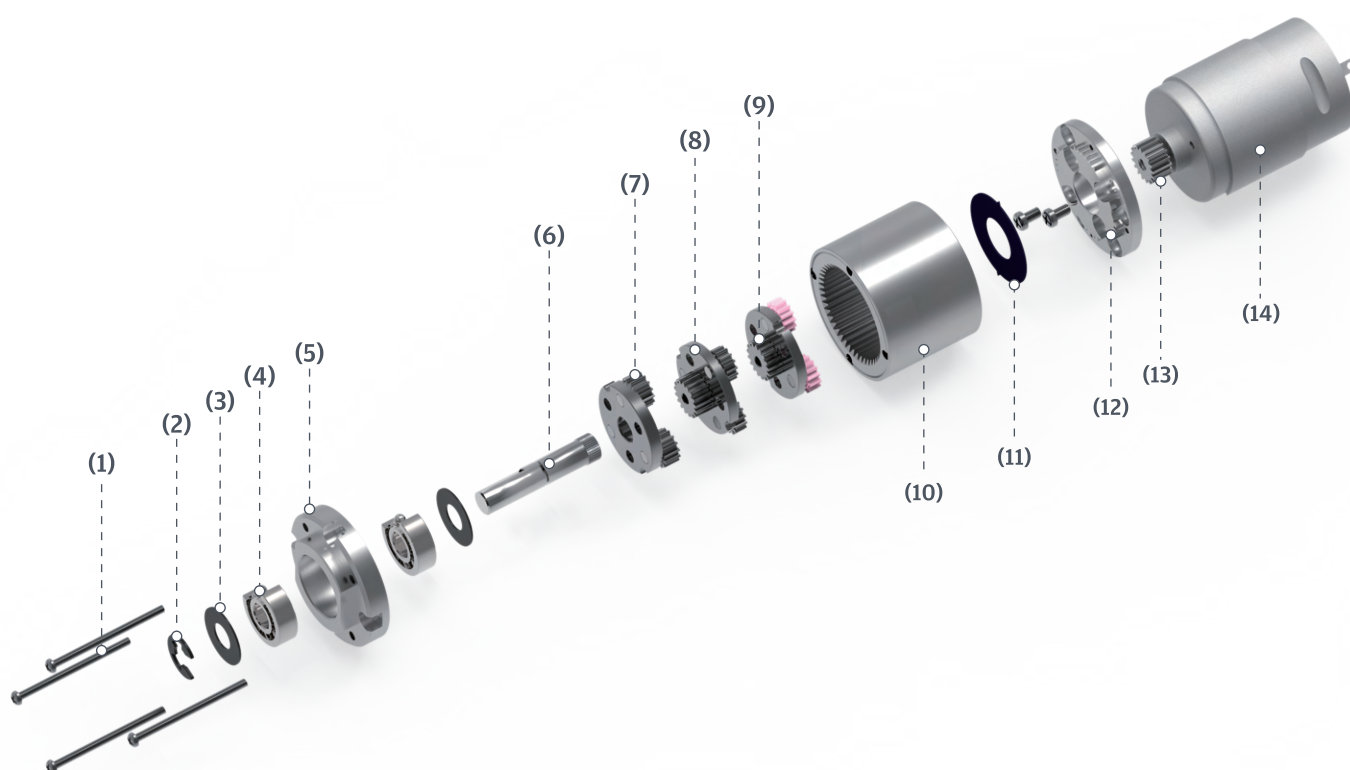
IG series

Right Angle series



# 行星式齒輪箱

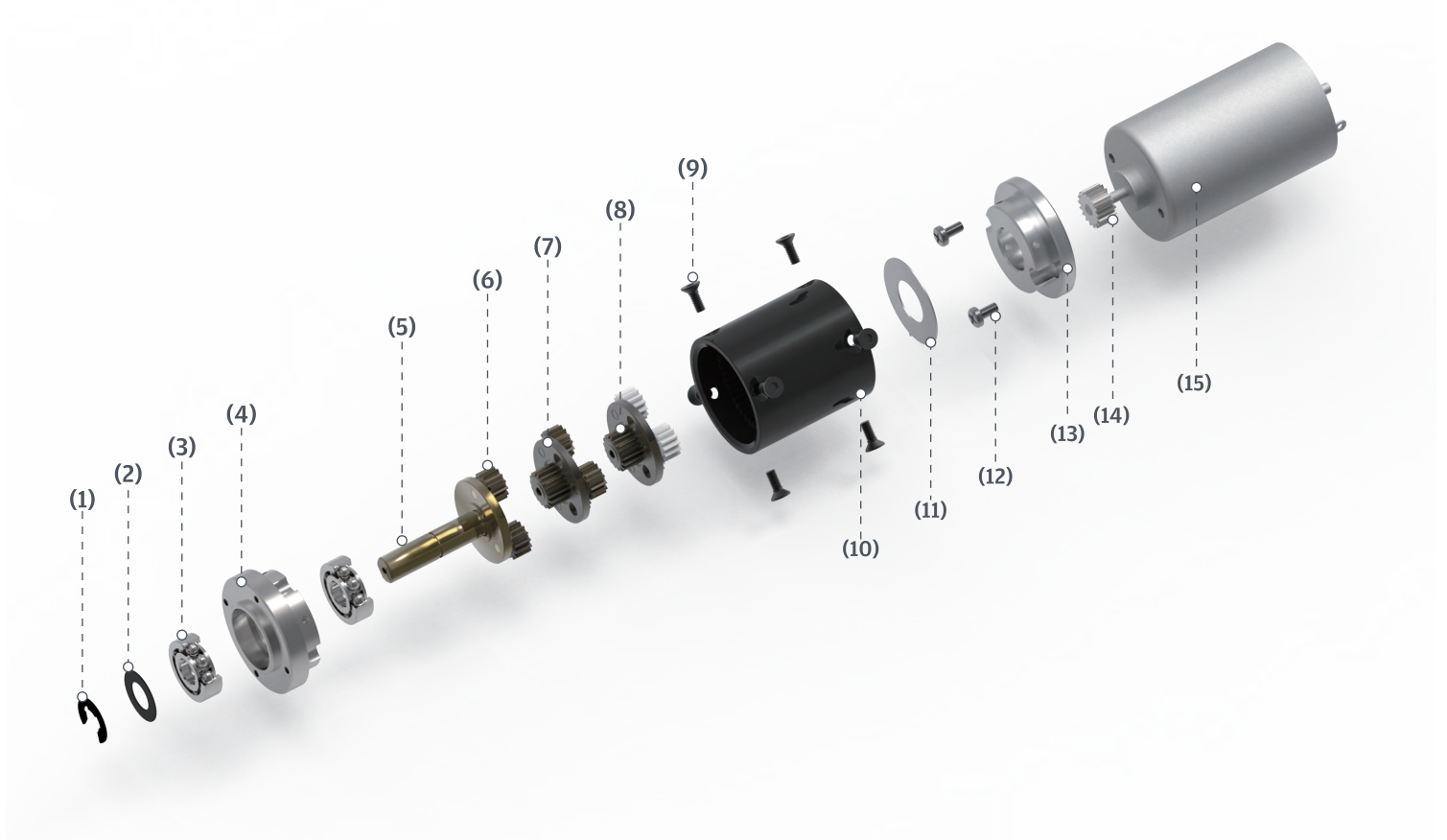
## PLANETARY GEARBOX



1	螺絲	Screw	8	傳動齒盤	Satellite carrier
2	扣環	Circlip	9	中心齒輪	Sun gear
3	墊片	Washer	10	外殼/內齒輪	Housing/ring gear
4	滾珠軸承	Ball bearing	11	墊片	Washer
5	上蓋	Front cover	12	下蓋	Motor flange
6	主軸	Output shaft	13	馬達齒	Pinion
7	行星齒輪	Satellite gear	14	馬達	Motor



# 行星式齒輪箱 PLANETARY GEARBOX



1	扣環	Circlip
2	墊片	Washer
3	滾珠軸承	Ball bearing
4	上蓋	Front cover
5	主軸	Output shaft
6	行星齒輪	Satellite gear
7	傳動齒盤	Satellite carrier
8	中心齒輪	Sun gear

9	螺絲	Screw
10	外殼/內齒輪	Housing/ring gear
11	墊片	Washer
12	螺絲	Screw
13	下蓋	Motor flange
14	馬達齒	Pinion
15	馬達	Motor

IG

# IG-08

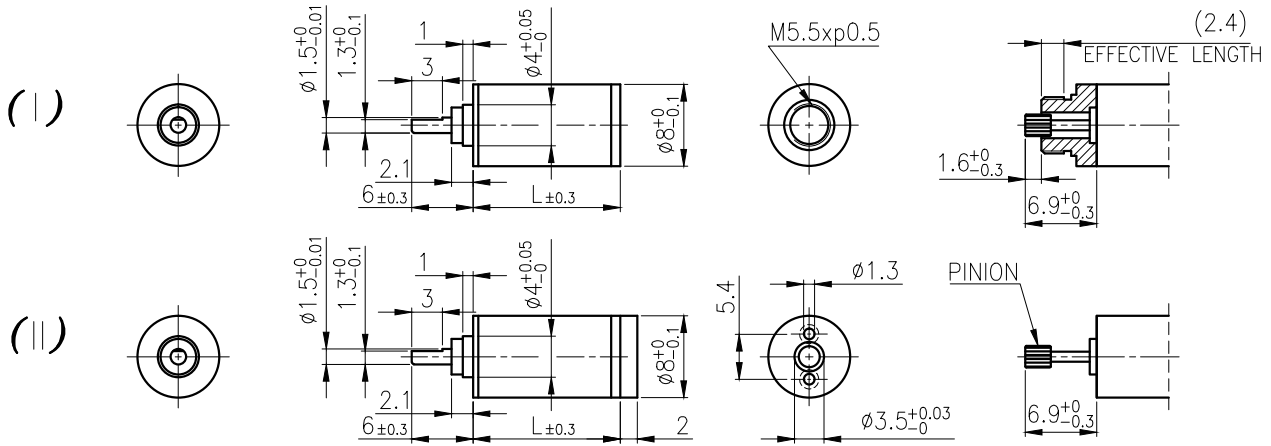


Right Angle

## 外形尺寸 & 馬達齒啮合尺寸 / Appearance Size & Pinion Assembly Dimension

RA

RB



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 80 gf	≤ 100 gf	≤ 500 gf	≤ 0.05 mm	≤ 0.2 mm	≤ 3°

WG

## 馬達齒輪型式 / Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.16	12	20°	∅ 0.99	全機種通用 Practicable

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096								
定格容許扭力 (gf-cm max.) Rated tolerance torque	50	100	200	300	350	400								
瞬間容許扭力 (gf-cm) Max momentary tolerance torque	150	300	600	900	1050	1200								
效率 Efficiency	85%	75%	65%	55%	45%	40%								
長度 Length (L)	9.6	12.3	15	17.7	20.4	23.1								
重量 (I) Weight (g)	2.9	3.8	4.6	5.4	6.3	7.1								
重量 (II) Weight (g)	3.7	4.6	5.4	6.2	7.1	7.9								

Encoder

Driver

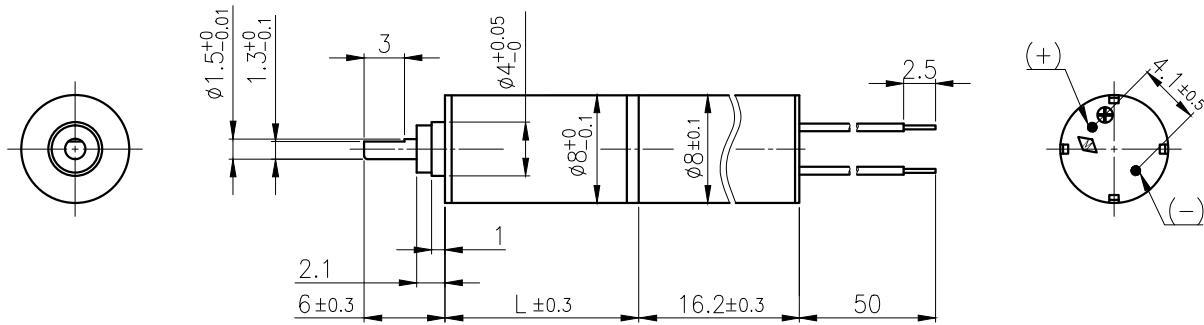
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-08GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

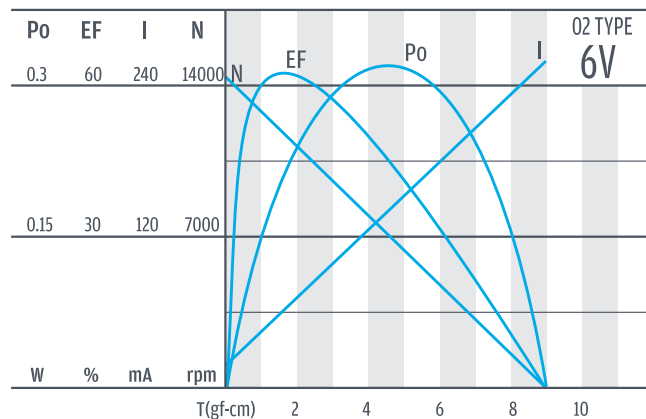
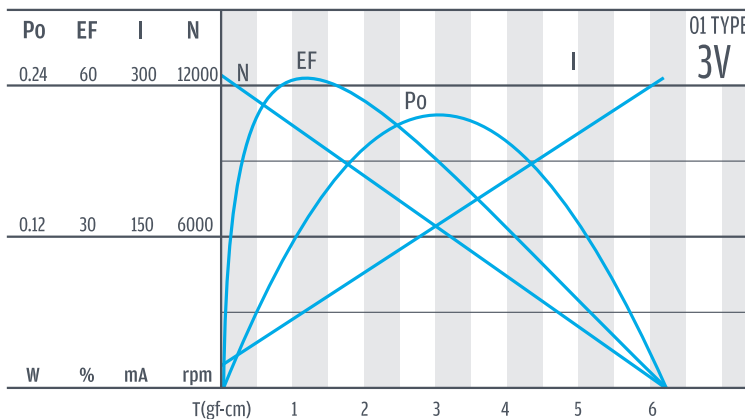
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio		1/4	1/16	1/64	1/256	1/1024	1/4096								
3V	定格扭力 Rated torque (gf-cm)	6.8	24	83	281	350	400								
	定格轉速 Rated speed (rpm)	2250	562	140	35	10	2.9								
6V	定格扭力 Rated torque (gf-cm)	6.8	24	83	281	350	400								
	定格轉速 Rated speed (rpm)	2875	719	179	44	12.6	3.3								
軸心迴轉方向 Rotation direction		CW													
長度 Length (L)		9.6	12.3	15	17.7	20.4	23.1								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
3	2	9000	≤150	12500	≤30	0.18	3.7
6	2	11500	≤110	14700	≤20	0.23	7.2

### 馬達單體特性/ Motor Characteristics



IG

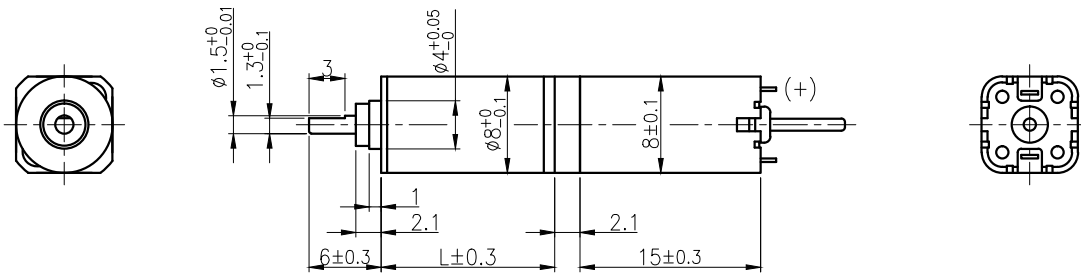
# IG-08GM

## 03 TYPE



Right Angle

### 外形尺寸 / Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096										
3V	定格扭力 Rated torque (gf-cm)	5	17.5	62	210	350	400										
	定格轉速 Rated speed (rpm)	1400	350	87	21.9	6.7	1.8										
	軸心迴轉方向 Rotation direction			CW													
	長度 Length (L)	9.6	12.3	15	17.7	20.4	23.1										

RB

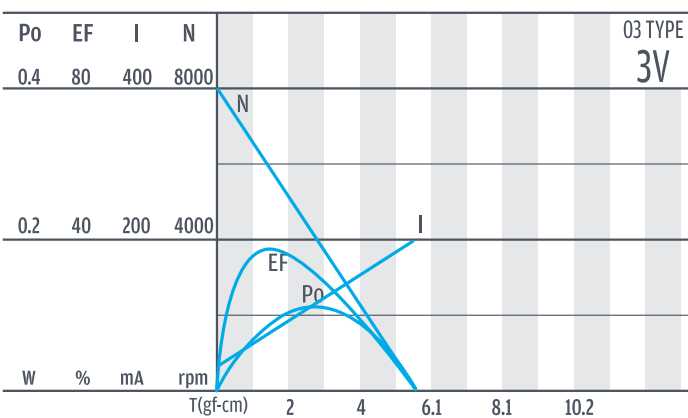
WG

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
3	1.5	5700	≤ 130	8000	≤ 50	0.09	3.8

PG

### 馬達單體特性 / Motor Characteristics



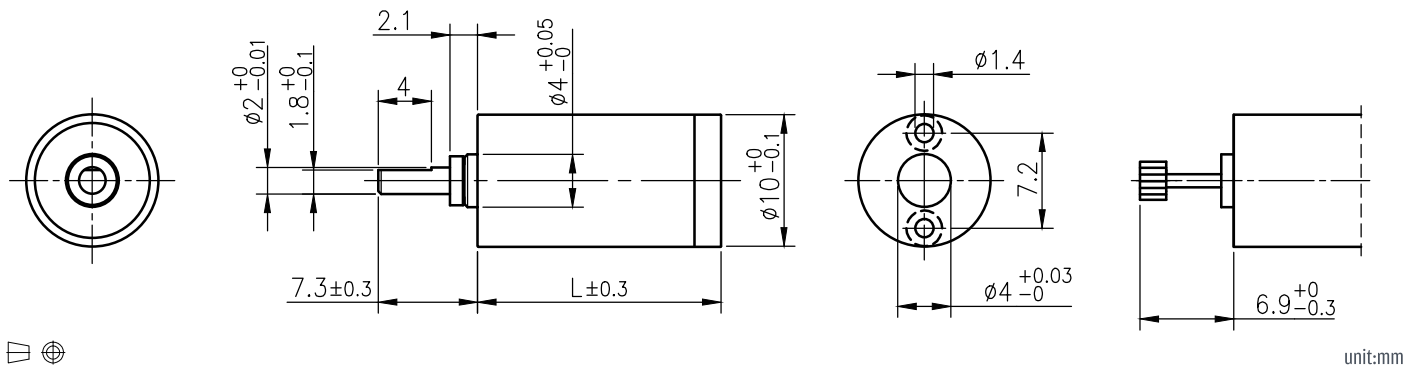
Encoder

Driver

# IG-10



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 100$ gf	$\leq 200$ gf	$\leq 500$ gf	$\leq 0.05$ mm	$\leq 0.2$ mm	$\leq 3^\circ$

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.2	12	$20^\circ$	$\phi 0.99$	全機種通用 Practicable

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096								
定格容許扭力 (gf-cm max.) Rated tolerance torque	50	100	300	400	500	600								
瞬間容許扭力 (gf-cm max.) Max momentary tolerance torque	150	300	900	1200	1500	1800								
效率 Efficiency	85%	75%	65%	55%	45%	40%								
長度 Length (L)	11.7	14.8	17.9	21	24.1	27.2								
重量 (含油軸承) Weight (g) / Sleeve bearing	6.2	7.2	8.2	10.2	11.2	13.2								

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

# IG-10GM

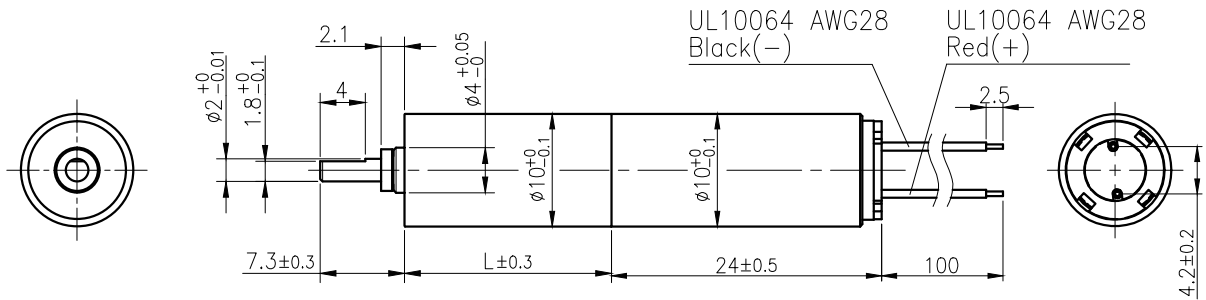
## 01 & 02 TYPE



Right Angle

### 外形尺寸 / Appearance Size

RA



unit:mm

RB

### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096						
6V	定格扭力 Rated torque (gf-cm)	10	36	124	400	500	600						
	定格轉速 Rated speed (rpm)	3000	750	187	46	11	2.9						
12V	定格扭力 Rated torque (gf-cm)	10	36	124	400	500	600						
	定格轉速 Rated speed (rpm)	3500	875	218	54	13	3.4						
	軸心迴轉方向 Rotation direction			CW									
	長度 Length (L)	9.7	12.8	15.9	19	22.1	25.2						

WG

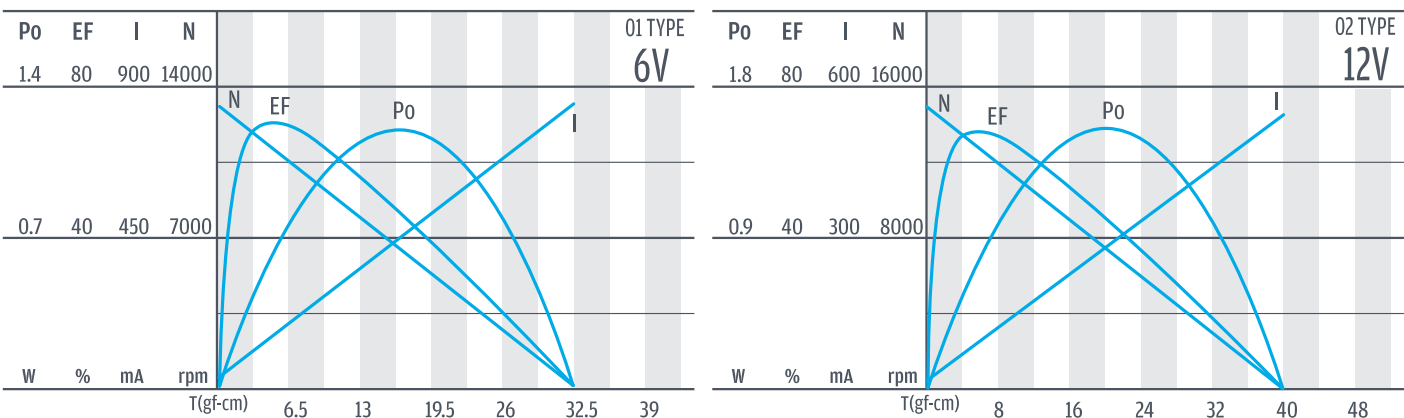
PG

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
6	3	12000	≤ 140	13000	≤ 45	0.36	7.9
12	3	14000	≤ 70	15000	≤ 30	0.43	7.9

Encoder

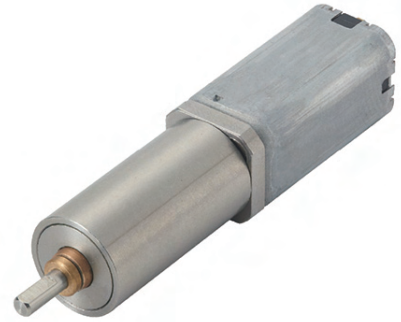
### 馬達單體特性 / Motor Characteristics



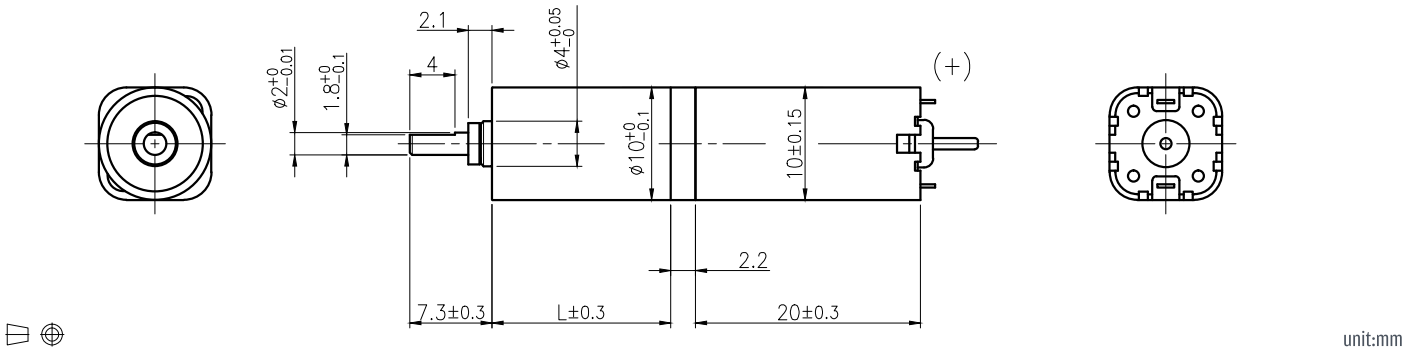
Driver

# IG-10GM

## 03 TYPE



### 外形尺寸 / Appearance Size



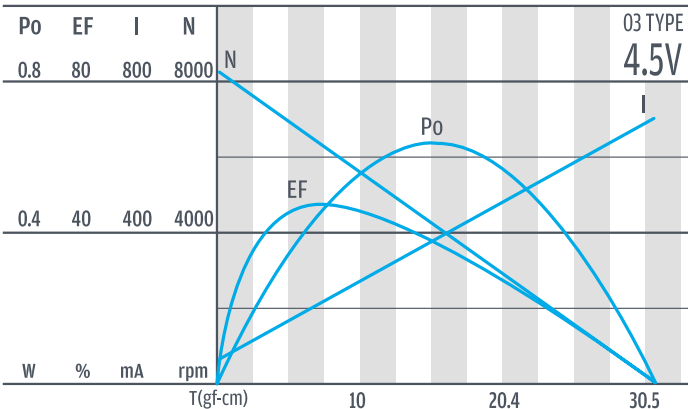
### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096							
4.5V	定格扭力 Rated torque (gf-cm)	17	61	212	400	500	600							
	定格轉速 Rated speed (rpm)	1690	420	105	29	7.7	1.9							
	軸心迴轉方向 Rotation direction			CW										
	長度 Length (L)	9.7	12.8	15.9	19	22.1	25.2							

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
4.5	5.1	6800	≤ 270	8100	≤ 125	0.4	8.2

### 馬達單體特性 / Motor Characteristics

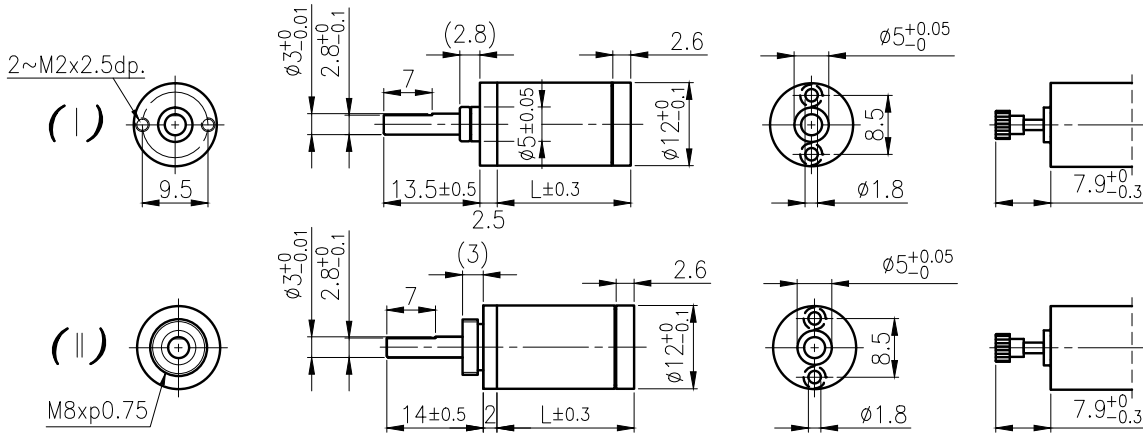


IG

# IG-12



## 外形尺寸 & 馬達齒鉤尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.5 kgf	≤ 0.5 kgf	≤ 1.5 kgf	≤ 0.08mm	≤ 0.2 mm	≤ 3°

## 馬達齒輪型式 / Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.25	12	20°	∅ 1.49	全機種通用 Practicable

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096									
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.8	1.2	1.6	1.8	2	2									
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	2.4	3.6	4.8	5.4	6	6									
效率 Efficiency	85%	75%	65%	55%	45%	40%									
長度 Length (L)	12.8	16.1	19.4	22.7	26	29.3									
重量 (I) Weight (g)	12.1	14.2	16.3	18.4	20.5	22.6									
重量 (II) Weight (g)	12.6	14.7	16.8	18.9	21	23.1									

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range



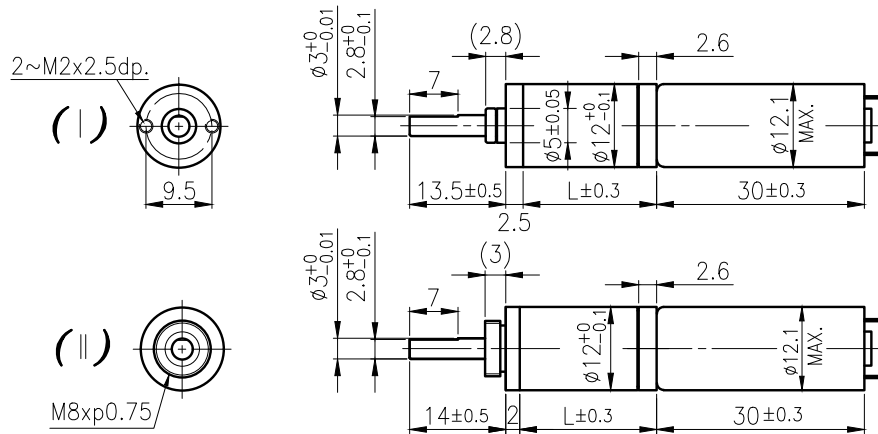
# IG-12GM

## 01 & 02 TYPE



外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

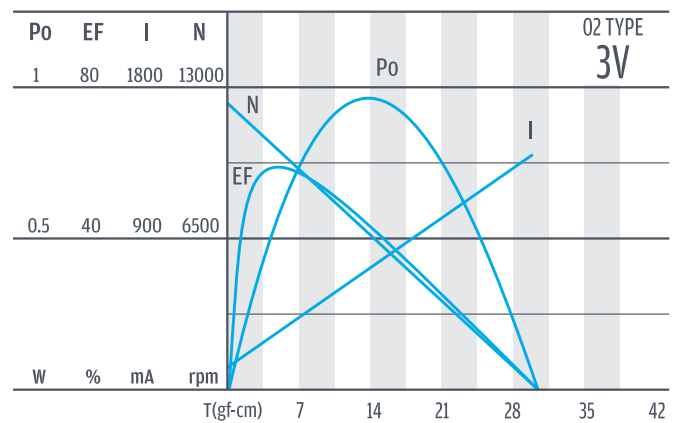
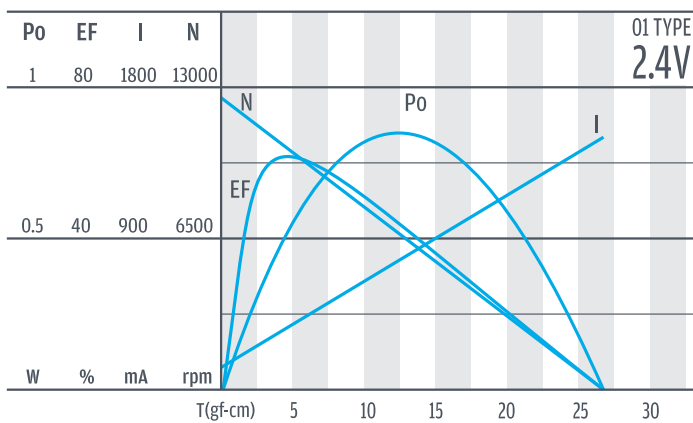
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096						
2.4V	定格扭力 Rated torque (gf-cm)	20	70	250	840	2000	2000						
	定格轉速 Rated speed (rpm)	2400	600	150	38	10	2.8						
3V	定格扭力 Rated torque (gf-cm)	19	65	230	780	2000	2000						
	定格轉速 Rated speed (rpm)	2400	610	150	39	10	2.8						
	軸心迴轉方向 Rotation direction	CW											
	長度 Length (L)	12.8	16.1	19.4	22.7	26	29.3						

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
2.4	6	10000	≤ 450	12500	≤ 130	0.62	13
3	5.6	10000	≤ 410	12500	≤ 120	0.59	13

馬達單體特性/ Motor Characteristics



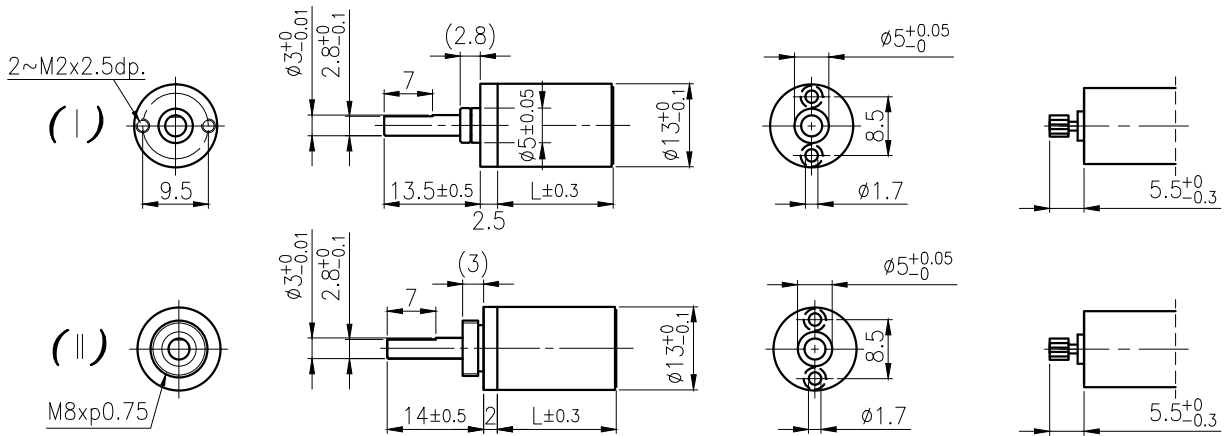
IG

# IG-13



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (8mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.5 kgf	≤ 0.5 kgf	≤ 1.5 kgf	≤ 0.08 mm	≤ 0.2 mm	≤ 3°

WG

## 馬達齒輪型式/ Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.25	12	20°	ø 1.49	全機種通用 Practicable

PG

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096									
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.8	1.2	1.6	1.8	2	2									
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	2.4	3.6	4.8	5.4	6	6									
效率 Efficiency	85%	75%	65%	55%	45%	40%									
長度 Length (L)	10.3	13.6	16.9	20.2	23.5	26.8									
重量 (I) Weight (g)	10.7	12.8	14.9	17	19.1	21.2									
重量 (II) Weight (g)	11.2	13.3	15.4	17.5	19.6	21.7									

Encoder

Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

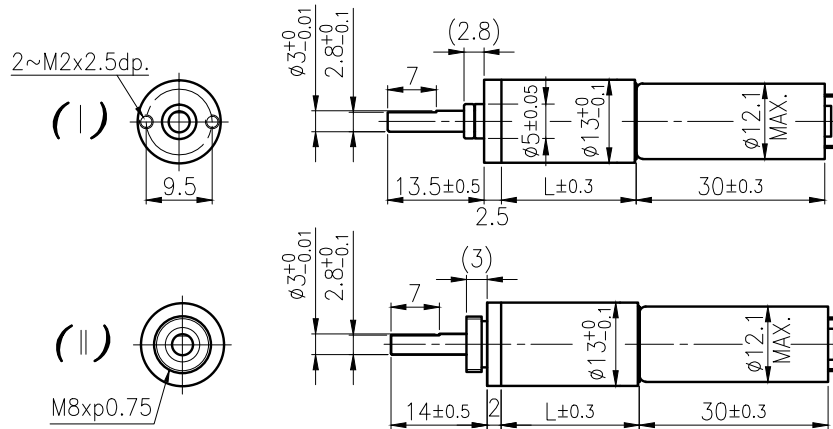
# IG-13GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

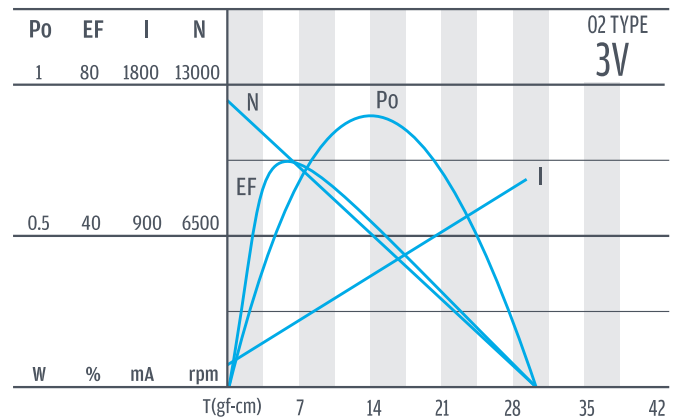
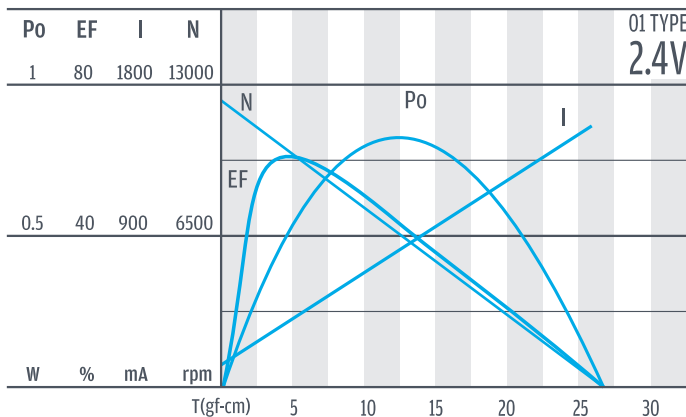
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/16	1/64	1/256	1/1024	1/4096											
2.4V	定格扭力 Rated torque (gf-cm)	20	70	250	840	2000	2000											
	定格轉速 Rated speed (rpm)	2400	600	150	38	10	2.8											
3V	定格扭力 Rated torque (gf-cm)	19	65	230	780	2000	2000											
	定格轉速 Rated speed (rpm)	2400	610	150	39	10	2.8											
	軸心迴轉方向 Rotation direction	CW																
	長度 Length (L)	10.3	13.6	16.9	20.2	23.5	26.8											

### 馬達單體型式/ Motor Data

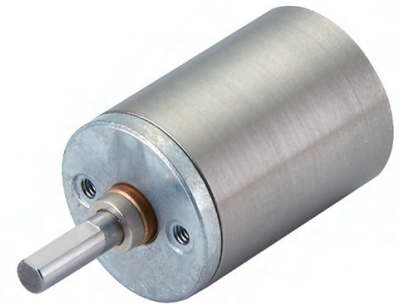
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
2.4	6	10000	≤ 450	12500	≤ 130	0.62	13
3	5.6	10000	≤ 410	12500	≤ 120	0.59	13

### 馬達單體特性/ Motor Characteristics



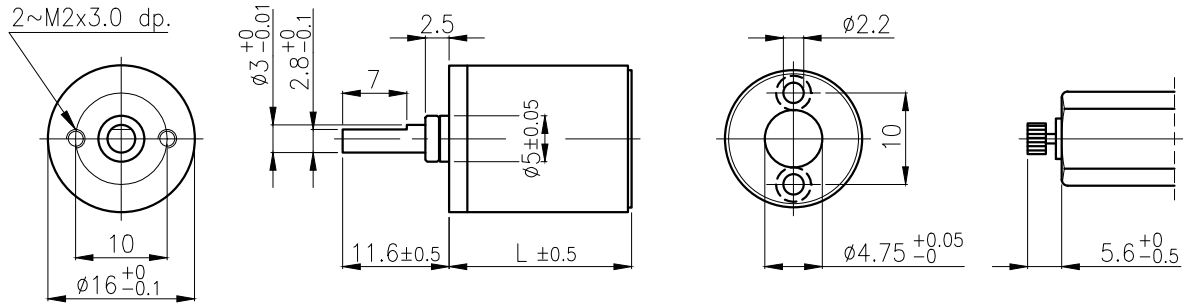
IG

# IG-16



Right Angle

## 外形尺寸&馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.5 kgf	≤ 0.5 kgf	≤ 1.5 kgf	≤ 0.08 mm	≤ 0.2 mm	≤ 3°

WG

## 馬達齒輪型式/ Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.3	10	20°	∅ 1.49	1/29, 1/104, 1/128, 1/157, 1/455, 1/561, 1/690, 1/1996, 1/3027
0.3	13	20°	∅ 1.49, ∅ 1.98	1/4, 1/16, 1/19, 1/62, 1/72, 1/84, 1/231, 1/316, 1/370, 1/1014, 1/1621
0.3	16	20°	∅ 1.49, ∅ 1.98	1/14, 1/53

PG

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/29	1/53	1/62	1/72	1/84	1/104	1/128	1/157	1/231	1/316	1/370	1/455	1/561	1/690	1/1014	1/1621	1/1996	1/3027
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.8	1.2	1.2	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2	2	2	2	2	2	2.4	2.4	2.4	2.4
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	2.4	3.6	3.6	3.6	3.6	4.8	4.8	4.8	4.8	4.8	4.8	4.8	6	6	6	6	6	6	7.2	7.2	7.2	7.2
效率 Efficiency	80%	70%	70%	70%	70%	60%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%
長度 Length (L)	15.05	18.70	18.70	18.70	18.70	22.35	22.35	22.35	22.35	22.35	22.35	22.35	26	26	26	26	26	26	29.65	29.65	29.65	29.65
重量 (含油軸承) Weight (g) /Sleeve bearing	19	23	23	23	23	27	27	27	27	27	27	27	31	31	31	31	31	31	35	35	35	35

Encoder

Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

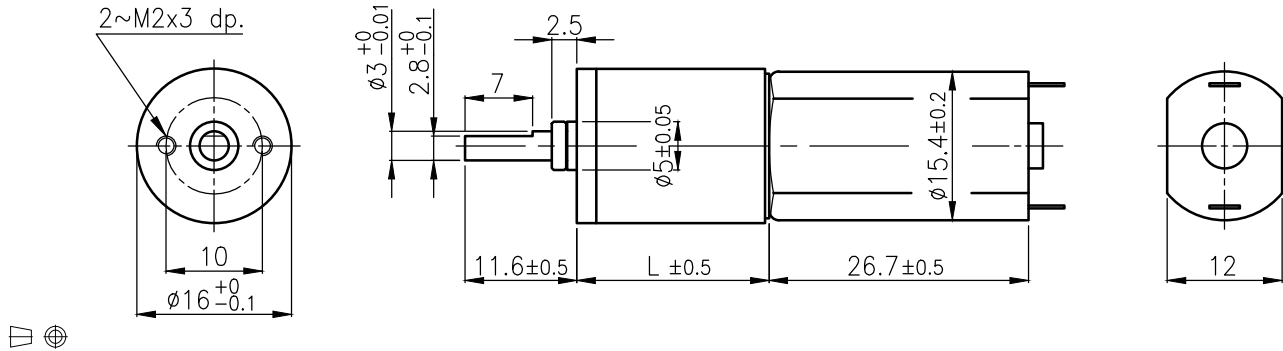
# IG-16GM

## 04 & 05 TYPE



### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

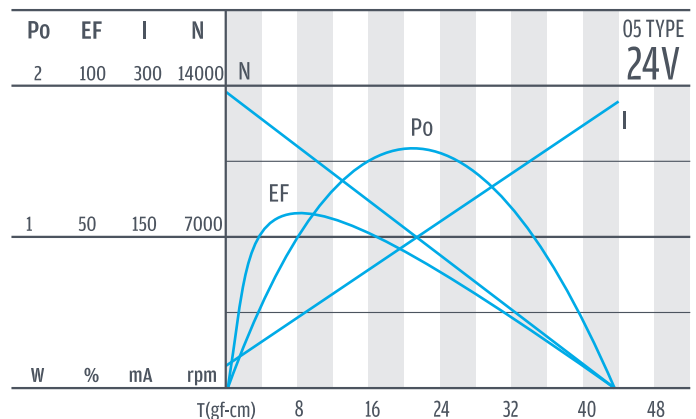
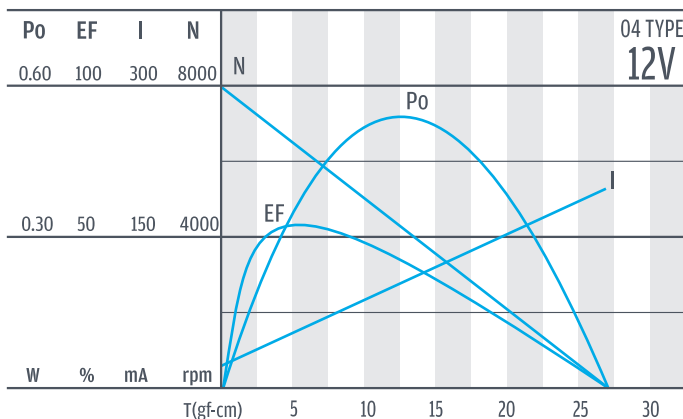
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio		1/4	1/14	1/16	1/19	1/29	1/53	1/62	1/72	1/84	1/104	1/128	1/157	1/231	1/316	1/370	1/455	1/561	1/690	1/1014	1/1621	1/1996	1/3027
12V	定格扭力 Rated torque (gf-cm)	21	60	70	82	120	193	220	260	300	380	460	550	700	950	1100	1350	1700	2000	2400	2400	2400	2400
	定格轉速 Rated speed (rpm)	1330	430	377	315	205	117	100	85	73	59	48	39	26	19	16	13.5	11	8.9	6	3.8	3.2	2.3
24V	定格扭力 Rated torque (gf-cm)	31	85	103	120	180	284	330	380	450	560	690	850	1000	1400	1600	2000	2000	2000	2400	2400	2400	2400
	定格轉速 Rated speed (rpm)	2400	760	669	555	365	208	170	150	130	105	85	69	47	34	29	24	19.5	15.9	11	7.2	6.1	4.1
軸心迴轉方向 Rotation direction		CW																					
長度 Length (L)		15.05	18.70		22.35				26				29.65										

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	6.1	6200	≤ 85	8000	≤ 50	0.394	18
24	9	11000	≤ 90	13500	≤ 50	1.026	18

### 馬達單體特性/ Motor Characteristics



IG

# IG-16GM

## 07 TYPE

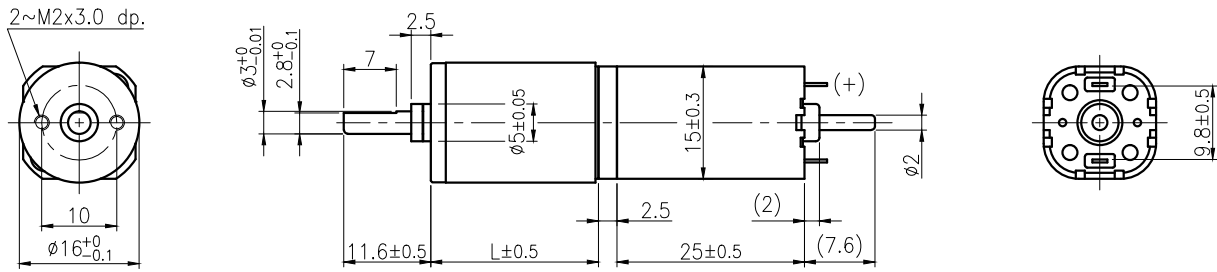


Right Angle

### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.

RA



unit:mm

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/231	1/316	1/370	1/1014	1/1621
24V 定格扭力 Rated torque (gf-cm)	140	400	465	545	1320	1505	1600	1600	2000	2000	2000	2400	2400
24V 定格轉速 Rated speed (rpm)	1410	440	375	320	110	100	89	79	32	24	20.8	7.8	4.9
軸心迴轉方向 Rotation direction	CW												
長度 Length (L)	15.05	18.70				22.35				26		29.65	

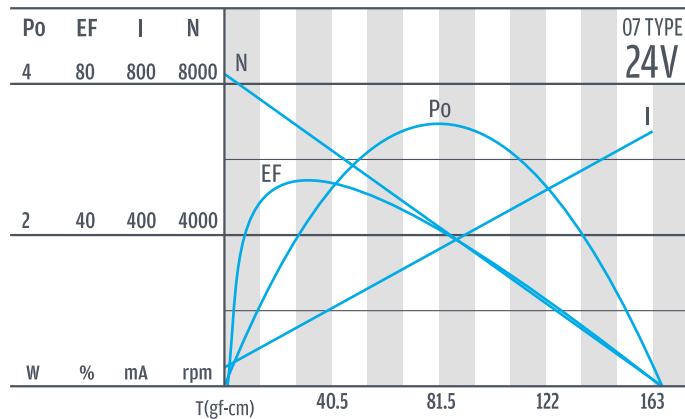
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
24	40.8	6200	≤ 260	8050	≤ 85	2.6	21

PG

### 馬達單體特性/ Motor Characteristics



Encoder

Driver

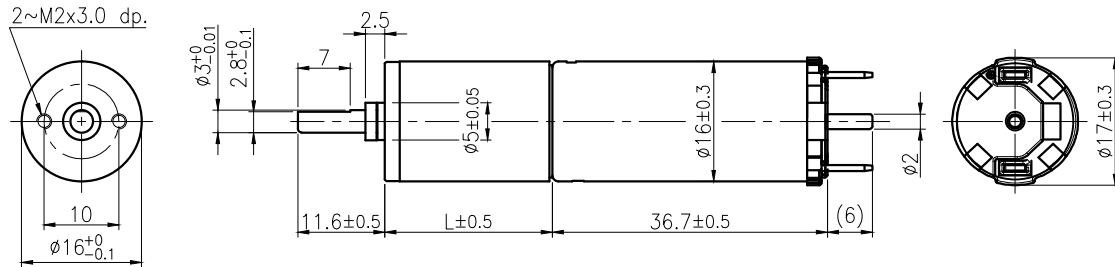
# IG-16GM

## 11 & 12 TYPE



### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

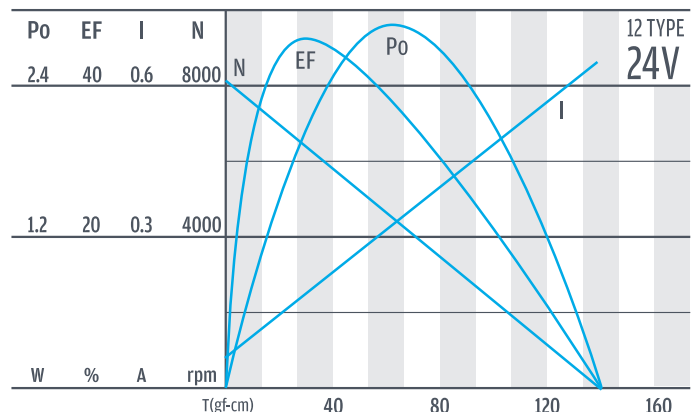
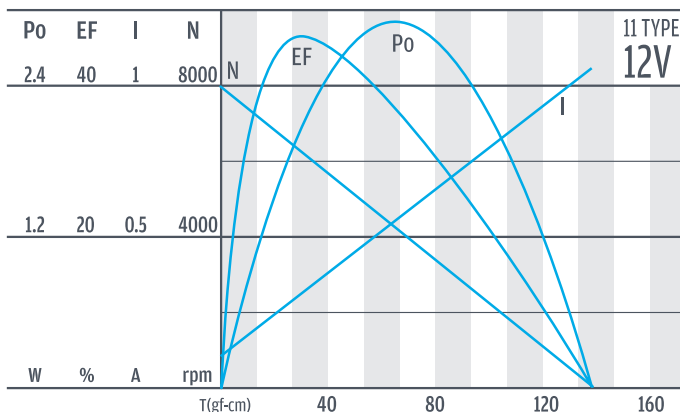
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/231	1/316	1/370	1/1014	1/1621
12V	定格扭力 Rated torque (gf-cm)	140	390	460	535	1295	1475	1600	1600	2000	2000	2000	2000	2400	2400
	定格轉速 Rated speed (rpm)	1310	410	350	300	105	93	82	74	30	23	20	7.5	4.8	
24V	定格扭力 Rated torque (gf-cm)	140	390	460	535	1295	1475	1600	1600	2000	2000	2000	2000	2400	2400
	定格轉速 Rated speed (rpm)	1380	430	365	315	112	98	86	78	32	24	21	8	5	
軸心迴轉方向 Rotation direction		CCW													
長度 Length (L)		15.05	18.70			22.35				26				29.65	

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	40	5780	≤ 480	8100	≤ 160	2.4	32
24	40	6070	≤ 250	8500	≤ 90	2.5	32

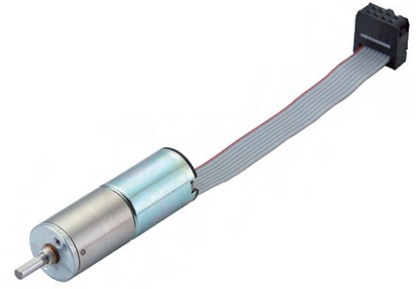
### 馬達單體特性/ Motor Characteristics



IG

# IG-16GM

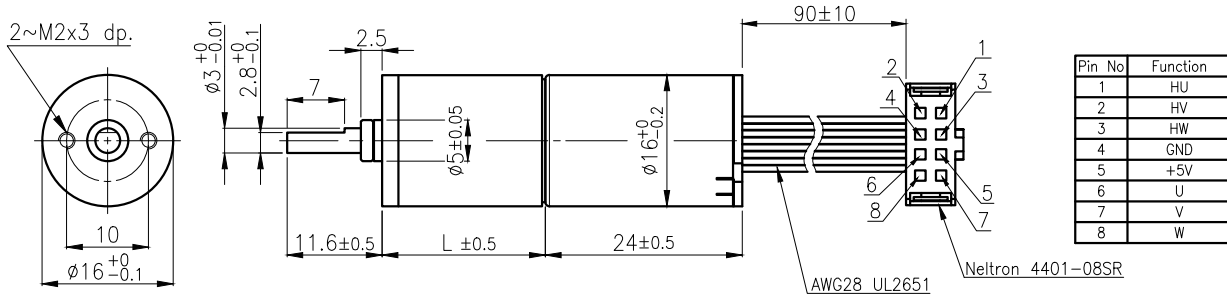
## 61 & 62 TYPE



Right Angle

### 外形尺寸 / Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/29	1/53	1/62	1/72	1/84	1/104	1/128	1/157	1/231	1/316	1/370	1/455	1/561	1/690	1/1014	1/1621	1/1996	1/3027
<b>8.5V</b> 定格扭力 Rated torque (gf-cm)	84	236	276	322	489	777	887	1038	1213	1494	1600	1600	2000	2000	2000	2000	2000	2000	2400	2400	2400	2400
定格轉速 Rated speed (rpm)	2280	710	605	520	340	185	160	135	115	95	84	70	45	35	30	25	20	17	12	7.5	6.4	4.2
<b>24V</b> 定格扭力 Rated torque (gf-cm)	140	393	460	538	816	1295	1479	1600	1600	1600	1600	1600	2000	2000	2000	2000	2000	2000	2400	2400	2400	2400
定格轉速 Rated speed (rpm)	2280	710	605	520	340	185	160	145	125	105	90	74	50	38	33	27	22	18	12	8	6	4
軸心迴轉方向 Rotation direction	CW/CCW																					
長度 Length (L)	15.05	18.70		22.35				26				29.65										

RB

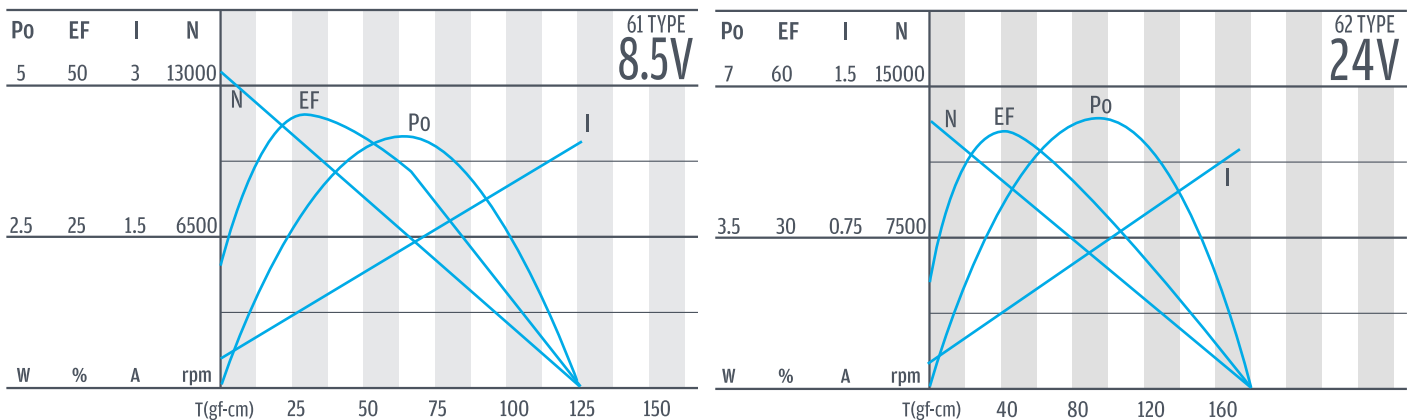
WG

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
8.5	24	10000	≤700	13300	≤230	2.46	20
24	40	10000	≤370	13300	≤170	4.1	20

PG

### 馬達單體特性 / Motor Characteristics



Encoder

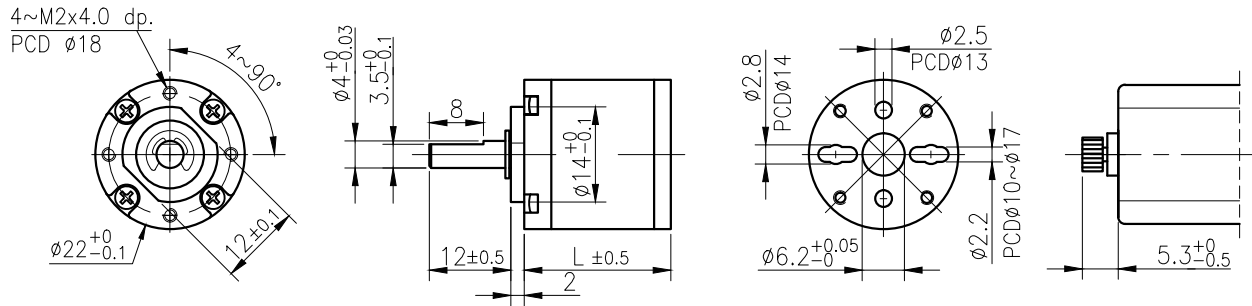
Driver



# IG-22



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.8 kgf	≤ 0.6kgf	≤ 5 kgf	≤ 0.08 mm	≤ 0.2 mm	≤ 3°
金屬 Metal	滾珠軸承 Ball bearings	≤ 1 kgf	≤ 0.6 kgf	≤ 5 kgf	≤ 0.05 mm	≤ 0.2 mm	≤ 3°

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.3	13	20°	ø 1.98	1/4, 1/16, 1/19, 1/62, 1/72, 1/84, 1/104, 1/231, 1/270 1/316, 1/370, 1/455, 1/1014, 1/1249, 1/1621, 1/1996
0.3	16	20°	ø 1.98	1/14, 1/53, 1/198, 1/742

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	1.5	1.5	1.5	2	2	2	2	2	2.5	2.5	2.5	2.5	2.5	2.5	3	3	3	3	3
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	4.5	4.5	4.5	6	6	6	6	6	7.5	7.5	7.5	7.5	7.5	7.5	9	9	9	9	9
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%
長度 Length (L)	14.40	18.05	18.05	18.05	21.70	21.70	21.70	21.70	21.70	25.35	25.35	25.35	25.35	25.35	25.35	29	29	29	29	29
重量 (含油軸承) Weight (g) /Sleeve bearing	27	31	31	31	35	35	35	35	50	60	60	60	60	60	60	65	65	65	65	65
重量 (滾珠軸承) Weight (g) /Ball bearings	26	30	30	30	34	34	34	34	49	59	59	59	59	59	59	64	64	64	64	64

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG  
Right Angle  
RA  
RB  
WG  
PG  
Encoder  
Driver

IG

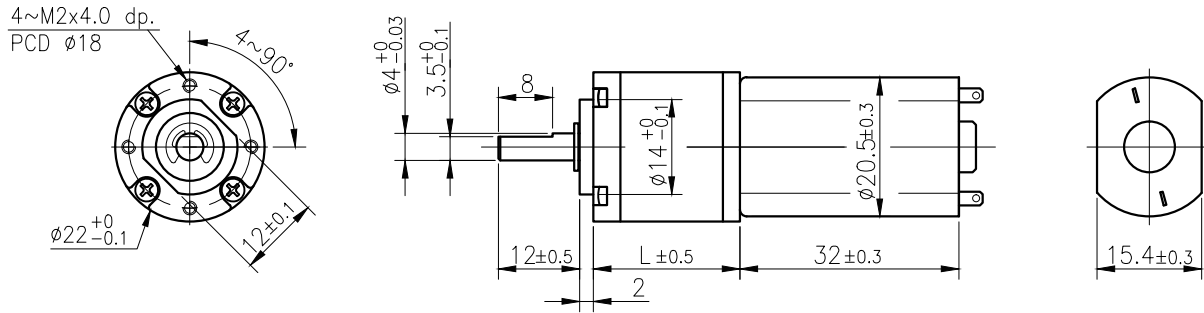
# IG-22GM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
12V 定格扭力 Rated torque (gf-cm)	77	215	250	295	695	810	950	1100	1370	2100	2500	2500	2500	2500	2500	3000	3000	3000	3000	3000
12V 定格轉速 Rated speed (rpm)	1450	470	405	348	127	109	93	79	64	34	29	25	22	19	15.5	9.5	7.4	6	4.6	3.8
24V 定格扭力 Rated torque (gf-cm)	77	215	250	295	695	810	950	1100	1370	2100	2500	2500	2500	2500	2500	3000	3000	3000	3000	3000
24V 定格轉速 Rated speed (rpm)	1600	515	450	384	140	120	103	88	71	37	32	28	23.5	21	17.5	10.5	8	6.6	5	4.2
軸心迴轉方向 Rotation direction	CCW																			
長度 Length (L)	14.40	18.05					21.70					25.35						29		

RB

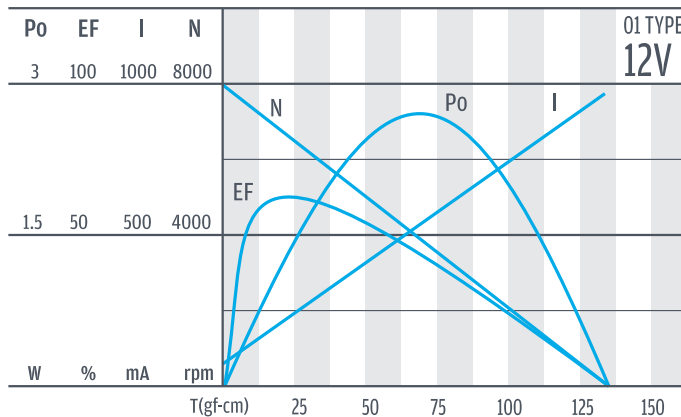
WG

### 馬達單體型式/ Motor Data

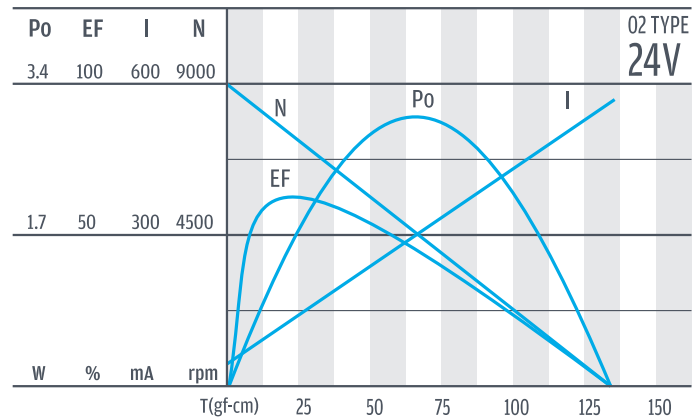
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	22	6700	≤ 200	8000	≤ 70	1.5	32
24	22	7400	≤ 110	9000	≤ 40	1.7	32

PG

### 馬達單體特性/ Motor Characteristics



Encoder



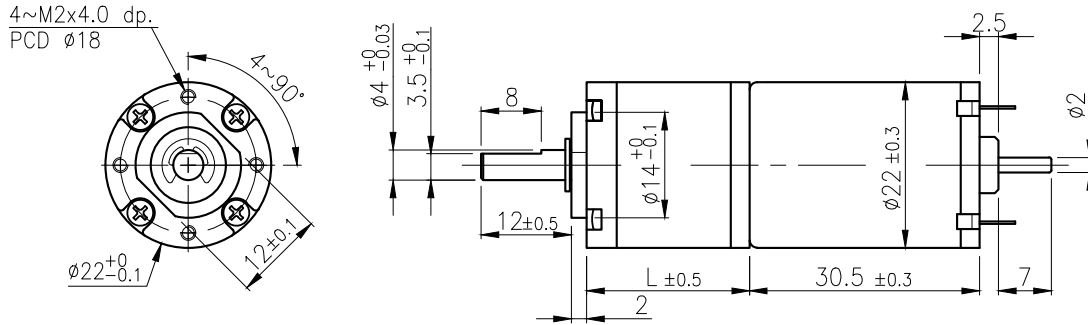
Driver

# IG-22GM

## 03 & 04 TYPE



### 外形尺寸/ Appearance Size



unit:mm

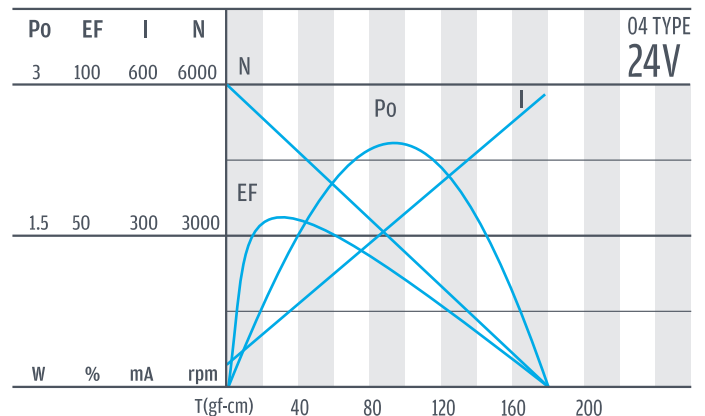
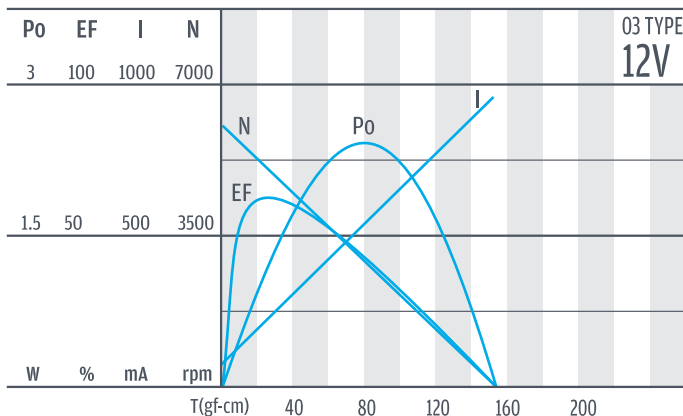
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
12V	減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
	定格扭力 Rated torque (gf-cm)	100	300	350	410	970	1100	1300	1500	1900	2500	2500	2500	2500	2500	2500	3000	3000	3000	3000	3000
24V	定格轉速 Rated speed (rpm)	1000	340	290	245	90	77	66	56	46	24	21	18	16	13.5	11	7.3	5	4.2	3.3	2.7
	定格扭力 Rated torque (gf-cm)	120	360	420	490	1150	1300	1500	1800	2000	2500	2500	2500	2500	2500	2500	3000	3000	3000	3000	3000
軸心迴轉方向 Rotation direction		CW																			
長度 Length (L)		14.40	18.05	21.70	25.35	29															

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	31	4790	≤ 240	6000	≤ 80	1.52	43
24	37	4710	≤ 145	6000	≤ 55	1.79	43

### 馬達單體特性/ Motor Characteristics



IG

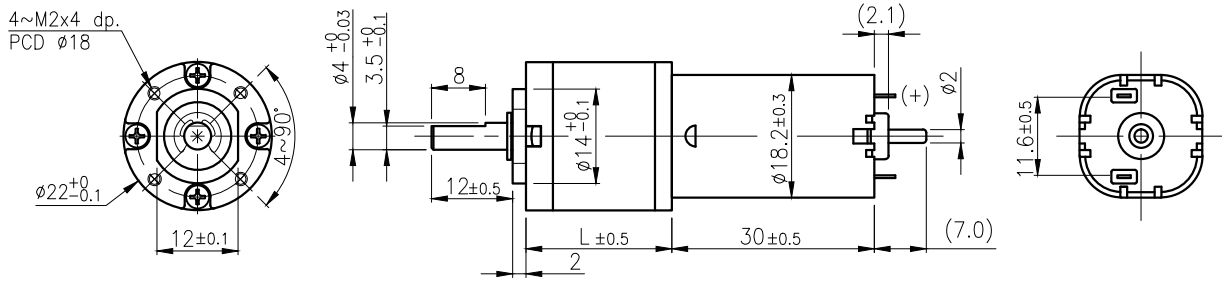
# IG-22GM

## 08 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
24V 定格扭力 Rated torque (gf-cm)	355	1000	1170	1370	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500	2500	3000	3000	3000	3000	3000
24V 定格轉速 Rated speed (rpm)	1330	410	350	300	120	100	90	80	65	35	30	25	22	19	15	9.8	7.2	5.9	4.5	3.7
軸心迴轉方向 Rotation direction	CW																			
長度 Length (L)	14.40	18.05	21.70				25.35						29							

RB

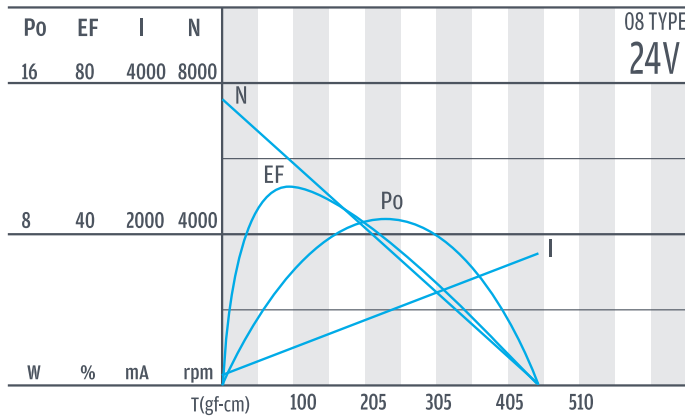
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
24	102	5840	≤ 640	7810	≤ 140	6.35	36

PG

### 馬達單體特性/ Motor Characteristics



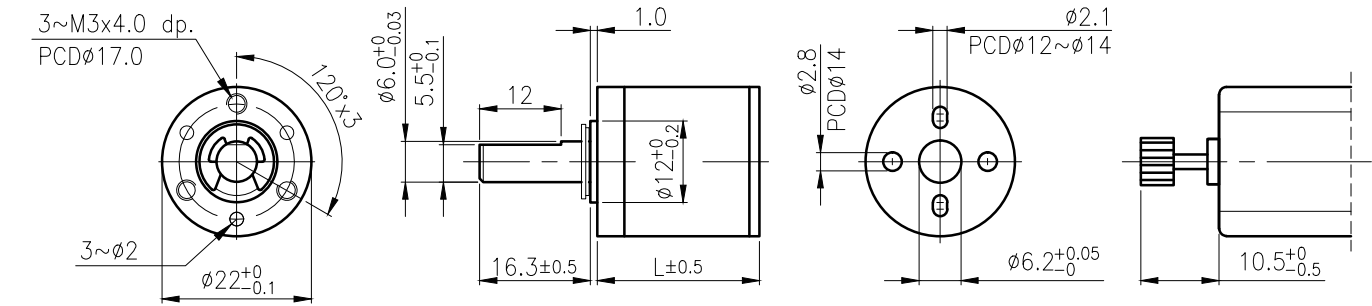
Encoder

Driver

# IG-22C



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearings	$\leq 1$ kgf	$\leq 0.7$ kgf	$\leq 6$ kgf	$\leq 0.08$ mm	$\leq 0.3$ mm	$\leq 2.5^\circ$
金屬 Metal	滾珠軸承 Ball bearings	$\leq 1.2$ kgf	$\leq 0.7$ kgf	$\leq 6$ kgf	$\leq 0.05$ mm	$\leq 0.3$ mm	$\leq 2.5^\circ$

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.4	10	20°	$\phi$ 1.98, $\phi$ 2.28	1/25, 1/110, 1/136, 1/484, 1/597, 1/735, 1/2124, 1/3968
0.4	13	20°	$\phi$ 1.98, $\phi$ 2.28	1/20, 1/77, 1/90, 1/336, 1/393, 1/1079, 1/1475
0.4	16	20°	$\phi$ 1.98, $\phi$ 2.28	1/18, 1/66, 1/246
0.4	12	20°	$\phi$ 1.98, $\phi$ 2.28	1/5

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/5	1/18	1/20	1/25	1/66	1/77	1/90	1/110	1/136	1/246	1/336	1/393	1/484	1/597	1/735	1/1079	1/1475	1/2124	1/3968
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	3	3	3	4	4	4	4	4	5	5	5	5	5	5	6	6	6	6
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	9	9	9	12	12	12	12	12	15	15	15	15	15	15	18	18	18	18
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%
長度 Length (L)	23.3	29.5	29.5	29.5	35.7	35.7	35.7	35.7	35.7	41.9	41.9	41.9	41.9	41.9	41.9	48.1	48.1	48.1	48.1
重量 (含油軸承) Weight (g) / Sleeve bearings	46	51	51	51	58	58	58	58	58	65	65	65	65	65	65	72	72	72	72
重量 (滾珠軸承) Weight (g) / Ball bearings	46	51	51	51	58	58	58	58	58	65	65	65	65	65	65	72	72	72	72

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

# IG-22CGM

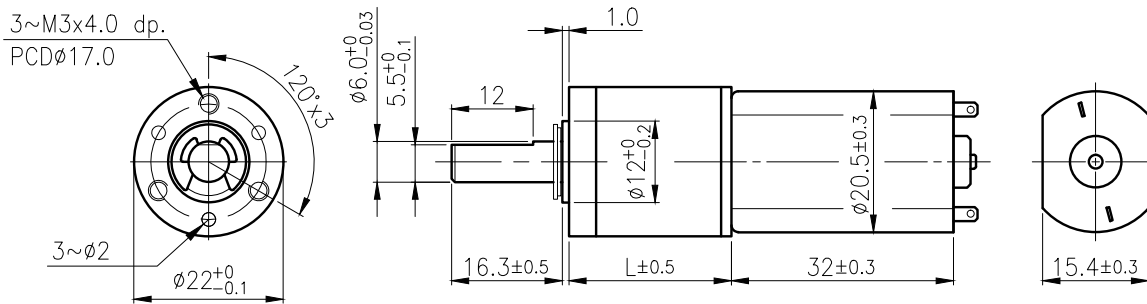
## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/5	1/18	1/20	1/25	1/66	1/77	1/90	1/110	1/136	1/246	1/336	1/393	1/484	1/597	1/735	1/1079	1/1475	1/2124	1/3968		
12V 定格扭力 Rated torque (gf-cm)	80	270	310	380	850	1000	1150	1400	1700	2600	3700	4200	5000	5000	5000	6000	6000	6000	6000		
12V 定格轉速 Rated speed (rpm)	1400	375	325	260	101	86	74	60	48	26	19	16	13.8	11.5	9.5	6.7	5	3.4	1.8		
24V 定格扭力 Rated torque (gf-cm)	80	270	310	380	850	1000	1150	1400	1700	2600	3700	4200	5000	5000	5000	6000	6000	6000	6000		
24V 定格轉速 Rated speed (rpm)	1550	414	355	290	110	95	82	66	53	29	21	18	15.3	12.7	10.5	7.4	5.5	3.9	1.95		
軸心迴轉方向 Rotation direction	CCW																				
長度 Length (L)	23.3		29.5		35.7				41.9				48.1								

RB

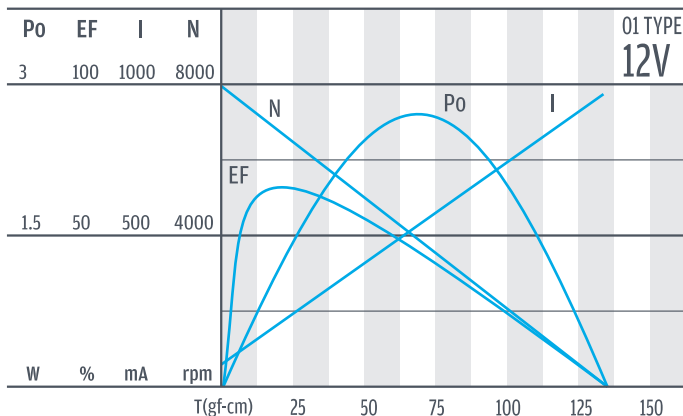
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	22	6700	≤ 200	8000	≤ 70	1.5	32
24	22	7400	≤ 110	9000	≤ 40	1.7	32

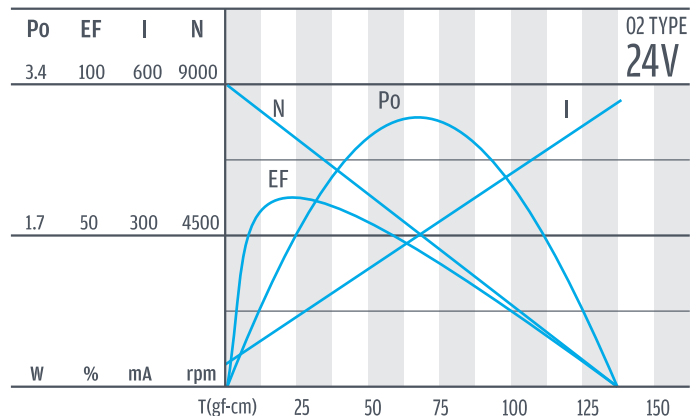
PG

### 馬達單體特性/ Motor Characteristics



Encoder

Driver



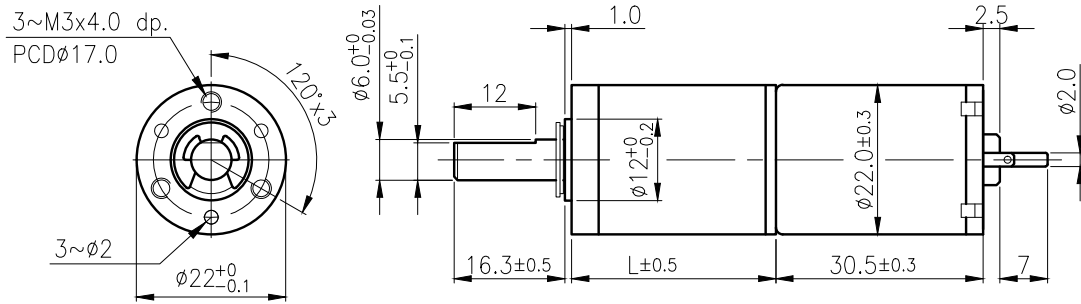
# IG-22CGM

## 03 & 04 TYPE



### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

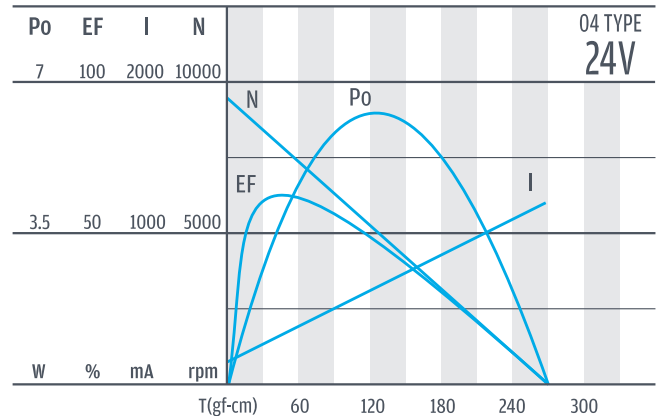
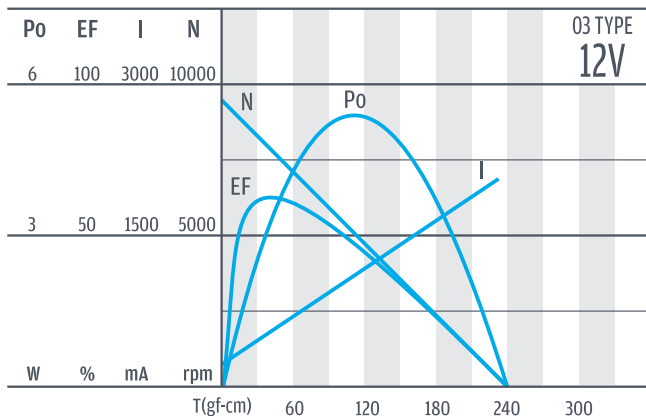
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/5	1/18	1/20	1/25	1/66	1/77	1/90	1/110	1/136	1/246	1/336	1/393	1/484	1/597	1/735	1/1079	1/1475	1/2124	1/3968	
12V	定格扭力 Rated torque (gf-cm)	170	560	650	820	1800	2100	2450	3000	3700	5000	5000	5000	5000	5000	5000	6000	6000	6000	6000	
	定格轉速 Rated speed (rpm)	1500	400	340	280	105	94	80	65	53	29	22	19	15.5	12.5	10	7.1	5.3	3.8	2	
24V	定格扭力 Rated torque (gf-cm)	190	640	750	930	2000	2400	2800	3500	4000	5000	5000	5000	5000	5000	5000	6000	6000	6000	6000	
	定格轉速 Rated speed (rpm)	1600	420	350	290	110	98	84	68	55	31	23	20	16	13	10.5	7.4	5.5	3.9	2	
	軸心迴轉方向 Rotation direction	CW																			
	長度 Length (L)	23.3	29.5		35.7				41.9				48.1								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	46	7230	$\leq$ 500	9000	$\leq$ 120	3.41	43
24	53	7550	$\leq$ 300	9000	$\leq$ 80	4.11	43

### 馬達單體特性/ Motor Characteristics



IG

# IG-22CGM

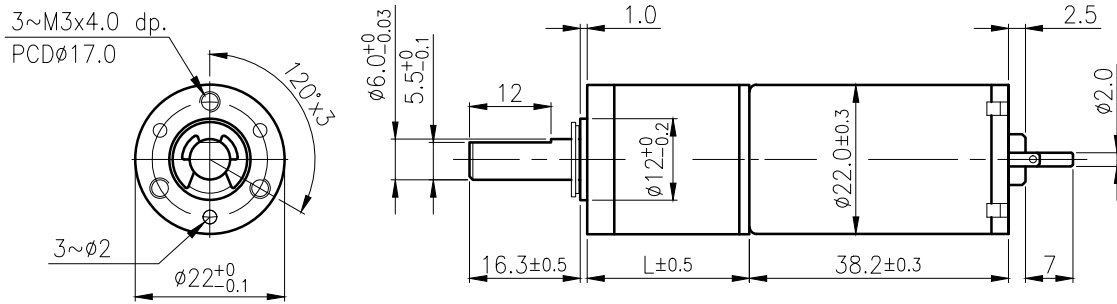
## 05 & 06 TYPE



Right Angle

### 外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/5	1/18	1/20	1/25	1/66	1/77	1/90	1/110	1/136	1/246	1/336	1/393	1/484	1/597	1/735	1/1079	1/1475	1/2124	1/3968
12V 定格扭力 Rated torque (gf-cm)	260	850	1000	1200	2700	3200	3700	4000	4000	5000	5000	5000	5000	5000	5000	6000	6000	6000	6000
12V 定格轉速 Rated speed (rpm)	1500	400	340	280	105	92	79	64	52	29.4	22.4	19.6	16	12.9	10.5	7.4	5.5	4	2
24V 定格扭力 Rated torque (gf-cm)	260	850	1000	1200	2700	3200	3700	4000	4000	5000	5000	5000	5000	5000	5000	6000	6000	6000	6000
24V 定格轉速 Rated speed (rpm)	1550	410	350	290	110	95	81	67	56	31	23	20	16.3	13.1	10.7	7.5	5.6	4	2
軸心迴轉方向 Rotation direction	CW																		
長度 Length (L)	23.3	29.5					35.7						41.9				48.1		

RB

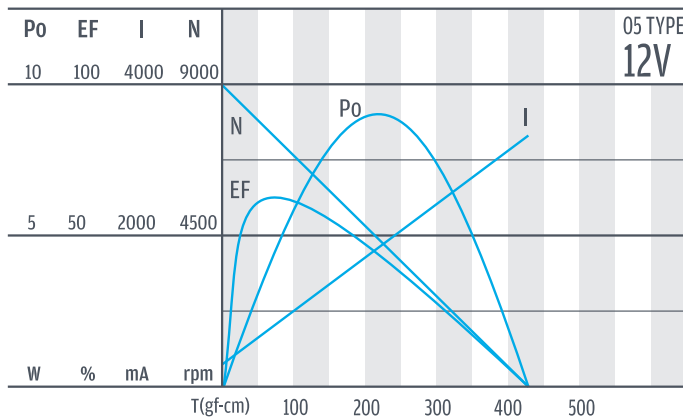
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	70	7100	$\leq$ 700	9000	$\leq$ 190	5.1	51
24	70	7400	$\leq$ 360	9000	$\leq$ 120	5.3	51

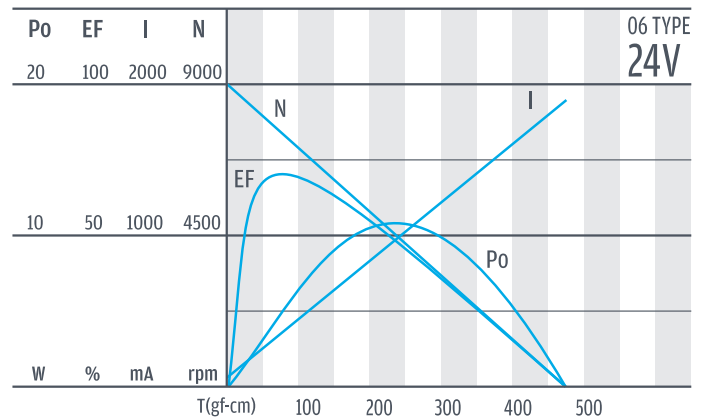
PG

### 馬達單體特性/ Motor Characteristics



Encoder

Driver

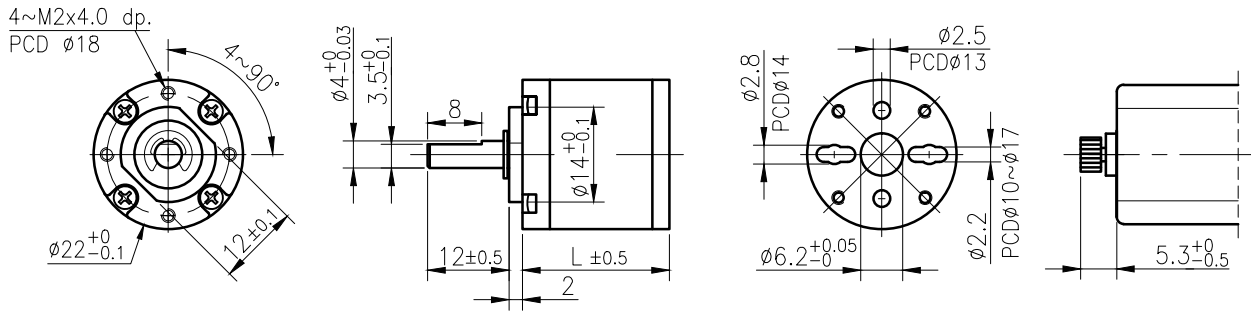




# IG-22P



## 外形尺寸 & 馬達齒鋸合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
粉末金屬 Powder Metal	含油軸承 Sleeve bearing	$\leq 0.8$ kgf	$\leq 0.6$ kgf	$\leq 5$ kgf	$\leq 0.08$ mm	$\leq 0.2$ mm	$\leq 3^\circ$
粉末金屬 Powder Metal	滾珠軸承 Ball bearings	$\leq 1$ kgf	$\leq 0.6$ kgf	$\leq 5$ kgf	$\leq 0.05$ mm	$\leq 0.2$ mm	$\leq 3^\circ$

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.3	13	$20^\circ$	$\phi 1.98$	1/4, 1/16, 1/19, 1/62, 1/72, 1/84, 1/104, 1/231, 1/270 1/316, 1/370, 1/455, 1/1014, 1/1249, 1/1621, 1/1996
0.3	16	$20^\circ$	$\phi 1.98$	1/14, 1/53, 1/198, 1/742

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.8	1.3	1.3	1.3	1.7	1.7	1.7	1.7	1.7	2	2	2	2	2	2.5	2.5	2.5	2.5	2.5	2.5
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	2.4	3.9	3.9	3.9	5.1	5.1	5.1	5.1	5.1	6	6	6	6	6	6	7.5	7.5	7.5	7.5	7.5
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%
長度 (L) Length (L)	14.40	18.05	18.05	18.05	21.70	21.70	21.70	21.70	21.70	25.35	25.35	25.35	25.35	25.35	25.35	29	29	29	29	29
重量 (含油軸承) Weight (g) / Sleeve bearing	27	31	31	31	35	35	35	35	35	60	60	60	60	60	60	65	65	65	65	65
重量 (滾珠軸承) Weight (g) / Ball bearings	26	30	30	30	34	34	34	34	34	59	59	59	59	59	59	64	64	64	64	64

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

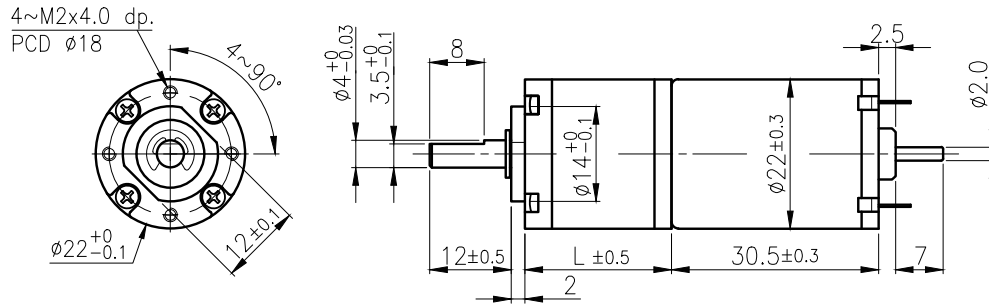
# IG-22PGM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
12V 定格扭力 Rated torque (gf-cm)	100	300	350	410	970	1100	1300	1500	1700	2000	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500
12V 定格轉速 Rated speed (rpm)	1000	340	290	245	90	77	66	56	46	24	21	18	16	13.5	11	7.3	5	4.2	3.3	2.7
24V 定格扭力 Rated torque (gf-cm)	120	360	420	490	1150	1300	1500	1700	1700	2000	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500
24V 定格轉速 Rated speed (rpm)	1000	330	280	240	89	76	65	55	46	24	21	18	16	13.5	11	7.3	5	4.2	3.3	2.7
軸心迴轉方向 Rotation direction	CW																			
長度 Length (L)	14.40		18.05			21.70					25.35					29				

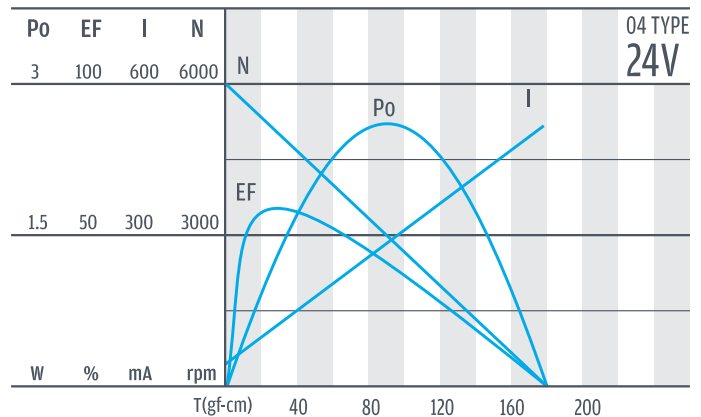
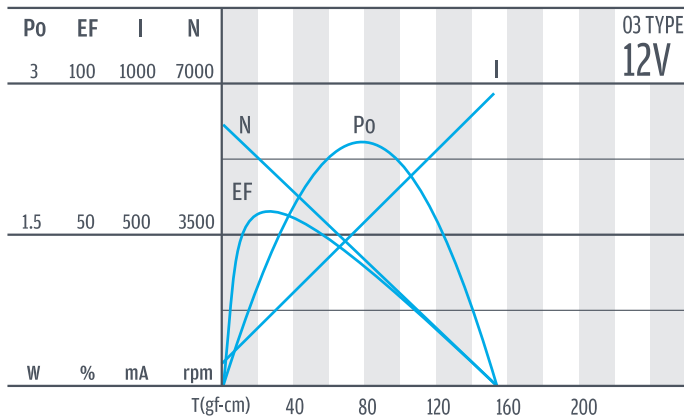
WG

PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	31	4790	$\leq 240$	6000	$\leq 80$	1.52	43
24	37	4710	$\leq 145$	6000	$\leq 55$	1.79	43

### 馬達單體特性/ Motor Characteristics



Encoder

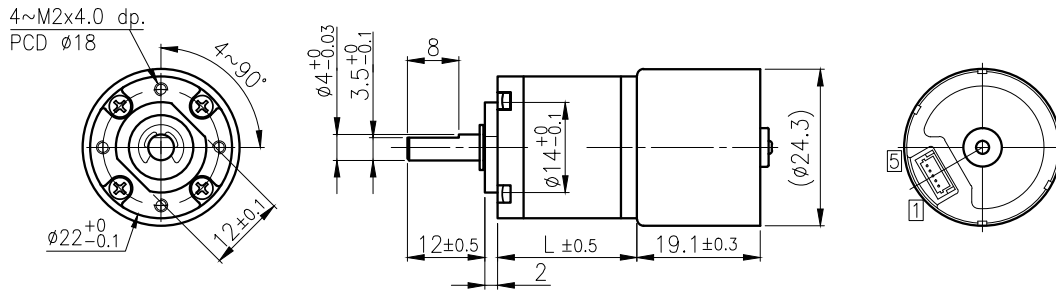
Driver

# IG-22PGM

## 41 & 42 TYPE



### 外形尺寸/ Appearance Size



unit:mm

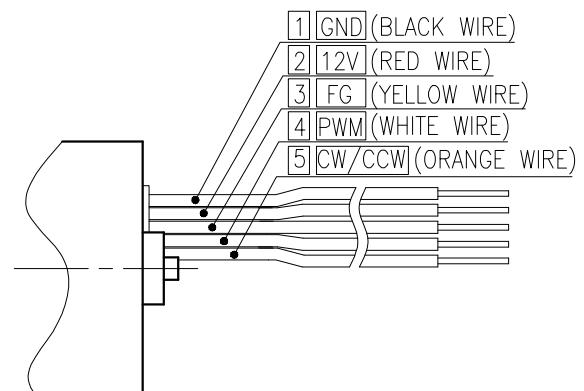
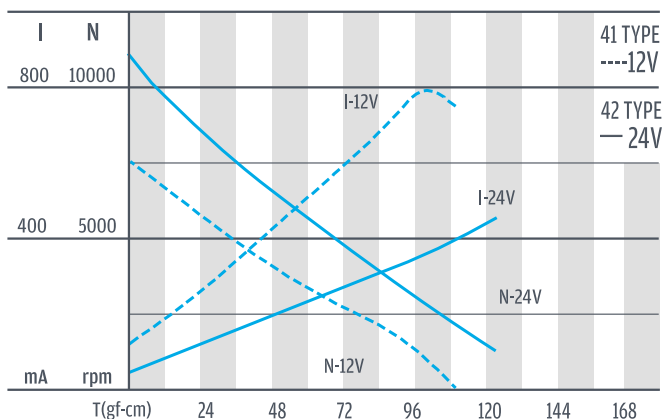
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio		1/4	1/14	1/16	1/19	1/53	1/62	1/72	1/84	1/104	1/198	1/231	1/270	1/316	1/370	1/455	1/742	1/1014	1/1249	1/1621	1/1996
12V	定格扭力 Rated torque (gf-cm)	100	290	345	400	940	1100	1290	1500	1700	2000	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500
	定格轉速 Rated speed (rpm)	1200	380	320	275	100	85	74	63	51	28	25	22	18	16	13	8	6.1	5.1	4	3.4
24V	定格扭力 Rated torque (gf-cm)	95	270	320	375	885	1030	1200	1400	1700	2000	2000	2000	2000	2000	2000	2500	2500	2500	2500	2500
	定格轉速 Rated speed (rpm)	1437	448	383	328	119	102	87	75	62	35	31	28	25	21.5	17.6	10.9	8	6.5	5.2	4.3
軸心迴轉方向 Rotation direction		CW																			
長度 Length (L)		14.40	18.05				21.70						25.35							29	

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	30	5340	≤ 310	7400	≤ 180	1.65	28
24	28	6300	≤ 180	8700	≤ 140	1.81	28

### 馬達單體特性/ Motor Characteristics



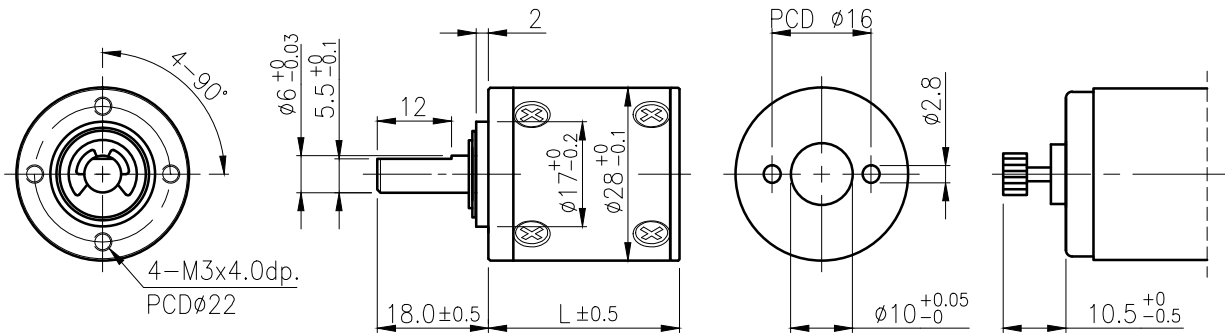
IG

# IG-28



Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearings	≤ 3 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 2.5°
金屬 Metal	滾珠軸承 Ball bearings	≤ 3.5 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 2.5°

WG

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	11	20°	$\phi$ 2.28	1/5, 1/19, 1/27, 1/71, 1/100, 1/139, 1/264, 1/516, 1/721
0.5	17	20°	$\phi$ 2.28	1/4, 1/14, 1/51, 1/189
0.5	8	20°	$\phi$ 2.28	1/35, 1/939

PG

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	2	3	3	4	4	6	6	8	8	10	10	10	10	10
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	6	6	9	9	12	12	18	18	24	24	30	30	30	30	30
效率 Efficiency	80%	80%	70%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%	50%
長度 Length (L)	24.5	24.5	30.9	30.9	30.9	30.9	37.3	37.3	37.3	37.3	43.7	43.7	43.7	43.7	43.7
重量 (含油軸承) Weight (g) /Sleeve bearings	71	71	81	81	81	81	94	94	94	94	108	108	108	108	108
重量 (滾珠軸承) Weight (g) /Ball bearings	70	70	80	80	80	80	93	93	93	93	107	107	107	107	107

Encoder

Driver

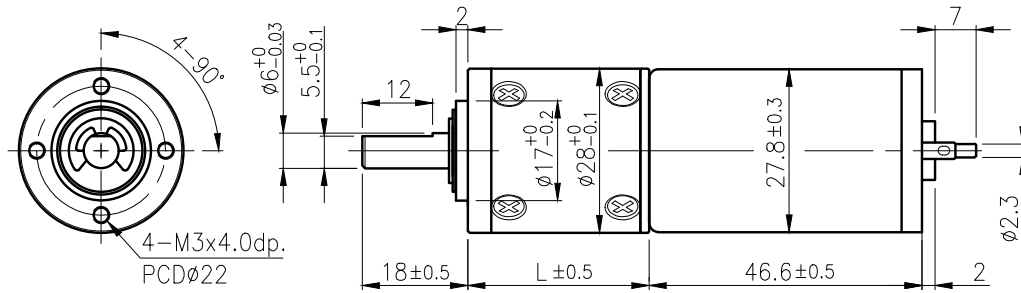
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-28GM

## 03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

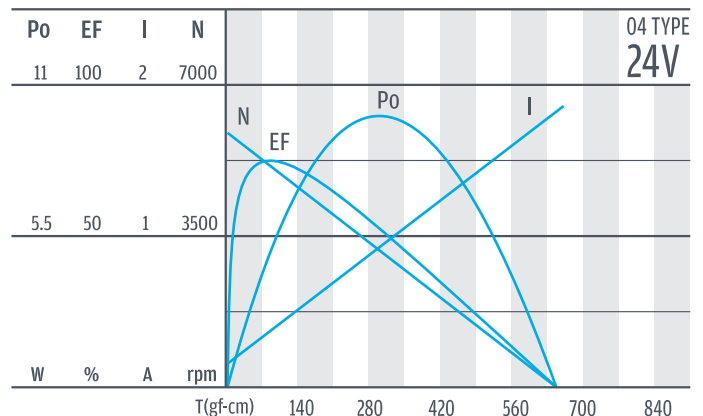
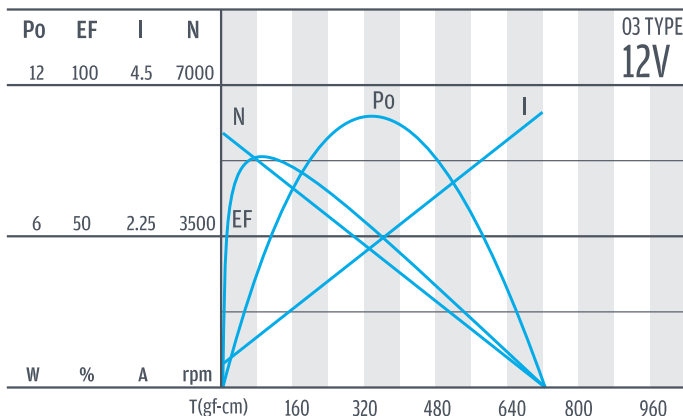
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939			
12V	定格扭力 Rated torque (kgf-cm)	0.32	0.75	1	1.4	1.9	2.4	3.3	4.7	6.6	7.4	10	10	10	10			
	定格轉速 Rated speed (rpm)	1000	375	270	193	148	102	73	52	37.3	27.5	19.7	10.5	7.5	5.7			
24V	定格扭力 Rated torque (kgf-cm)	0.38	0.9	1.2	1.7	2.3	2.8	4	5.6	7.8	8.8	10	10	10	10			
	定格轉速 Rated speed (rpm)	990	370	265	191	147	101	72	51.5	36.9	27.2	19.3	10.4	7.4	5.7			
	軸心迴轉方向 Rotation direction	CCW																
	長度 Length (L)	24.5		30.9				37.3					43.7					

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	79	5200	≤0.5	6000	≤0.13	4.22	93
24	94	5140	≤0.3	6000	≤0.08	4.96	91

馬達單體特性/ Motor Characteristics



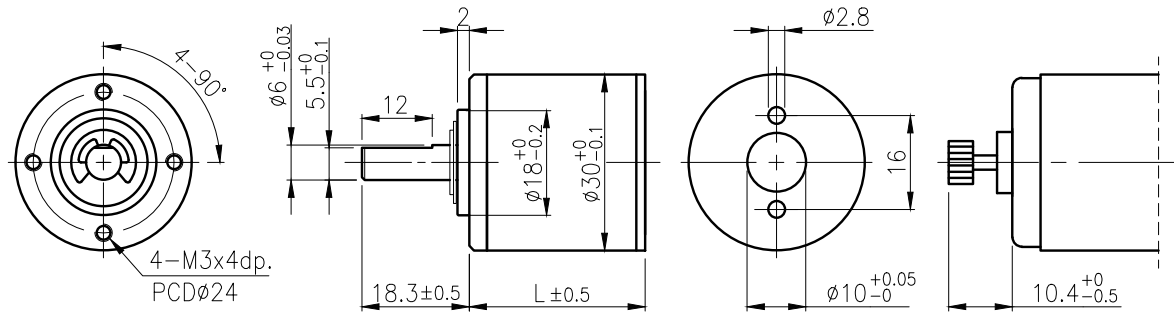
IG

# IG-30



Right Angle

## 外形尺寸 & 馬達齒鉤尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 3 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 2.5°
金屬 Metal	滾珠軸承 Ball bearings	≤ 3.5 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 2.5°

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	11	20°	∅2.28, ∅2.48, ∅2.98	1/5, 1/19, 1/27, 1/71, 1/100, 1/139, 1/264, 1/516, 1/721
0.5	17	20°	∅2.28, ∅2.48, ∅2.98	1/4, 1/14, 1/51, 1/189
0.5	8	20°	∅2.28	1/35, 1/939

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	2	3	3	4	4	6	6	8	8	10	10	10	10	10
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	6	6	9	9	12	12	18	18	24	24	30	30	30	30	30
效率 Efficiency	80%	80%	70%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%	50%
長度 Length (L)	23.6	23.6	30	30	30	30	36.4	36.4	36.4	36.4	42.8	42.8	42.8	42.8	42.8
重量 (含油軸承) Weight (g) / Sleeve bearing	79	79	92	92	92	92	107	107	107	107	122	122	122	122	122
重量 (滾珠軸承) Weight (g) / Ball bearings	78	78	91	91	91	91	106	106	106	106	121	121	121	121	121

PG

Encoder

Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

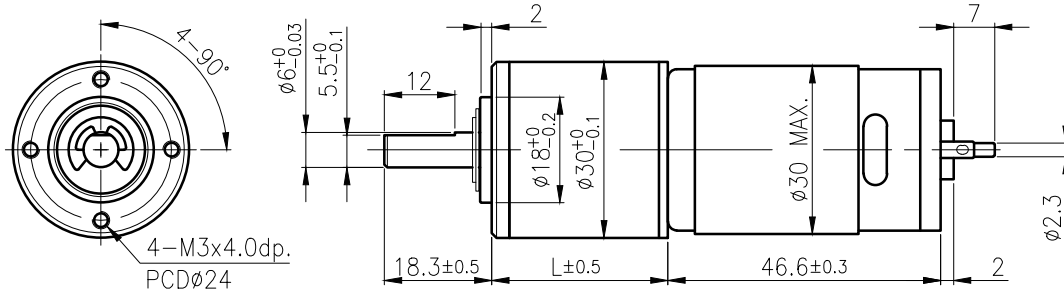
# IG-30GM

## 03 & 04 TYPE



外形尺寸/ Appearance Size

視圖方向僅供參考 / The position of the screw hole and motor terminal in the photo is only for reference.



unit:mm

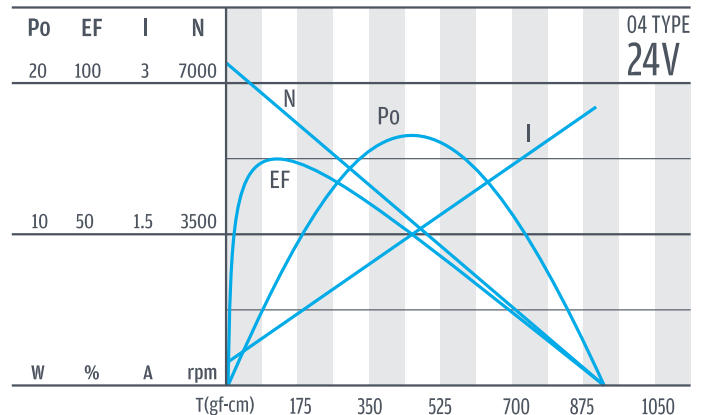
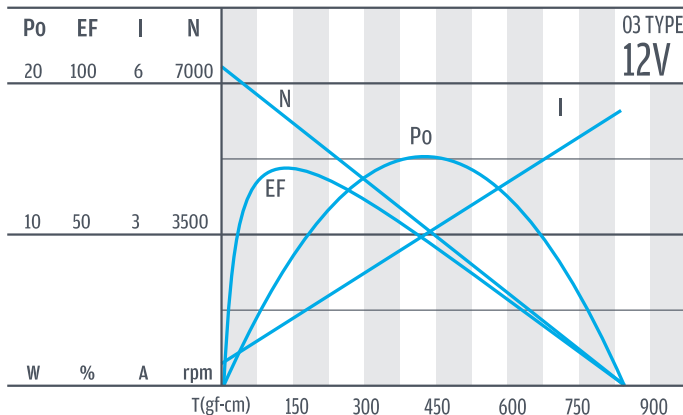
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939	
12V	定格扭力 Rated torque (kgf-cm)	0.45	1.1	1.5	2.1	2.7	3.4	4.7	6.6	8	10	10	10	10	10	10	
	定格轉速 Rated speed (rpm)	1120	430	310	221	170	117	83	60	45	32	25	13.2	9.6	7.3		
24V	定格扭力 Rated torque (kgf-cm)	0.54	1.2	1.7	2.4	3.1	4	5.5	7.8	8	10	10	10	10	10		
	定格轉速 Rated speed (rpm)	1150	445	320	229	176	121	87	62	46	34.5	26	13.5	9.8	7.3		
軸心迴轉方向 Rotation direction		CCW															
長度 Length (L)		23.6	30			36.4			42.8								

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	110	5950	≤0.9	7200	≤0.15	7.0	110
24	130	6160	≤0.5	7200	≤0.08	8.5	110

馬達單體特性/ Motor Characteristics



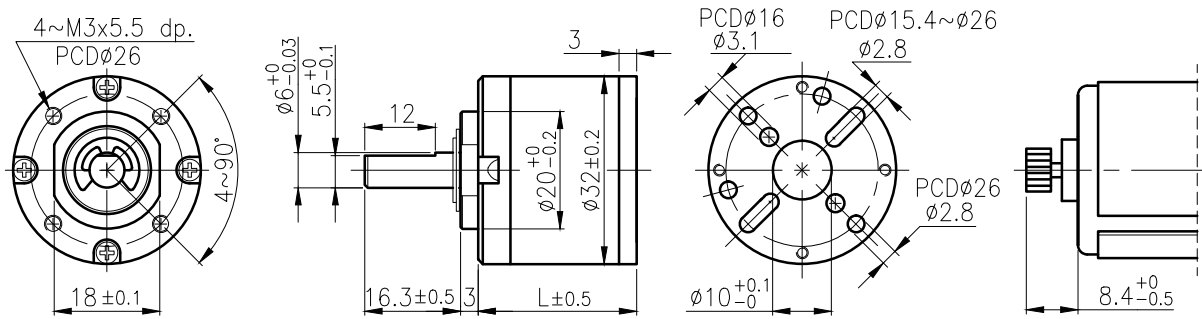
IG

# IG-32



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 3$ kgf	$\leq 2.5$ kgf	$\leq 10$ kgf	$\leq 0.08$ mm	$\leq 0.3$ mm	$\leq 2.5^\circ$
金屬 Metal	滾珠軸承 Ball bearings	$\leq 3.5$ kgf	$\leq 2.5$ kgf	$\leq 10$ kgf	$\leq 0.05$ mm	$\leq 0.3$ mm	$\leq 2.5^\circ$

RB

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	11	$20^\circ$	$\phi 2.28, \phi 2.48, \phi 2.98, \phi 3.16$	1/5, 1/19, 1/27, 1/71, 1/100, 1/139, 1/264, 1/516, 1/721
0.5	17	$20^\circ$	$\phi 2.28, \phi 2.48, \phi 2.98, \phi 3.16$	1/4, 1/14, 1/51, 1/189
0.5	8	$20^\circ$	$\phi 2.28$	1/35, 1/939

WG

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	2	4	4	6	6	8	8	10	10	12	12	12	12	12
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	6	6	12	12	18	18	24	24	30	30	36	36	36	36	36
效率 Efficiency	80%	80%	70%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%	50%
長度 Length (L)	20.6	20.6	27	27	27	27	33.4	33.4	33.4	33.4	39.8	39.8	39.8	39.8	39.8
重量 (含油軸承) Weight (g)/Sleeve bearing	102	102	122	122	122	122	147	147	147	147	173	173	173	173	173
重量 (滾珠軸承) Weight (g)/Ball bearings	101	101	121	121	121	121	146	146	146	146	172	172	172	172	172

PG

Encoder

Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

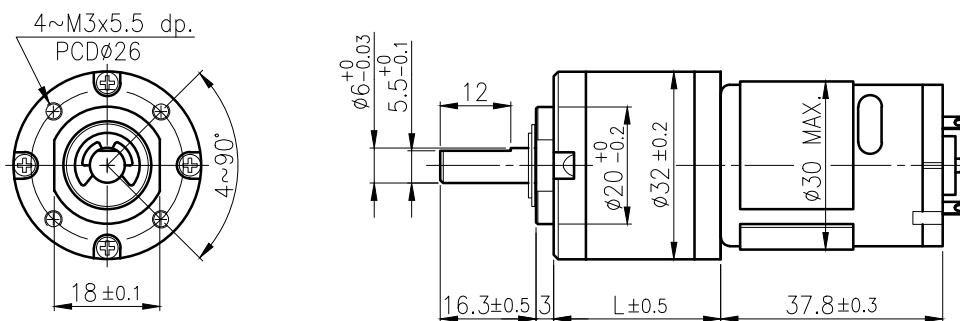


# IG-32GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

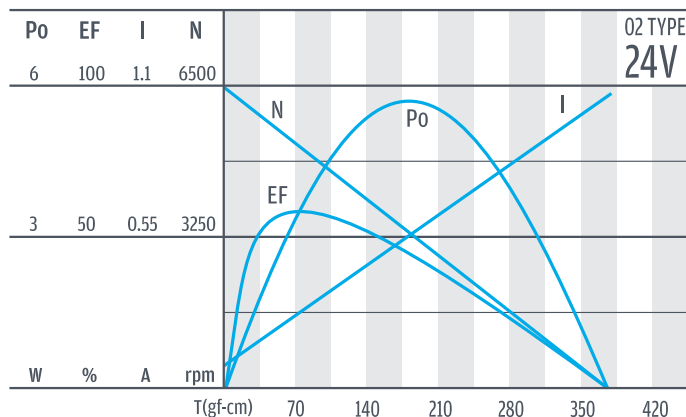
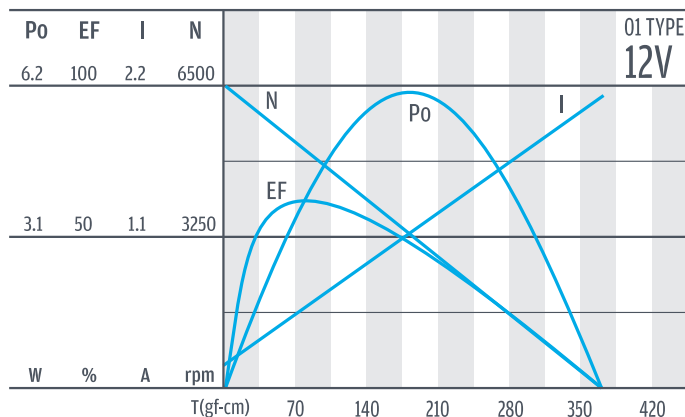
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939
12V														
定格扭力 Rated torque(kgf-cm)	0.3	0.75	1	1.4	1.9	2.3	3.3	4.6	6.5	7.3	10	12	12	12
定格轉速 Rated speed (rpm)	995	373	270	195	150	104	74	53	38	28	20	11.2	8.3	6.3
24V														
定格扭力 Rated torque(kgf-cm)	0.3	0.7	1.0	1.4	1.8	2.2	3.1	4.4	6.1	6.9	9.7	12	12	12
定格轉速 Rated speed (rpm)	990	370	265	191	150	103	74	53	38	28	20	11.2	8.3	6.3
軸心迴轉方向 Rotation direction	CCW													
長度 Length (L)	20.6		27				33.4					39.8		

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current(A)	定格出力 Rated output (W)	重量 Weight (g)
12	78	5290	$\leq$ 0.53	6500	$\leq$ 0.15	4.22	73.0
24	74	5250	$\leq$ 0.25	6500	$\leq$ 0.085	3.97	73.0

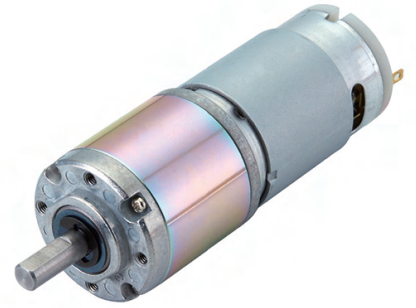
### 馬達單體特性/ Motor Characteristics



IG

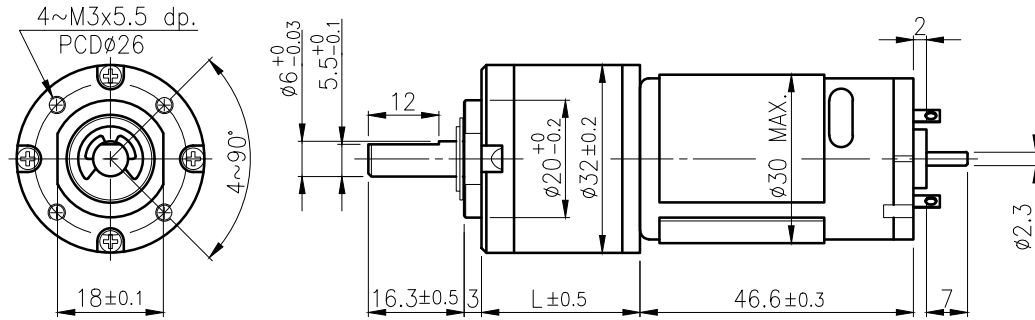
# IG-32GM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939	
12V	定格扭力 Rated torque (kgf-cm)	0.45	1.1	1.5	2.1	2.7	3.4	4.7	6.6	9.1	10	12	12	12	12	
	定格轉速 Rated speed (rpm)	1140	430	310	221	170	117	83	60	44	32	24	12.9	9.5	7.2	
24V	定格扭力 Rated torque (kgf-cm)	0.54	1.2	1.7	2.4	3.1	4	5.5	7.8	10	12	12	12	12	12	
	定格轉速 Rated speed (rpm)	1170	445	320	229	176	121	87	62	45	34	25	13	9.6	7.2	
	軸心迴轉方向 Rotation direction	CCW														
	長度 Length (L)	20.6			27			33.4			39.8					

RB

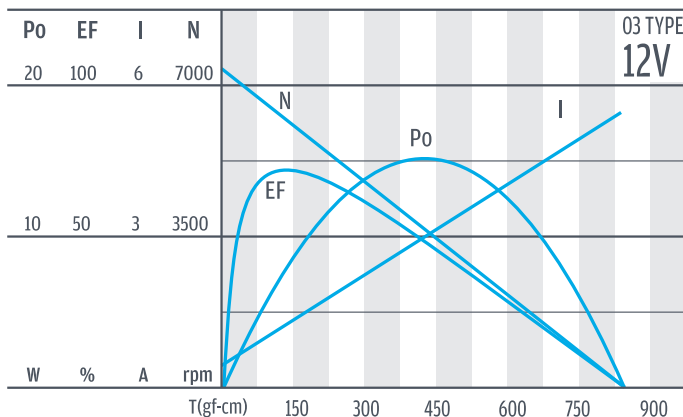
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	110	5950	≤0.9	7200	≤0.15	7.0	110
24	130	6160	≤0.5	7200	≤0.08	8.5	110

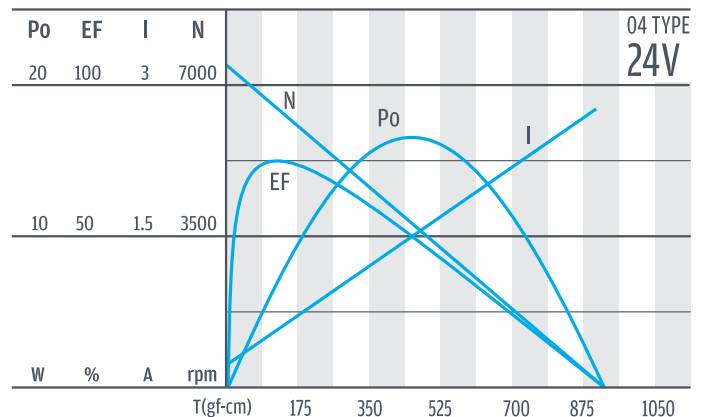
PG

### 馬達單體特性/ Motor Characteristics



Encoder

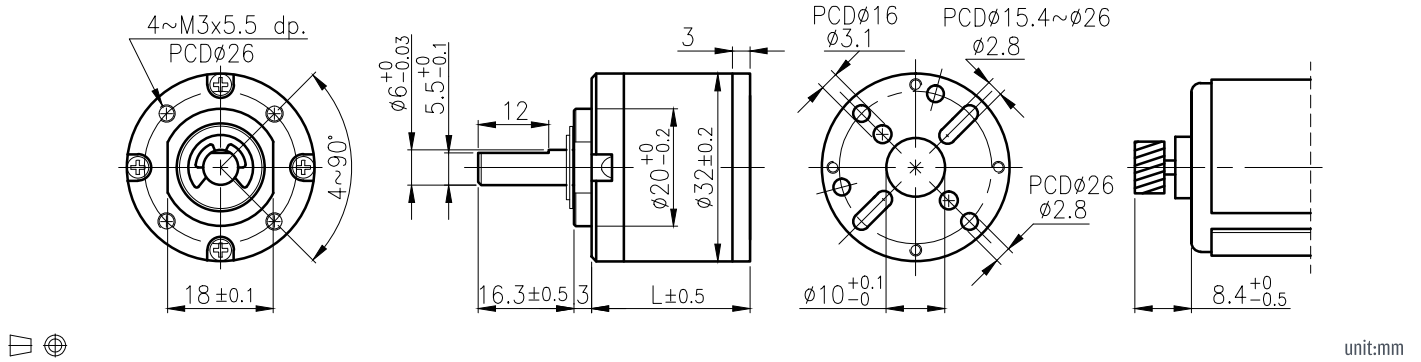
Driver



# IG-32H



外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 3 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 2.5°
金屬 Metal	滾珠軸承 Ball bearings	≤ 3.5 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 2.5°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	螺旋角 Helix angle	壓力角 Pressure angle	孔徑 Hole diameter	減速比 Reduction ratio
0.5	11	18° (左, left)	20°	∅2.28, ∅2.48, ∅2.98, ∅3.16	1/18, 1/25, 1/94, 1/132, 1/250, 1/349, 1/683
0.5	17	18° (左, left)	20°	∅2.28, ∅2.48, ∅2.98, ∅3.16	1/13, 1/48, 1/68, 1/180, 1/491
0.5	8	18° (左, left)	20°	∅2.28	1/33, 1/887

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/13	1/18	1/25	1/33	1/48	1/68	1/94	1/132	1/180	1/250	1/349	1/491	1/683	1/887
定格容許扭力 (kgf-cm max.) Rated tolerance torque	4	4	6	6	8	8	10	10	12	12	12	12	12	12
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	12	12	18	18	24	24	30	30	36	36	36	36	36	36
效率 Efficiency	70%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%
長度 Length (L)	27	27	27	27	33.4	33.4	33.4	33.4	39.8	39.8	39.8	39.8	39.8	39.8
重量 (含油軸承) Weight (g) / Sleeve bearing	109	109	109	109	134	134	134	134	160	160	160	160	160	160
重量 (滾珠軸承) Weight (g) / Ball bearings	108	108	108	108	133	133	133	133	159	159	159	159	159	159

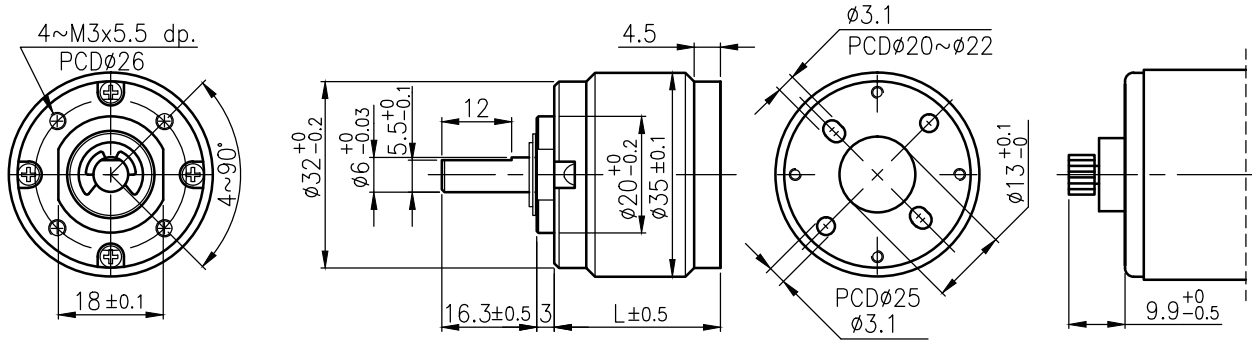
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

# IG-32P



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
粉末金屬 Powder Metal	含油軸承 Sleeve bearing	≤ 3 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 2.5°
粉末金屬 Powder Metal	滾珠軸承 Ball bearings	≤ 3.5 kgf	≤ 2.5 kgf	≤ 10 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 2.5°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	11	20°	∅2.28, ∅2.48, ∅2.98, ∅3.16	1/5, 1/19, 1/27, 1/71, 1/100, 1/139, 1/264, 1/516, 1/721
0.5	17	20°	∅2.28, ∅2.48, ∅2.98, ∅3.16	1/4, 1/14, 1/51, 1/189

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	2	4	4	6	8	8	10	10	12	12	12	12
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	6	6	12	12	18	24	24	30	30	36	36	36	36
效率 Efficiency	80%	80%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%
長度 Length (L)	22.1	22.1	28.5	28.5	28.5	34.9	34.9	34.9	34.9	41.3	41.3	41.3	41.3
重量 (含油軸承) Weight (g) / Sleeve bearing	109	109	143	143	143	177	177	177	177	211	211	211	211
重量 (滾珠軸承) Weight (g) / Ball bearings	108	108	142	142	142	176	176	176	176	210	210	210	210

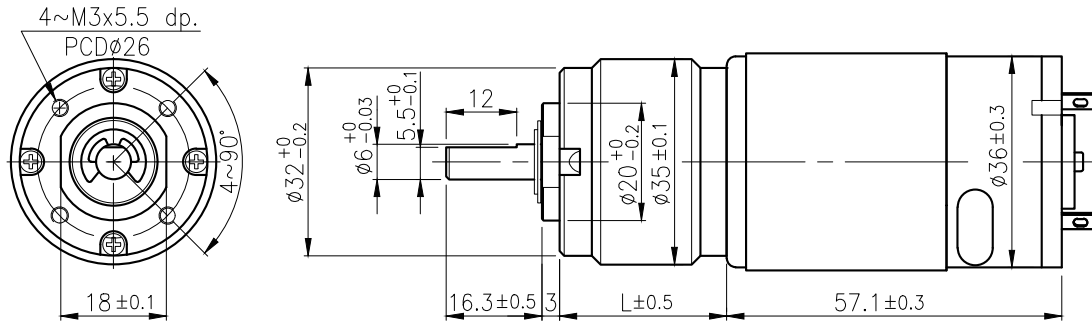
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-32PGM

## 01 & 02 TYPE



外形尺寸 / Appearance Size



unit:mm

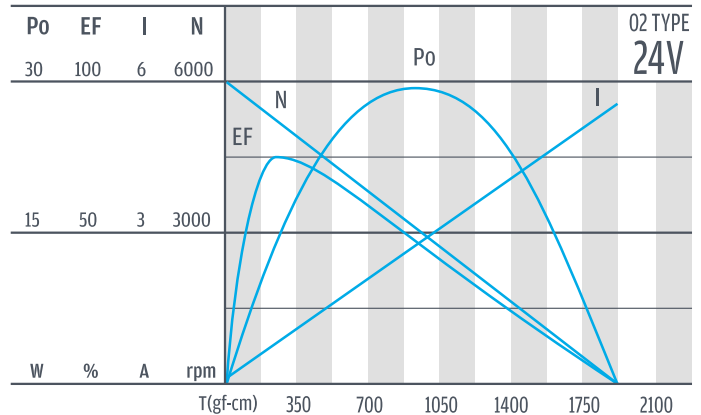
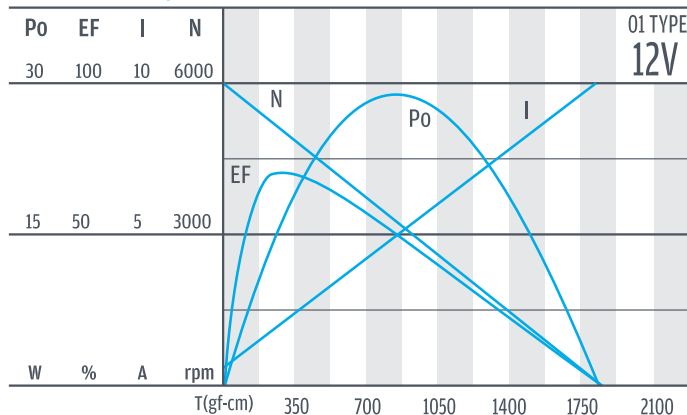
齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721					
12V 定格扭力 Rated torque (kgf-cm)	1	2.4	3.3	4.7	7.6	8	10	10	12	12	12	12					
12V 定格轉速 Rated speed (rpm)	950	359	257	183	97	71.5	52	39	29	21	11	8					
24V 定格扭力 Rated torque (kgf-cm)	1	2.3	3.2	4.5	7.3	8	10	10	12	12	12	12					
24V 定格轉速 Rated speed (rpm)	990	375	268	192	101	74.5	54	40	29.5	22	11.5	8					
軸心迴轉方向 Rotation direction	CCW																
長度 Length (L)	22.1		28.5				34.9				41.3						

馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤1.6	6000	≤0.25	12.80	220
24	240	5150	≤0.75	6000	≤0.13	12.70	220

馬達單體特性 / Motor Characteristics



IG

# IG-32PGM

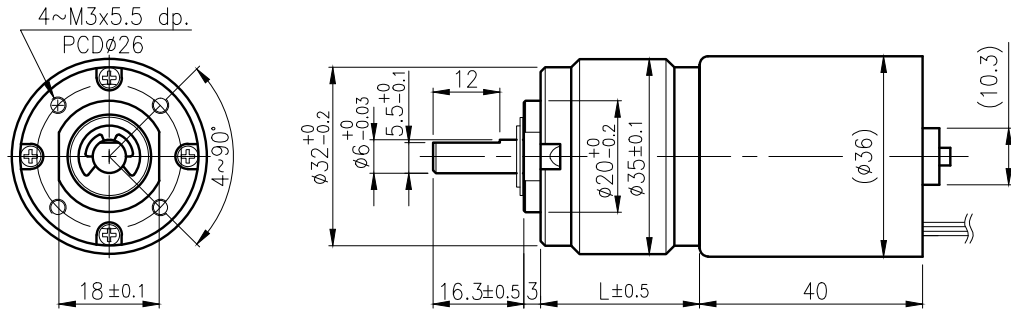
## 41 & 42 TYPE



Right Angle

### 外形尺寸/ Appearance Size

RA



unit:mm

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721				
12V	定格扭力 Rated torque (kgf-cm)	0.8	1.9	2.6	3.7	6.1	8	10	10	12	12	12	12				
	定格轉速 Rated speed (rpm)	380	140	100	73	38	28	20	15.5	11.5	8.5	4.5	3.4				
24V	定格扭力 Rated torque (kgf-cm)	1	2.4	3.3	4.7	7.6	8	10	10	12	12	12	12				
	定格轉速 Rated speed (rpm)	750	280	200	145	76	54	40	30	23	17	8.5	6.2				
	軸心迴轉方向 Rotation direction	CW															
	長度 Length (L)	22.1		28.5			34.9			41.3							

WG

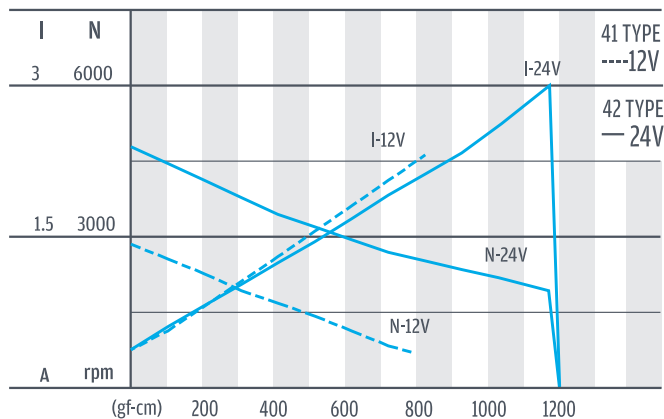
PG

### 馬達單體型式/ Motor Data

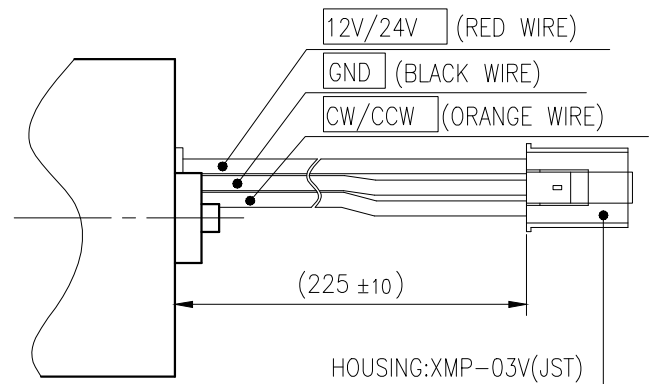
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	200	2000	$\leq$ 1.0	2800	$\leq$ 0.35	4.1	145
24	250	3900	$\leq$ 1.23	5000	$\leq$ 0.4	10	145

Encoder

### 馬達單體特性/ Motor Characteristics



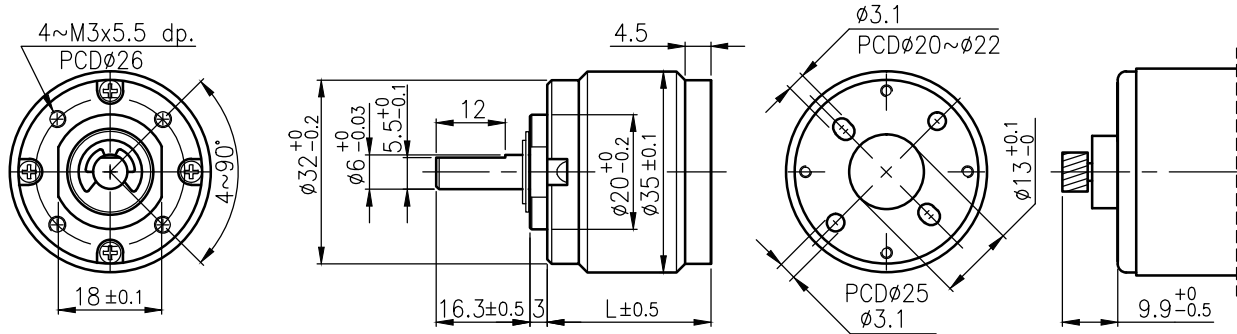
Driver



# IG-32PH



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
粉末金屬 Powder Metal	含油軸承 Sleeve bearing	$\leq 3$ kgf	$\leq 2.5$ kgf	$\leq 10$ kgf	$\leq 0.08$ mm	$\leq 0.3$ mm	$\leq 2.5^\circ$
粉末金屬 Powder Metal	滾珠軸承 Ball bearings	$\leq 3.5$ kgf	$\leq 2.5$ kgf	$\leq 10$ kgf	$\leq 0.05$ mm	$\leq 0.3$ mm	$\leq 2.5^\circ$

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	螺旋角 Helix angle	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	11	18° (左, left)	20°	$\phi$ 3.16	1/18, 1/25, 1/94, 1/132, 1/250, 1/349, 1/683
0.5	17	18° (左, left)	20°	$\phi$ 3.16	1/13, 1/48, 1/68, 1/180, 1/491
0.5	8	18° (左, left)	20°	$\phi$ 2.28	1/33, 1/887

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/13	1/18	1/25	1/33	1/48	1/68	1/94	1/132	1/180	1/250	1/349	1/491	1/683	1/887
定格容許扭力 (kgf-cm max.) Rated tolerance torque	4	4	6	6	8	8	10	10	12	12	12	12	12	12
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	12	12	18	18	24	24	30	30	36	36	36	36	36	36
效率 Efficiency	70%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%
長度 Length (L)	28.5	28.5	28.5	28.5	34.9	34.9	34.9	34.9	41.3	41.3	41.3	41.3	41.3	41.3
重量 (含油軸承) Weight (g) /Sleeve bearing	143	143	143	143	177	177	177	177	211	211	211	211	211	211
重量 (滾珠軸承) Weight (g) /Ball bearings	142	142	142	142	176	176	176	176	210	210	210	210	210	210

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

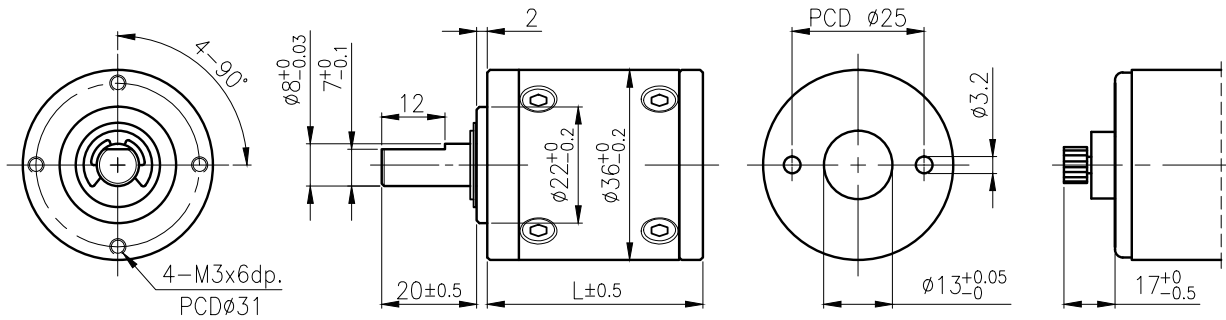
IG

# IG-36P



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
粉末金屬 Powder Metal	含油軸承 Sleeve bearing	≤ 5 kgf	≤ 3 kgf	≤ 15 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 3°
粉末金屬 Powder Metal	滾珠軸承 Ball bearings	≤ 8 kgf	≤ 3 kgf	≤ 15 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 3°

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.6	11	20°	Ø3.16	1/5, 1/19, 1/27, 1/71, 1/100, 1/139, 1/264, 1/516, 1/721
0.6	17	20°	Ø3.16	1/4, 1/14, 1/51, 1/189

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721
定格容許扭力 (kgf-cm max.) Rated tolerance torque	3	3	8	8	10	18	18	20	20	25	25	30	30
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	9	9	24	24	30	54	54	60	60	75	75	90	90
效率 Efficiency	80%	80%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%
長度 (L) Length (L)	33.1	33.1	41.8	41.8	41.8	50.5	50.5	50.5	50.5	59.2	59.2	59.2	59.2
重量 (含油軸承) Weight (g) /Sleeve bearing	130	130	170	170	170	210	210	210	210	250	250	250	250
重量 (滾珠軸承) Weight (g) /Ball bearings	132	132	172	172	172	212	212	212	212	252	252	252	252

PG

Encoder

Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

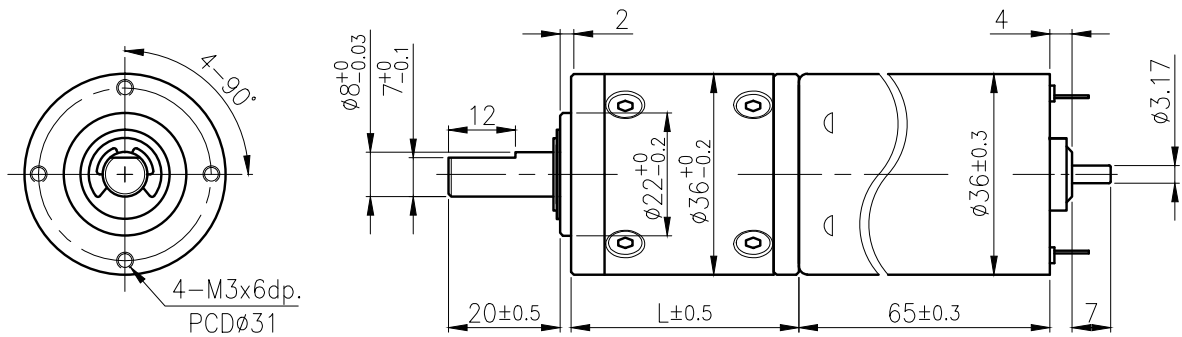


# IG-36PGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

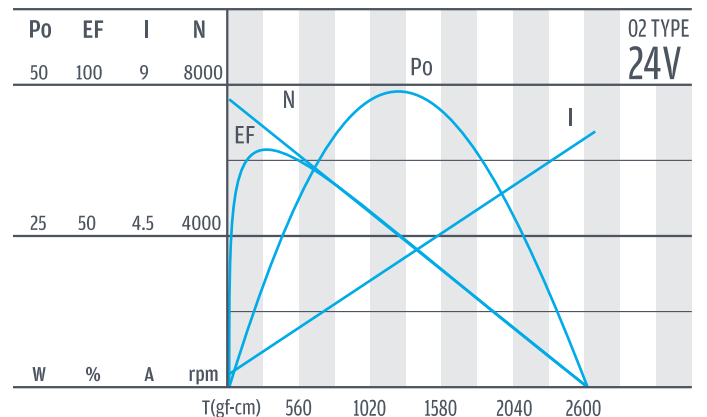
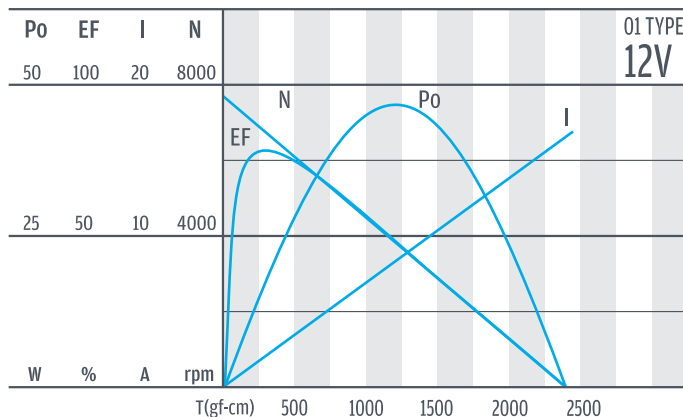
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721				
12V	定格扭力 Rated torque (kgf-cm)	1.1	2.5	3.6	5	8.2	11.5	16	20	25	25	30	30				
	定格轉速 Rated speed (rpm)	1250	475	340	243	129	92	66	47.2	34.8	25.1	13.2	9.5				
24V	定格扭力 Rated torque (kgf-cm)	1.1	2.7	3.8	5.3	8.7	12	17	20	25	25	30	30				
	定格轉速 Rated speed (rpm)	1240	470	335	240	127	91	65	46.5	34.3	24.8	13	9.4				
	軸心迴轉方向 Rotation direction	CCW															
	長度 Length (L)	33.1	41.8				50.5				59.2						

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	270	6570	≤2.05	7500	≤0.3	18.23	222
24	285	6480	≤1.05	7500	≤0.21	18.96	224

### 馬達單體特性/ Motor Characteristics



IG

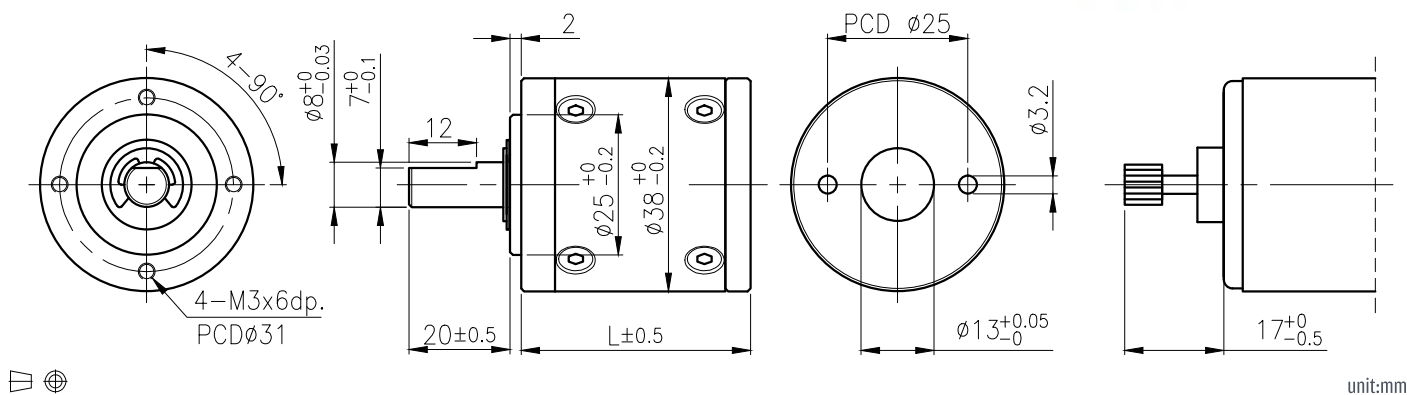
# IG-38P



Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension

RA



unit:mm

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
粉末金屬 Powder Metal	含油軸承 Sleeve bearing	≤ 5 kgf	≤ 3 kgf	≤ 15 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 3°
粉末金屬 Powder Metal	滾珠軸承 Ball bearings	≤ 8 kgf	≤ 3 kgf	≤ 15kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 3°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.6	11	20°	ø3.16	1/5, 1/19, 1/27, 1/71, 1/100, 1/139, 1/264, 1/516, 1/721
0.6	17	20°	ø3.16	1/4, 1/14, 1/51, 1/189

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721
定格容許扭力 (kgf-cm max.) Rated tolerance torque	3	3	8	8	10	18	18	20	20	25	25	30	30
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	9	9	24	24	30	54	54	60	60	75	75	90	90
效率 Efficiency	80%	80%	70%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%
長度 Length (L)	33.1	33.1	41.8	41.8	41.8	50.5	50.5	50.5	50.5	59.2	59.2	59.2	59.2
重量 (含油軸承) Weight (g) /Sleeve bearing	147	147	195	195	195	243	243	243	243	291	291	291	291
重量 (滾珠軸承) Weight (g) /Ball bearings	149	149	197	197	197	245	245	245	245	293	293	293	293

Encoder

Driver

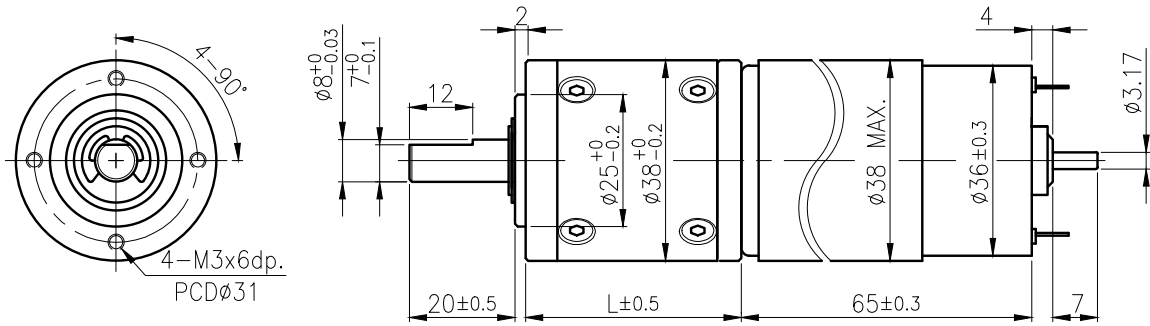
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-38PGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

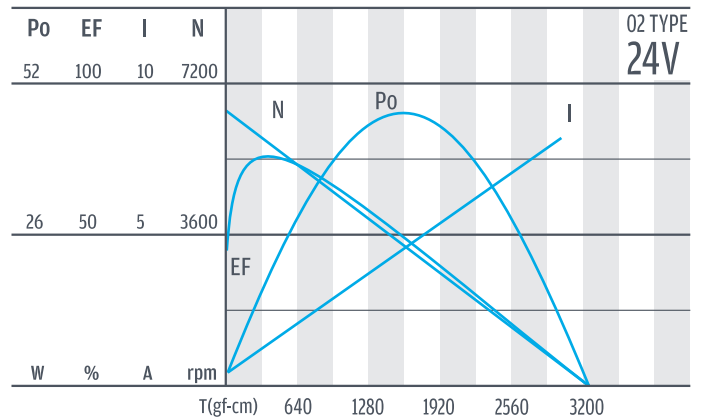
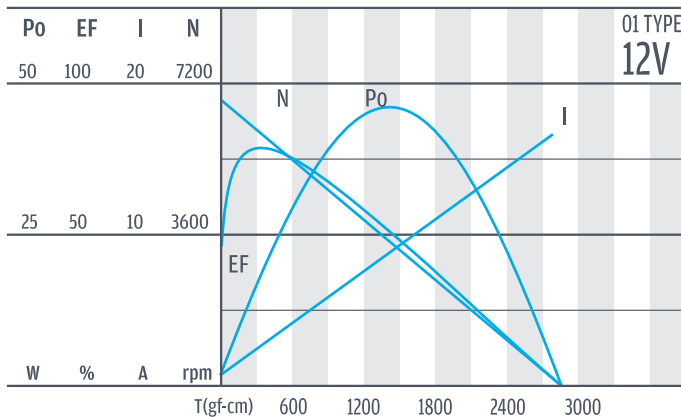
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/5	1/14	1/19	1/27	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721				
12V 定格扭力 Rated torque (kgf-cm)	1	2.4	3.3	4.7	7.6	10	15	20	23	25	30	30				
12V 定格轉速 Rated speed (rpm)	1100	420	300	210	110	81	58	41	30	22.5	11.6	8.4				
24V 定格扭力 Rated torque (kgf-cm)	1.1	2.7	3.7	5.2	8.5	12	16	20	25	25	30	30				
24V 定格轉速 Rated speed (rpm)	1050	390	280	200	105	76	55	41	29	22.5	11.6	8.4				
軸心迴轉方向 Rotation direction	CCW															
長度 Length (L)	33.1		41.8				50.5				59.2					

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	5800	≤1.6	6400	≤0.3	14.89	264
24	280	5500	≤0.9	6400	≤0.16	15.81	266

### 馬達單體特性/ Motor Characteristics

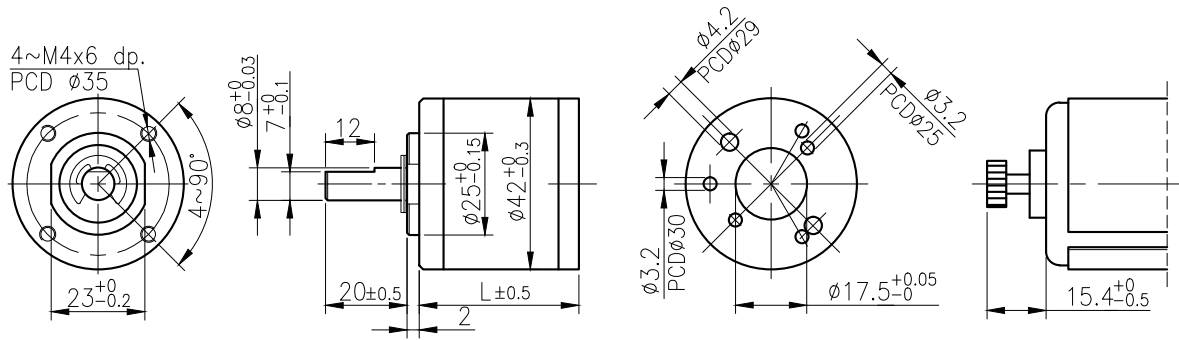


IG

# IG-42



外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 5$ kgf	$\leq 3$ kgf	$\leq 15$ kgf	$\leq 0.08$ mm	$\leq 0.3$ mm	$\leq 3^\circ$
金屬 Metal	滾珠軸承 Ball bearings	$\leq 8$ kgf	$\leq 3$ kgf	$\leq 15$ kgf	$\leq 0.05$ mm	$\leq 0.3$ mm	$\leq 3^\circ$

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔径 (mm) Hole diameter	減速比 Reduction ratio
0.6	12	$20^\circ$	$\phi 3.98$	1/24, 1/144, 1/864
0.6	15	$20^\circ$	$\phi 4.98$	1/720, 1/1062, 1/1470, 1/2500, 1/3000, 1/3600
0.6	18	$20^\circ$	$\phi 4.98$	1/17, 1/61, 1/104, 1/212, 1/624
0.6	24	$20^\circ$	$\phi 4.98$	1/14, 1/49, 1/84, 1/294, 1/504
0.6	20	$20^\circ$	$\phi 4.98$	1/4

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
定格容許扭力 (kgf-cm max.) Rated tolerance torque	3	8	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	9	24	24	24	54	54	54	60	60	75	75	90	90	90	90	90	90	90	90	90
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%
長度 Length (L)	32.5	39.2	39.2	39.2	45.9	45.9	45.9	45.9	45.9	52.6	52.6	52.6	52.6	52.6	52.6	59.6	59.6	59.6	59.6	59.6
重量 (含油軸承) Weight (g) /Sleeve bearing	141	193	193	193	233	233	233	233	233	283	283	283	283	283	283	328	328	328	328	328
重量 (滾珠軸承) Weight (g) /Ball bearings	139	191	191	191	231	231	231	231	231	281	281	281	281	281	281	326	326	326	326	326

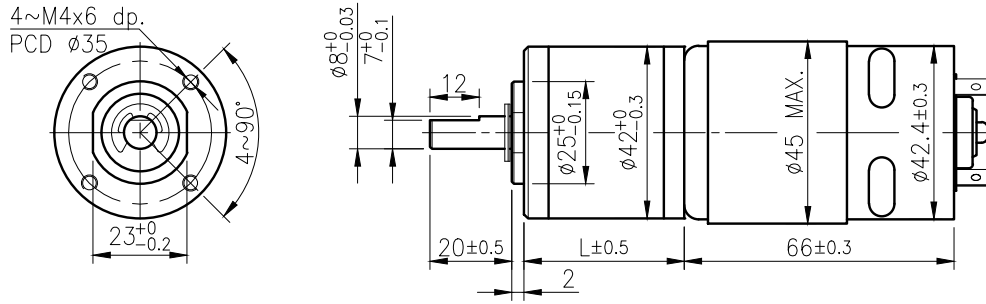
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-42GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

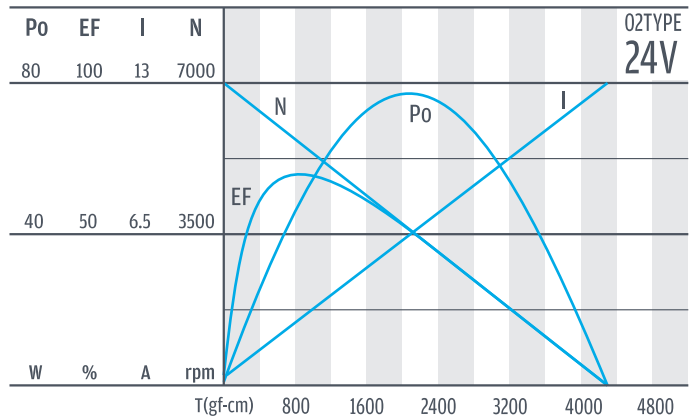
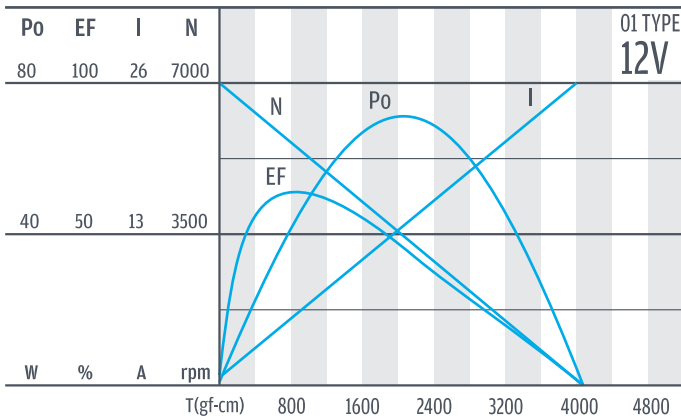
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600	
12V	減速比 Reduction ratio																					
	定格扭力 Rated torque (kgf-cm)	2.2	6.5	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30	30
24V	定格轉速 Rated speed (rpm)	1400	405	325	248	120	98	76	63	45	31	22	13.5	10.9	9.5	8	6.5	4.6	2.7	2.3	1.9	1.9
	定格扭力 Rated torque (kgf-cm)	1.8	5.4	6.6	8	16	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30	30
軸心迴轉方向 Rotation direction		CCW																				
長度 Length (L)		32.5		39.2		45.9				52.6				59.6								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	700	5700	≤5.5	7000	≤0.9	41.3	360
24	570	5900	≤2.1	7000	≤0.5	34.7	360

### 馬達單體特性/ Motor Characteristics



IG

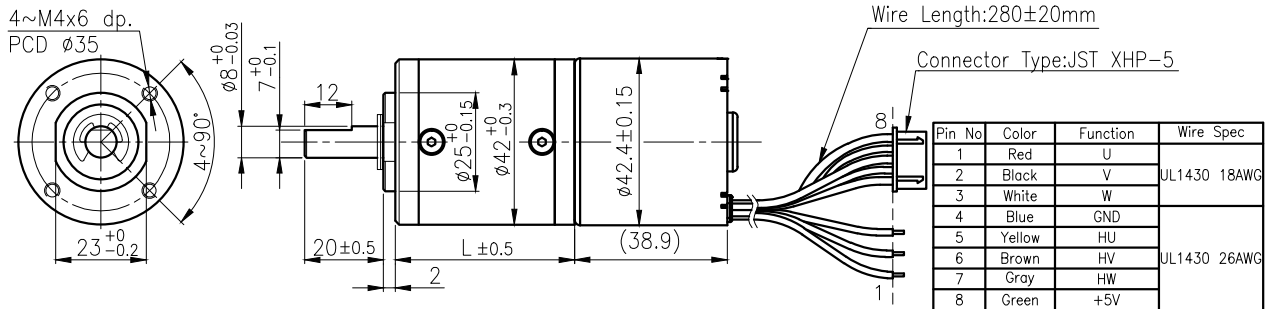
# IG-42GM

## 61 TYPE



Right Angle

### 外形尺寸/ Appearance Size



RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
24V 定格扭力 Rated torque (kgf-cm)	2.2	6.5	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
24V 定格轉速 Rated speed (rpm)	1590	460	380	310	135	120	95	80	62	42	32	19.5	16	14	11.8	9.6	7	4.1	3.4	2.8
軸心迴轉方向 Rotation direction	CW																			
長度 Length (L)	32.5	39.2	45.9				52.6				59.6									

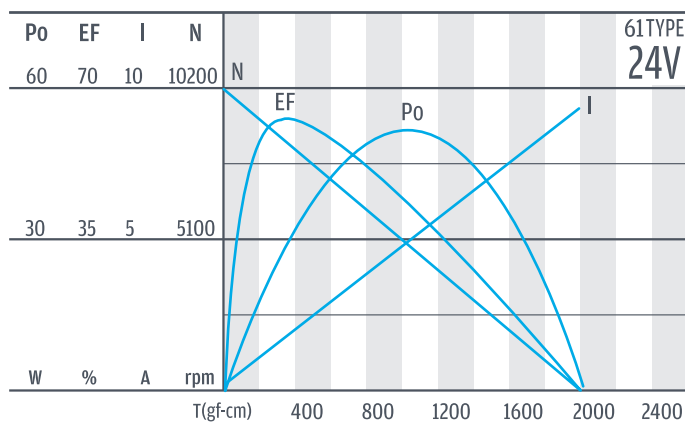
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
24	400	7930	≤19	11000	≤0.4	30	196

PG

### 馬達單體特性/ Motor Characteristics



Encoder

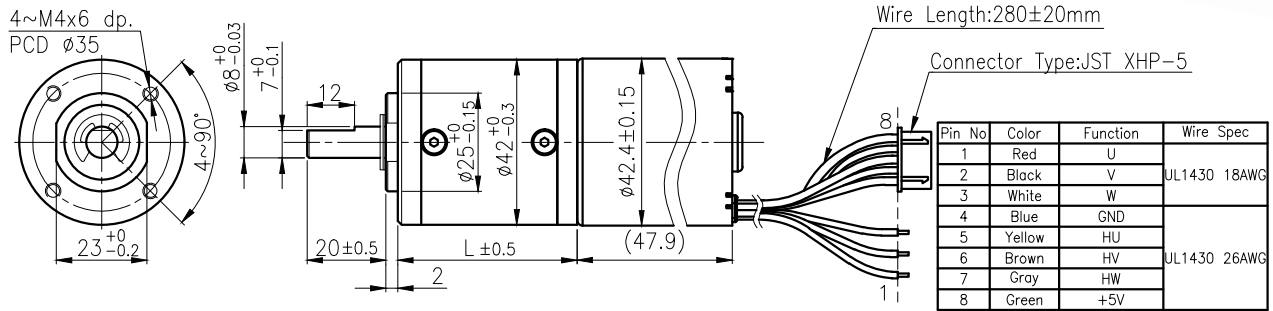
Driver

# IG-42GM

## 62 & 63 TYPE



### 外形尺寸/ Appearance Size



unit:mm

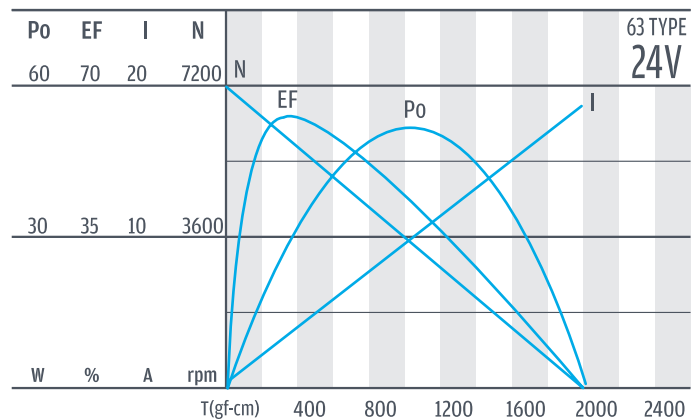
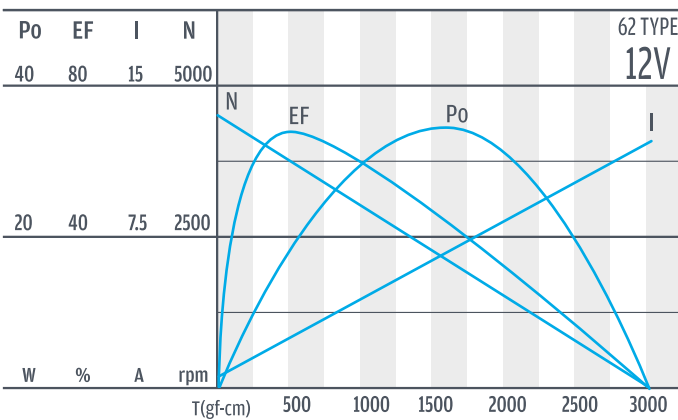
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
12V 定格扭力 Rated torque (kgf-cm)	1.5	4.7	5.8	8	14	17.5	18	20	20	25	25	30	30	30	30	30	30	30	30	30
12V 定格轉速 Rated speed (rpm)	900	255	205	150	73	55	45	35	25	18	14	8	6.5	5.5	5	4	2.5	1.7	1.4	1.2
24V 定格扭力 Rated torque (kgf-cm)	2.2	6.5	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
24V 定格轉速 Rated speed (rpm)	1270	370	300	235	110	90	72	60	45	30	23	13.5	11	9.5	8.1	6.6	4.8	4.1	3.4	2
軸心迴轉方向 Rotation direction	CW/CCW																			
長度 Length (L)	32.5		39.2		45.9				52.6				59.6							

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (kgf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	480	3600	≤ 2.2	4500	≤ 0.45	17	265
24	490	5600	≤ 1.83	7200	≤ 0.3	27	265

### 馬達單體特性/ Motor Characteristics



IG

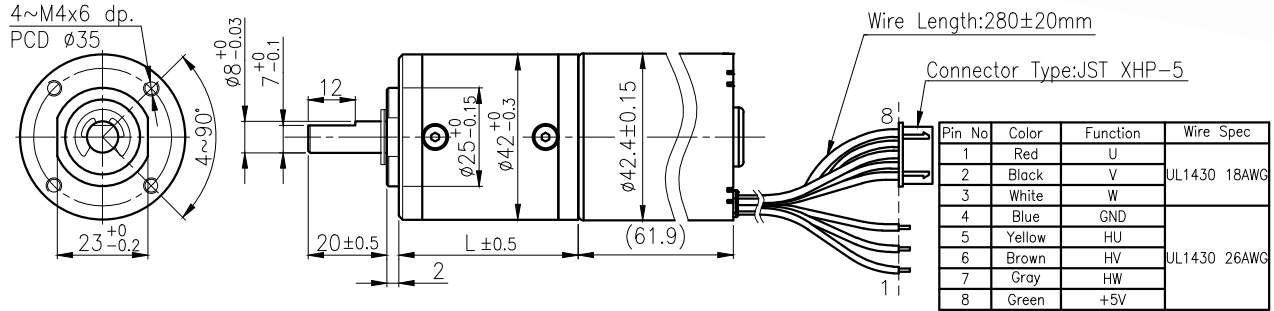
# IG-42GM

## 65 TYPE



Right Angle

### 外形尺寸/ Appearance Size



RA



unit:mm

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
24V 定格扭力 Rated torque (kgf-cm)	2.7	8	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
24V 定格轉速 Rated speed (rpm)	1125	325	270	200	95	75	55	45	35	24	17	10	8.4	7.3	6	5	3.5	2.1	1.7	1.4
軸心迴轉方向 Rotation direction	CW/CCW																			
長度 Length (L)	32.5	39.2	45.9				52.6				59.6									

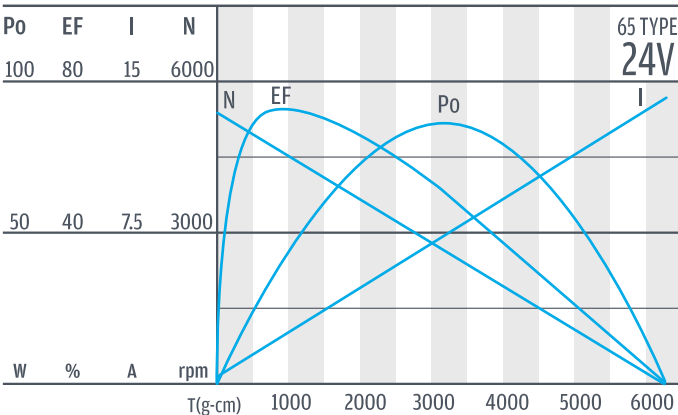
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (kgf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
24	870	4500	≤ 2.3	5400	≤ 0.4	40	365

PG

### 馬達單體特性/ Motor Characteristics



Encoder

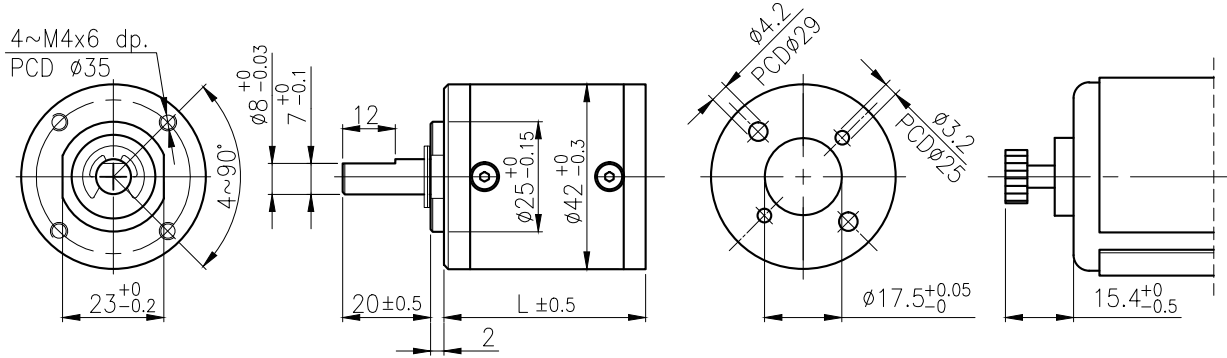
Driver



# IG-42C



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 5 kgf	≤ 3 kgf	≤ 15 kgf	≤ 0.08 mm	≤ 0.3 mm	≤ 3°
金屬 Metal	滾珠軸承 Ball bearings	≤ 8 kgf	≤ 3 kgf	≤ 15kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 3°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.6	12	20°	$\phi 3.98$	1/24, 1/144, 1/864
0.6	15	20°	$\phi 4.98$	1/720, 1/1062, 1/1470, 1/2500, 1/3000, 1/3600
0.6	18	20°	$\phi 4.98$	1/17, 1/61, 1/104, 1/212, 1/624
0.6	24	20°	$\phi 4.98$	1/14, 1/49, 1/84, 1/294, 1/504
0.6	20	20°	$\phi 4.98$	1/4

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
定格容許扭力 (kgf-cm max.) Rated tolerance torque	3	8	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	9	24	24	24	54	54	54	60	60	75	75	90	90	90	90	90	90	90	90	90
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%
長度 Length (L)	32.5	39.2	39.2	39.2	45.9	45.9	45.9	45.9	45.9	52.6	52.6	52.6	52.6	52.6	52.6	59.6	59.6	59.6	59.6	59.6
重量 (含油軸承) Weight (g) /Sleeve bearing	141	193	193	193	233	233	233	233	233	283	283	283	283	283	283	328	328	328	328	328
重量 (滾珠軸承) Weight (g) /Ball bearings	139	191	191	191	231	231	231	231	231	281	281	281	281	281	281	326	326	326	326	326

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

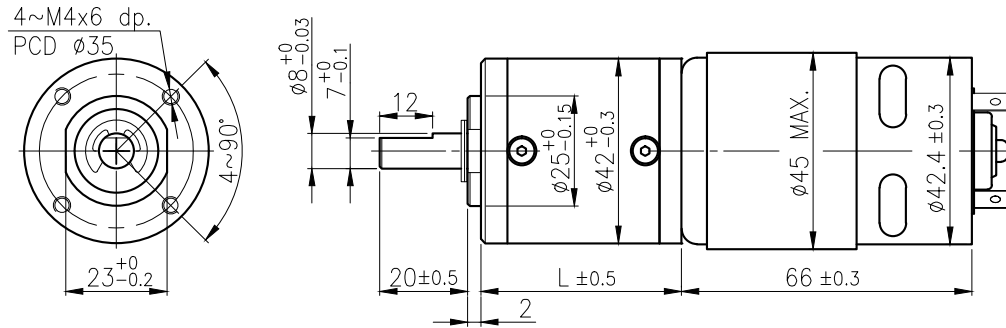
# IG-42CGM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
12V	定格扭力 Rated torque (kgf-cm)	2.2	6.5	8	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
	定格轉速 Rated speed (rpm)	1400	405	325	248	120	98	76	63	45	31	22	13.5	10.9	9.5	8	6.5	4.6	2.7	2.3	1.9
24V	定格扭力 Rated torque (kgf-cm)	1.8	5.4	6.6	8	16	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
	定格轉速 Rated speed (rpm)	1445	420	340	246	122	102	77.5	63	47	31	21.8	13.5	10.9	9.5	8	6.5	4.6	2.7	2.3	1.9
	軸心迴轉方向 Rotation direction	CCW																			
	長度 Length (L)	32.5		39.2			45.9					52.6					59.6				

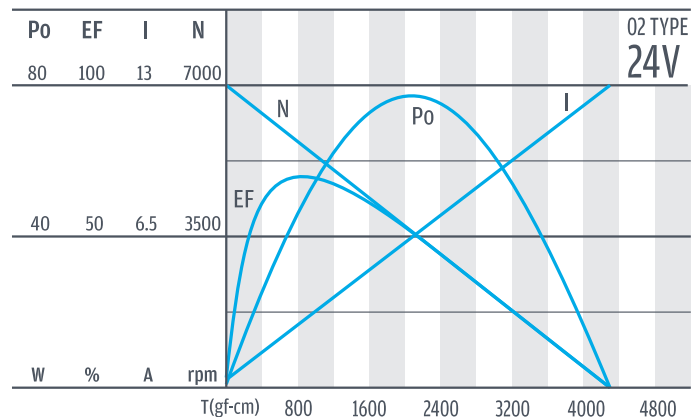
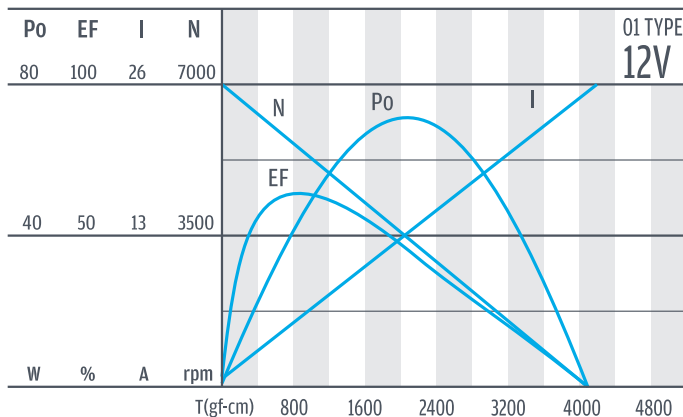
WG

PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	700	5700	≤5.5	7000	≤0.9	41.3	360
24	570	5900	≤2.1	7000	≤0.5	34.7	360

### 馬達單體特性/ Motor Characteristics



Encoder

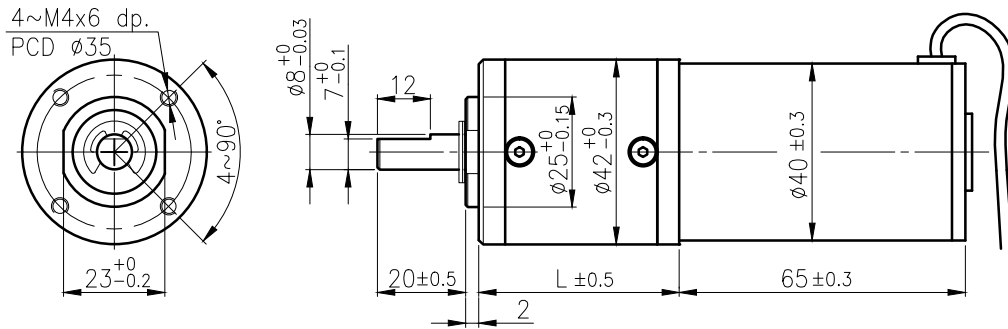
Driver

# IG-42CGM

## 03 & 04 TYPE



### 外形尺寸/ Appearance Size



unit:mm

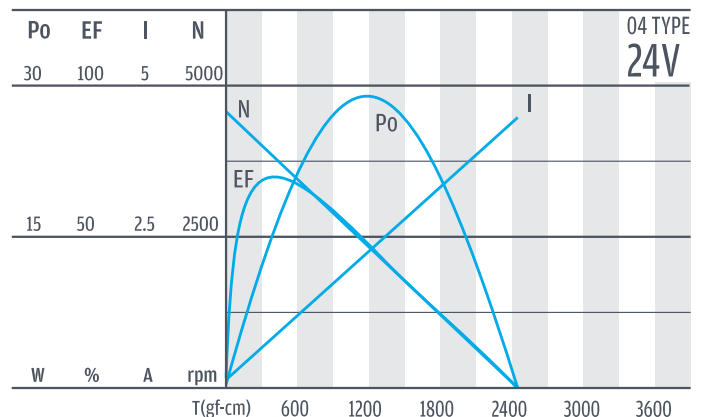
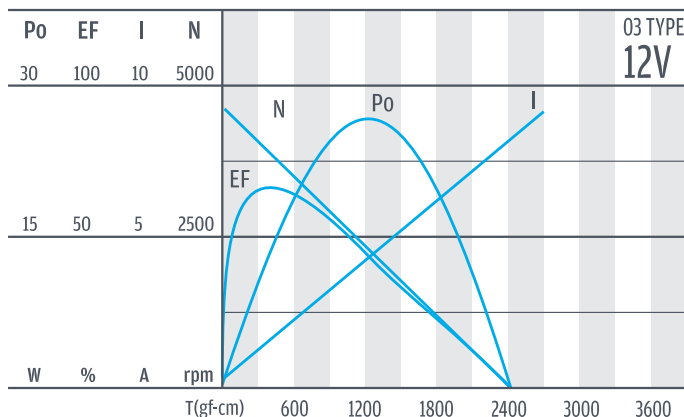
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
12V	定格扭力 Rated torque (kgf-cm)	1.3	4	5	7	12	15	18	20	20	25	25	30	30	30	30	30	30	30	30	30
	定格轉速 Rated speed (rpm)	930	265	210	150	76	61	45	37	27	18.5	14	8.3	6.9	5.9	4.9	4	2.8	1.7	1.4	1.2
24V	定格扭力 Rated torque (kgf-cm)	1	3	4	5.5	10	12	17	20	20	25	25	30	30	30	30	30	30	30	30	30
	定格轉速 Rated speed (rpm)	945	270	215	155	76	62	45	36	27	18.5	14	8.3	6.9	5.9	4.9	4	2.8	1.7	1.4	1.2
軸心迴轉方向 Rotation direction		CW																			
長度 Length (L)		32.5	39.2	45.9	52.6	59.6															

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	430	3750	≤2.0	4500	≤0.5	16.56	310
24	350	3800	≤0.82	4500	≤0.22	13.65	310

### 馬達單體特性/ Motor Characteristics



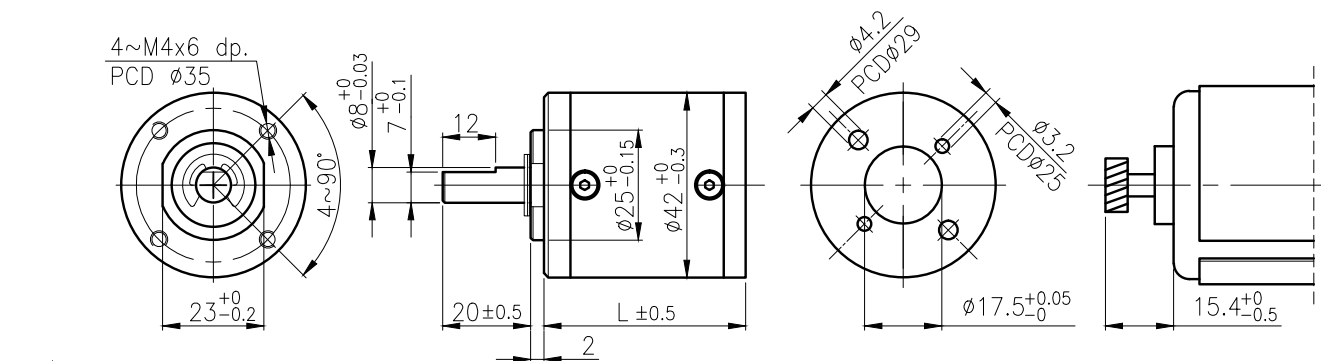
IG

# IG-42H



Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

R3

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 5$ kgf	$\leq 3$ kgf	$\leq 15$ kgf	$\leq 0.08$ mm	$\leq 0.3$ mm	$\leq 3'$
金屬 Metal	滾珠軸承 Ball bearings	$\leq 8$ kgf	$\leq 3$ kgf	$\leq 15$ kgf	$\leq 0.05$ mm	$\leq 0.3$ mm	$\leq 3'$

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	螺旋角 Helix angle	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.6	9	18° (左, left)	20°	$\phi 3.15$	1/25
0.6	12	18° (左, left)	20°	$\phi 3.98$	1/20, 1/100, 1/120, 1/500, 1/600, 1/720 1/1062, 1/2500, 1/3000, 1/3600
0.6	15	18° (左, left)	20°	$\phi 4.98$	1/17, 1/84, 1/294, 1/1470
0.6	18	18° (左, left)	20°	$\phi 4.98$	1/15, 1/51, 1/64, 1/180, 1/222

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/15	1/17	1/20	1/25	1/51	1/64	1/84	1/100	1/120	1/180	1/222	1/294	1/500	1/600	1/720	1/1062	1/1470	1/2500	1/3000	1/3600
定格容許扭力 (kgf-cm max.) Rated tolerance torque	8	8	8	8	18	18	18	20	20	25	25	25	30	30	30	30	30	30	30	30
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	24	24	24	24	54	54	54	60	60	75	75	75	90	90	90	90	90	90	90	90
效率 Efficiency	70%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%
長度 Length (L)	39.2	39.2	39.2	39.2	45.9	45.9	45.9	45.9	45.9	52.6	52.6	52.6	52.6	52.6	52.6	59.6	59.6	59.6	59.6	59.6
重量 (含油軸承) Weight (g) / Sleeve bearing	193	193	193	193	233	233	233	233	233	283	283	283	283	283	283	328	328	328	328	328
重量 (滾珠軸承) Weight (g) / Ball bearings	191	191	191	191	231	231	231	231	231	281	281	281	281	281	281	326	326	326	326	326

Encoder

Driver

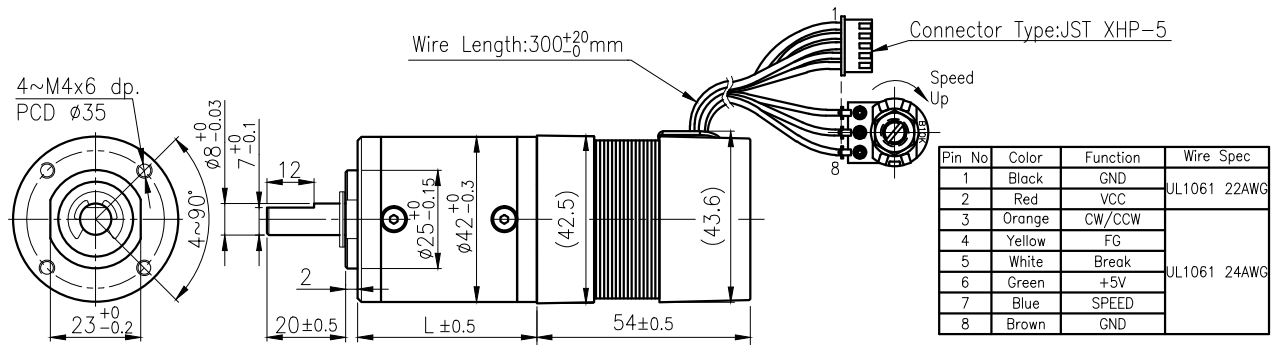
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-42HGM

## 41 & 42 TYPE



### 外形尺寸 / Appearance Size



unit:mm

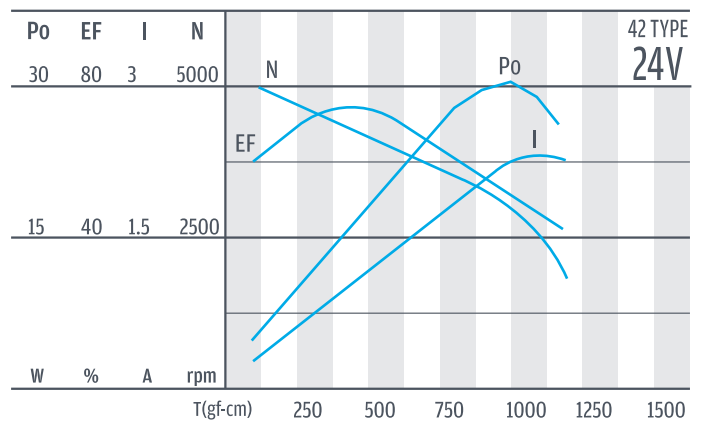
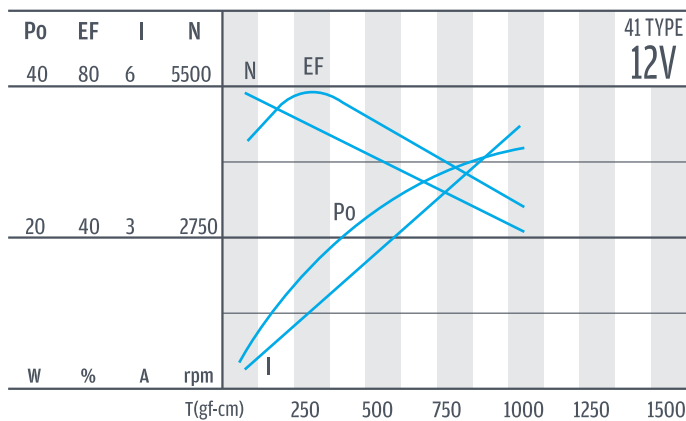
### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

減速比 Reduction ratio	1/15	1/17	1/20	1/25	1/51	1/64	1/84	1/100	1/120	1/180	1/222	1/294	1/500	1/600	1/720	1/1062	1/1470	1/2500	1/3000	1/3600	
12V 定格扭力 Rated torque (kgf-cm)	2.6	3.0	3.5	4.5	7.5	9.5	12.5	15	18	22.5	27.8	30	30	30	30	30	30	30	30	30	
12V 定格轉速 Rated speed (rpm)	270	230	200	155	80	65	50	40	33	22	18	14.5	9.1	7.8	6.6	4.5	3.3	2.0	1.6	1.4	
24V 定格扭力 Rated torque (kgf-cm)	3.9	4.5	5.2	6.4	11.5	14.5	18.6	22	26.6	28	30	30	30	30	30	30	30	30	30	30	
24V 定格轉速 Rated speed (rpm)	280	245	210	170	80	65	50	42	35	24	20	15.5	9.6	8.0	6.8	4.6	3.4	2.0	1.7	1.4	
長度 Length (L)	39.2			45.9			52.6			59.6											

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4000	≤ 1.6	5000	≤ 0.3	10.5	250
24	370	4200	≤ 1.1	5000	≤ 0.25	16.2	250

### 馬達單體特性 / Motor Characteristics



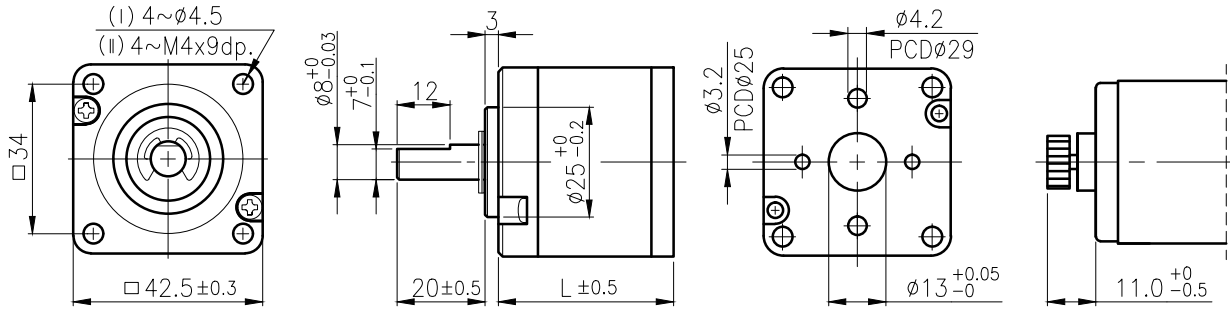
IG

# IG-43



Right Angle

## 外形尺寸 & 馬達齒鉤尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
粉末金屬 Powder Metal	滾珠軸承 Ball bearings	$\leq 8 \text{ kgf}$	$\leq 3 \text{ kgf}$	$\leq 15 \text{ kgf}$	$\leq 0.05 \text{ mm}$	$\leq 0.3 \text{ mm}$	$\leq 3^\circ$

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.6	12	$20^\circ$	$\phi 3.16, \phi 3.98$	1/24, 1/84, 1/104, 1/144, 1/294, 1/504, 1/624, 1/720, 1/864
0.6	18	$20^\circ$	$\phi 3.16, \phi 3.98$	1/17, 1/61, 1/212
0.6	24	$20^\circ$	$\phi 3.16, \phi 3.98$	1/14, 1/49
0.6	20	$20^\circ$	$\phi 3.16, \phi 3.98$	1/4

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864
定格容許扭力 (kgf-cm max.) Rated tolerance torque	4	8	8	8	15	15	15	20	20	25	25	30	30	30	30
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	12	24	24	24	45	45	45	60	60	75	75	90	90	90	90
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%
長度 (L) Length (L)	26.15	32.95	32.95	32.95	39.75	39.75	39.75	39.75	39.75	46.45	46.45	46.45	46.45	46.45	46.45
重量 (滾珠軸承) Weight (g) / Ball bearings	190	250	250	250	305	305	305	305	305	360	360	360	360	360	360

PG

Encoder

Driver

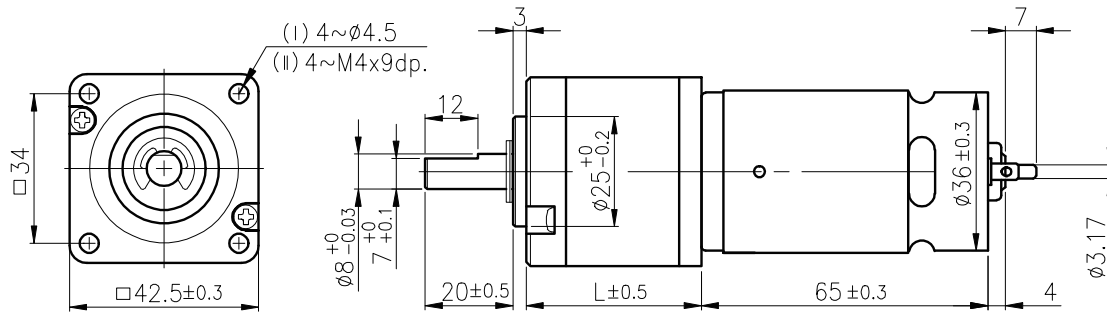
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-43GM

## 01 & 02 TYPE



外形尺寸/ Appearance Size



unit:mm

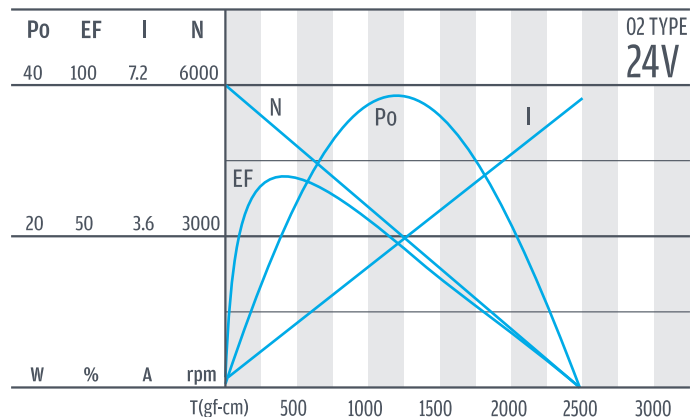
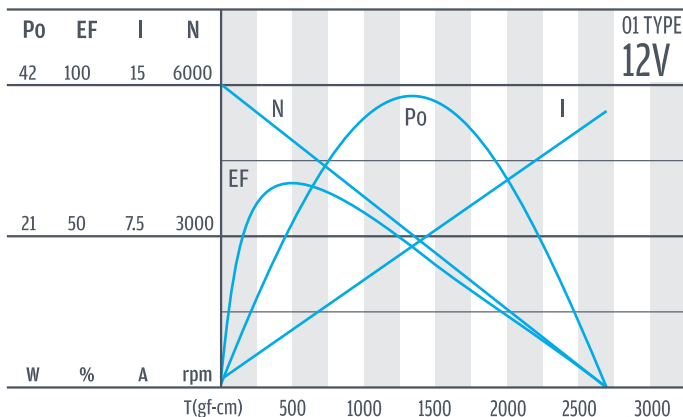
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864		
12V	定格扭力 Rated torque (kgf-cm)		1	3	3.6	5.2	9.2	11	15	19	20	25	25	30	30	30	30		
	定格轉速 Rated speed (rpm)		1250	363	293	212	103	83.5	60.5	49	38	25.4	18.9	11.2	8.8	8	6.5		
24V	定格扭力 Rated torque (kgf-cm)		0.9	2.6	3.1	4.5	8	10	14	17	20	25	25	30	30	30	30		
	定格轉速 Rated speed (rpm)		1290	375	302	218	107	86.5	62.5	50.5	39	26.2	18.8	11.2	8.8	8	6.5		
軸心迴轉方向 Rotation direction			CCW																
長度 Length (L)			26.15	32.95		39.75			46.45										

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	320	5090	≤2.1	6000	≤0.35	17.09	266
24	280	5250	≤0.9	6000	≤0.17	15.56	266

馬達單體特性/ Motor Characteristics



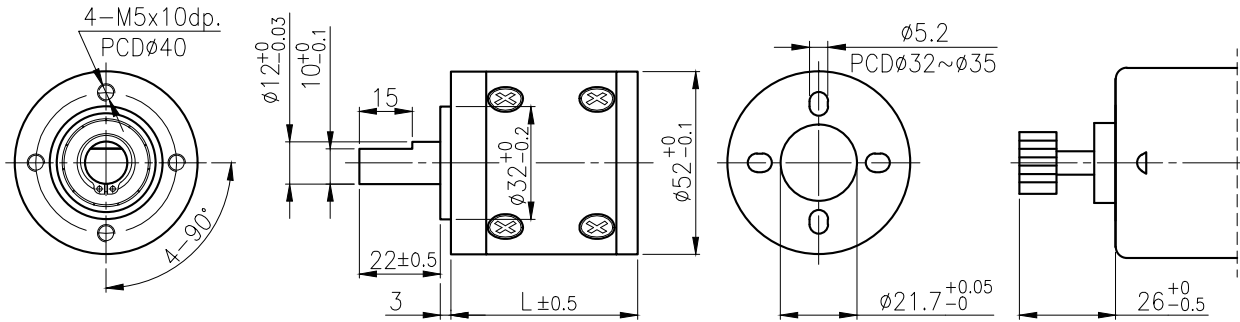
IG

# IG-52



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq$ 20 kgf	$\leq$ 10 kgf	$\leq$ 30 kgf	$\leq$ 0.04 mm	$\leq$ 0.3 mm	$\leq$ 3°

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	8	20°	$\phi$ 3.98	1/21, 1/26, 1/126, 1/756, 1/936
1.0	12	20°	$\phi$ 5.98, $\phi$ 6.34	1/4, 1/15, 1/19, 1/53, 1/66, 1/81, 1/113, 1/230, 1/285, 1/353, 1/488, 1/546, 1/676
1.0	16	20°	$\phi$ 5.98, $\phi$ 6.34	1/3, 1/12, 1/43, 1/150
1.0	14	20°	$\phi$ 5.98, $\phi$ 6.34	1/100

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/21	1/26	1/43	1/53	1/66	1/81	1/100	1/113	1/126	1/150	1/230	1/285	1/353	1/488	1/546	1/676	1/756	1/936
定格容許扭力 (kgf-cm max.) Rated tolerance torque	10	10	30	30	50	50	50	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	30	30	90	90	150	150	150	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
效率 Efficiency	80%	80%	70%	70%	70%	70%	70%	60%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%	50%	50%
長度 Length (L)	53	53	68.5	68.5	68.5	68.5	68.5	84	84	84	84	84	84	84	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5
重量 (滾珠軸承) Weight (g) / Ball bearings	475	475	660	660	660	660	660	850	850	850	850	850	850	850	1020	1020	1020	1020	1020	1020	1020	1020	1020

Encoder

Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

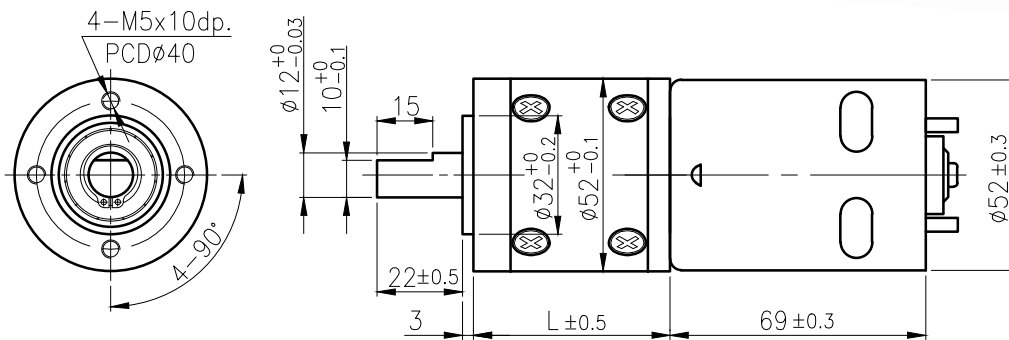


# IG-52GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

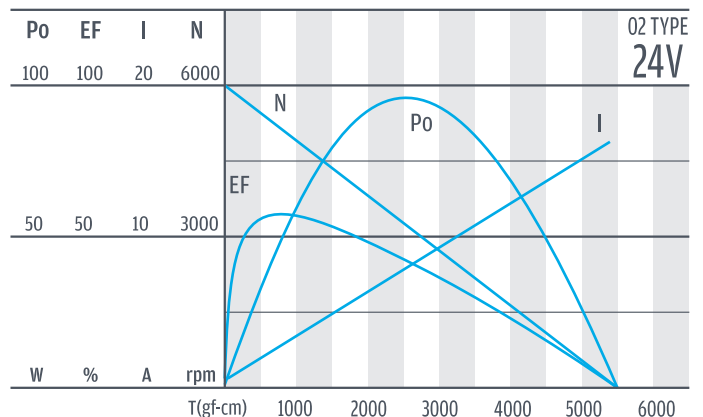
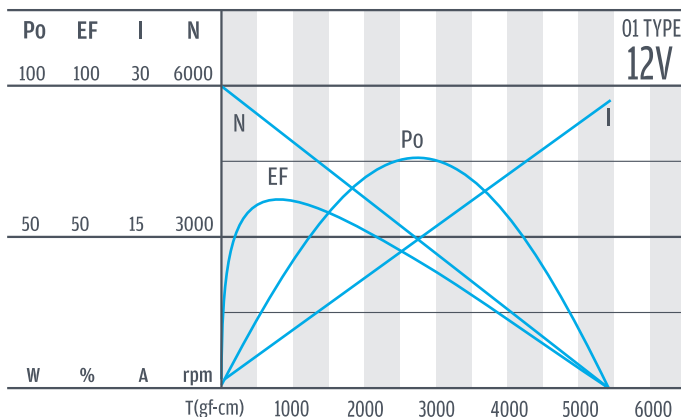
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/3	1/4	1/12	1/15	1/19	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676	
12V	減速比 Reduction ratio																			
	定格扭力 Rated torque (kgf-cm)	2.1	2.6	6.5	8.1	10	20.1	24.4	30.2	37.4	46.1	51.8	57.5	88.2	100	100	100	100	100	
24V	定格轉速 Rated speed (rpm)	1445	1167	412	333	269	115	95	76	62	50	44	33	21	18	15	11.3	10	8.2	
	定格扭力 Rated torque (kgf-cm)	2.2	2.8	6.9	8.6	10.7	21.4	25.9	32.1	39.7	49	55	61.1	93.7	100	100	100	100	100	
	定格轉速 Rated speed (rpm)	1423	1149	406	328	265	113	93	75	61	49	44	33	21	17.9	14.7	10.9	9.8	8	
軸心迴轉方向 Rotation direction		CW																		
長度 Length (L)		53			68.5			84			99.5									

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current(A)	定格出力 Rated output (W)	重量 Weight (g)
12	767	5058	≤5.8	6000	≤1.55	39.8	480
24	815	4983	≤3.6	6000	≤0.6	41.7	480

### 馬達單體特性/ Motor Characteristics



IG

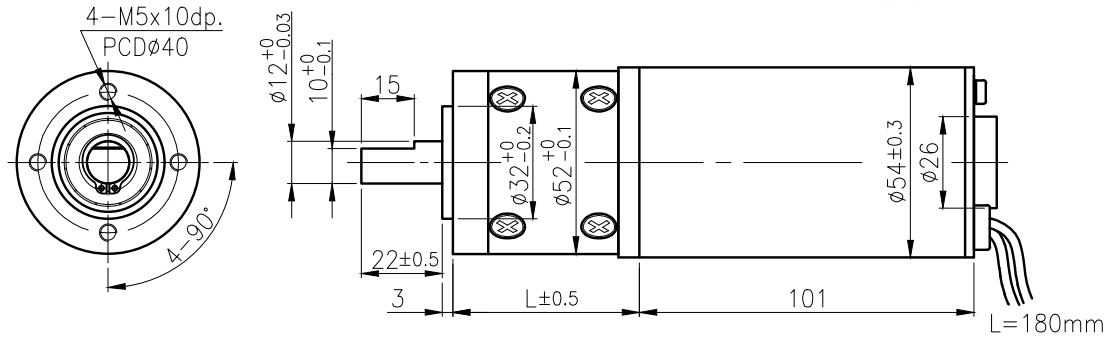
# IG-52GM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/26	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676	1/936
12V	定格扭力 Rated torque (kgf-cm)	2.5	3.1	7.7	9.5	11.8	16	23	28	35	44	54	60	67	100	100	100	100	100	100	100
	定格轉速 Rated speed (rpm)	1030	835	295	238	192	139	84	68	55	44	36	32	24	15.5	12.8	10.4	7.6	6.7	5.6	4
24V	定格扭力 Rated torque (kgf-cm)	3.6	4.5	11	13.5	17	23	33	41	51	62	78	88	97	100	100	100	100	100	100	100
	定格轉速 Rated speed (rpm)	1000	815	285	230	185	136	82	67	54	44	35	31	23.5	15.6	12.9	10.5	7.7	6.8	5.7	4.1
	軸心迴轉方向 Rotation direction	CW																			
	長度 Length (L)	53			68.5			84			99.5										

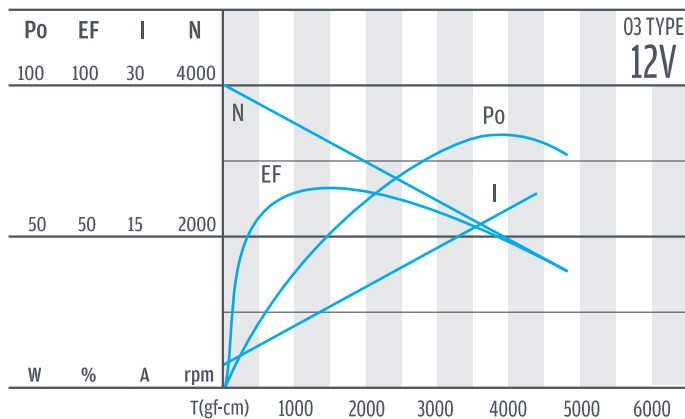
WG

PG

### 馬達單體型式/ Motor Data

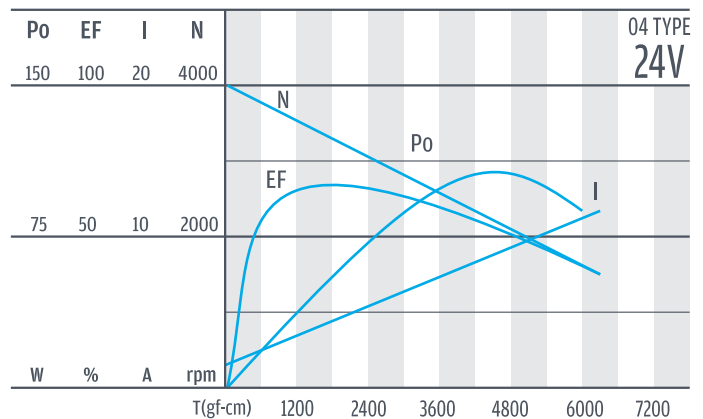
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	900	3620	≤4.1	4000	≤1.2	33.5	920
24	1300	3550	≤2.85	4000	≤0.7	48.6	920

### 馬達單體特性/ Motor Characteristics



Encoder

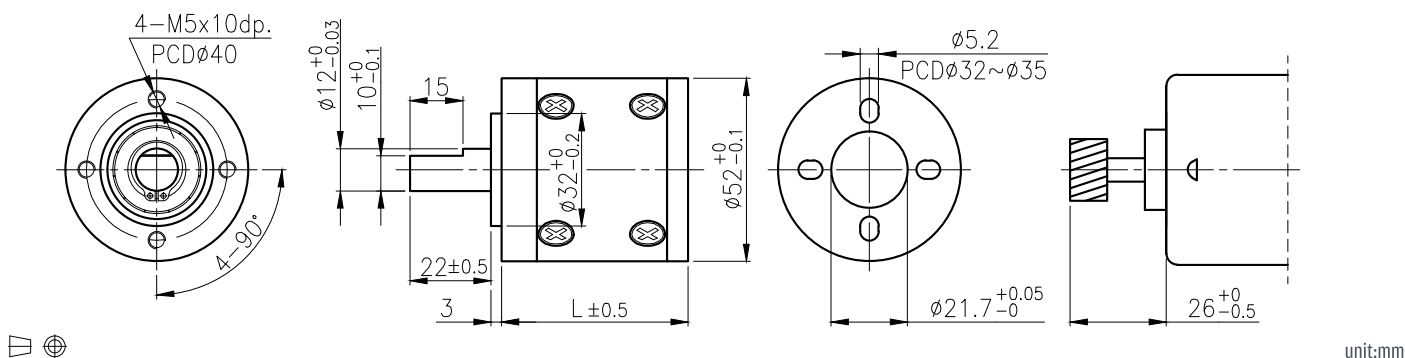
Driver



# IG-52H



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤ 20 kgf	≤ 10 kgf	≤ 30 kgf	≤ 0.04 mm	≤ 0.3 mm	≤ 3°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	螺旋角 Helix angle	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.8	16	18° (左, left)	20°	○ $\phi$ 6X4.5	1/4, 1/13, 1/46, 1/57, 1/98, 1/161
0.8	13	18° (左, left)	20°	○ $\phi$ 6X4.5	1/5, 1/15, 1/19, 1/67, 1/82, 1/114, 1/207, 1/288, 1/357, 1/494, 1/552, 1/684

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/5	1/13	1/15	1/19	1/46	1/57	1/67	1/82	1/98	1/114	1/161	1/207	1/288	1/357	1/494	1/552	1/684				
定格容許扭力 (kgf-cm max.) Rated tolerance torque	6	6	20	20	30	50	50	60	60	80	80	100	100	100	100	100	100	100				
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	18	18	60	60	90	150	150	180	180	240	240	300	300	300	300	300	300	300				
效率 Efficiency	80%	80%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%				
長度 Length (L)	53	53	68.5	68.5	68.5	84	84	84	84	84	84	99.5	99.5	99.5	99.5	99.5	99.5	99.5				
重量 (滾珠軸承) Weight (g) / Ball bearings	445	445	630	630	630	820	820	820	820	820	820	990	990	990	990	990	990	990				

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

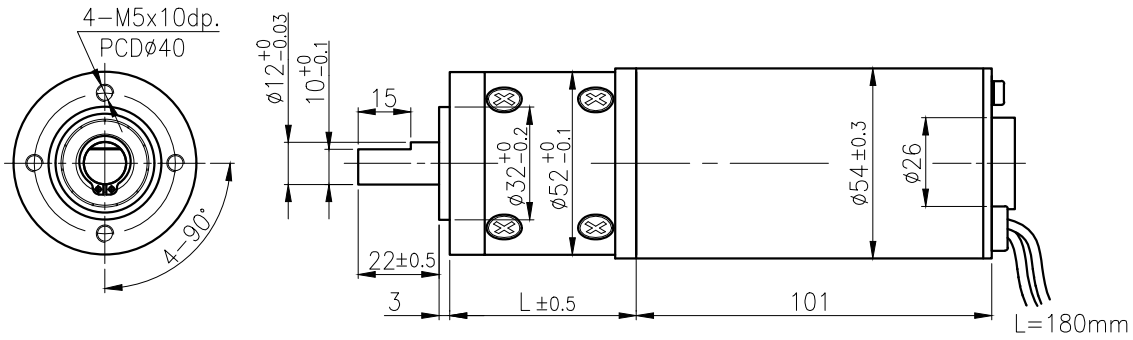
# IG-52HGM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/5	1/13	1/15	1/19	1/46	1/57	1/67	1/82	1/98	1/114	1/161	1/207	1/288	1/357	1/494	1/552	1/684	
12V	定格扭力 Rated torque (kgf-cm)	2.7	3.6	8	9.5	11	24	30	35	44	52	61	72	93	100	100	100	100	100	
	定格轉速 Rated speed (rpm)	960	724	275	235	190	78	63	54	44	37	31.7	22.5	17.4	12.7	10.5	7.6	6.7	5.5	
24V	定格扭力 Rated torque (kgf-cm)	3.9	5.2	11	13	17	35	44	51	64	76	88	100	100	100	100	100	100	100	
	定格轉速 Rated speed (rpm)	940	710	270	230	186	77	62	53	43	36	31.1	22	17.3	12.7	10.5	7.6	6.7	5.5	
	軸心迴轉方向 Rotation direction	CW																		
	長度 Length (L)	53.0			68.5			84.0			99.5									

WG

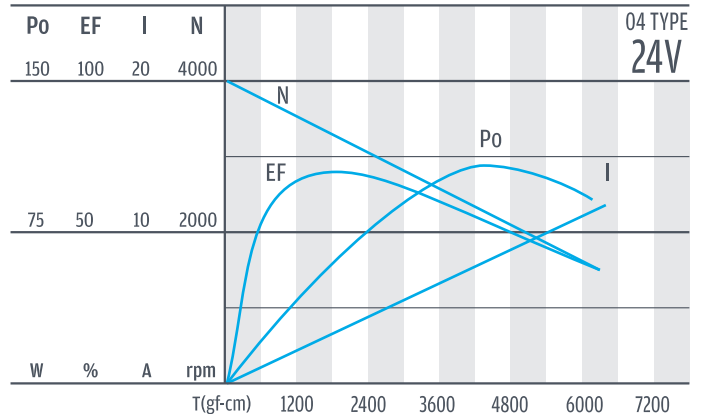
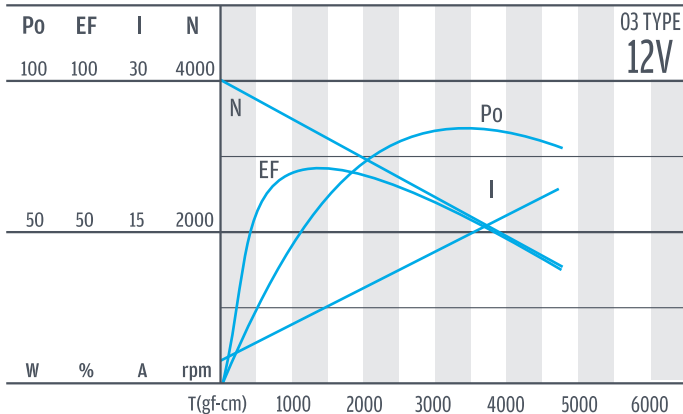
PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	900	3620	≤4.1	4000	≤1.2	33.5	920
24	1300	3550	≤2.85	4000	≤0.7	48.6	920

Encoder

### 馬達單體特性/ Motor Characteristics

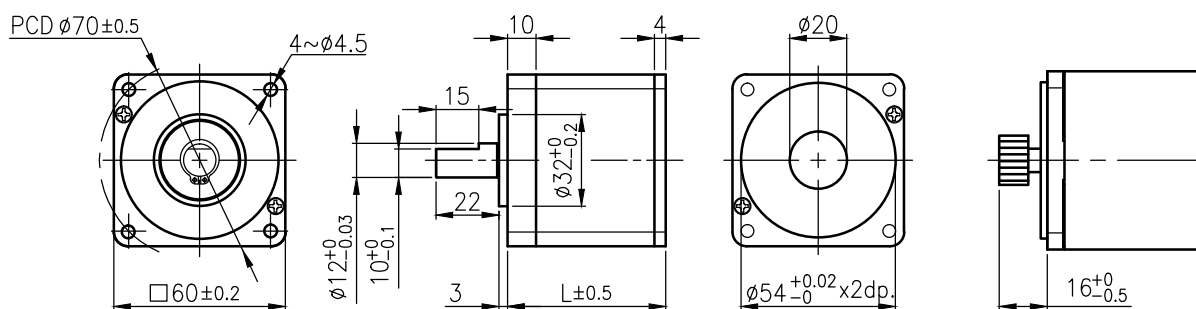


Driver

# IG-60W



外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq 20$ kgf	$\leq 10$ kgf	$\leq 30$ kgf	$\leq 0.08$ mm	$\leq 0.4$ mm	$\leq 3^\circ$

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	12	$20^\circ$	$\phi 6 \times 4.5$	1/4, 1/15, 1/19, 1/53, 1/66, 1/81, 1/113, 1/230 1/285, 1/353, 1/488, 1/546, 1/676
1.0	14	$20^\circ$	$\phi 8 \times 6$	1/100
1.0	16	$20^\circ$	$\phi 8 \times 6$	1/3, 1/12, 1/43, 1/150

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676
定格容許扭力 (kgf-cm max.) Rated tolerance torque	15	15	50	50	50	100	100	100	100	100	100	100	100	100	100	100	100	100
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	45	45	150	150	150	300	300	300	300	300	300	300	300	300	300	300	300	300
效率 Efficiency	80%	80%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%
長度 Length (L)	43.3	43.3	58.8	58.8	58.8	74.3	74.3	74.3	74.3	74.3	74.3	89.8	89.8	89.8	89.8	89.8	89.8	89.8
重量 (滾珠軸承) Weight (g) / Ball bearings	510	510	730	730	730	980	980	980	980	980	980	1210	1210	1210	1210	1210	1210	1210

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

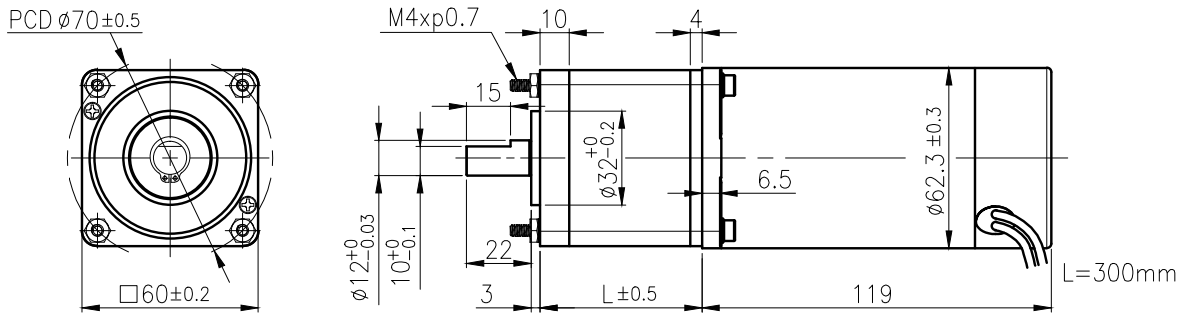
# IG-60WGM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676
12V	定格扭力 Rated torque (kgf-cm)		1.9	2.4	6	7.4	9	18	22	27	34	42	47	52	80	99	100	100	100	100
	定格轉速 Rated speed (rpm)		1350	1090	385	310	250	110	89	72	58	47	42	31.5	20.5	16.5	13.6	9.8	8.9	7.2
24V	定格扭力 Rated torque (kgf-cm)		2.7	3.4	8.5	10.5	13	25	31	39	48	60	67	75	100	100	100	100	100	100
	定格轉速 Rated speed (rpm)		1380	1100	390	310	255	110	90	73	59	48	42	32	21	17.1	13.8	10	9	7.3
軸心迴轉方向 Rotation direction			CW																	
長度 Length (L)			43.3			58.8			74.3			89.8								

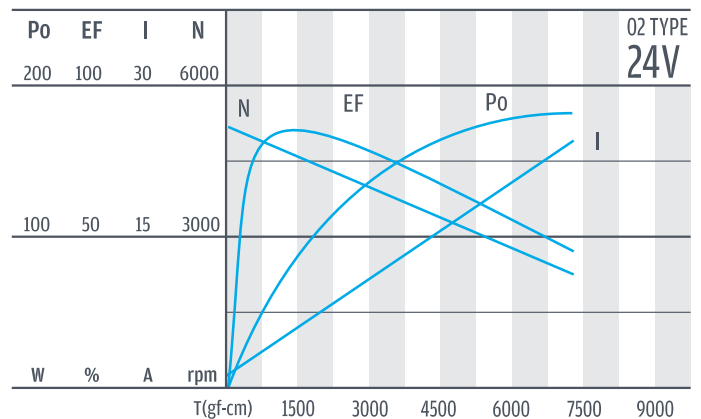
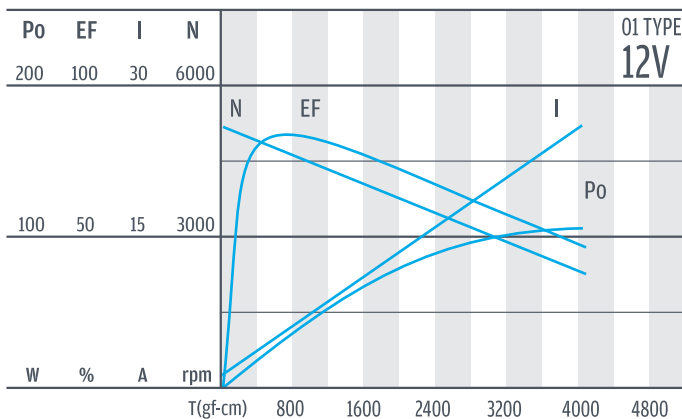
WG

PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	700	4760	≤3.3	5100	≤1.5	34.2	1150
24	1000	4830	≤2.4	5100	≤0.8	49.6	1150

### 馬達單體特性/ Motor Characteristics



Encoder

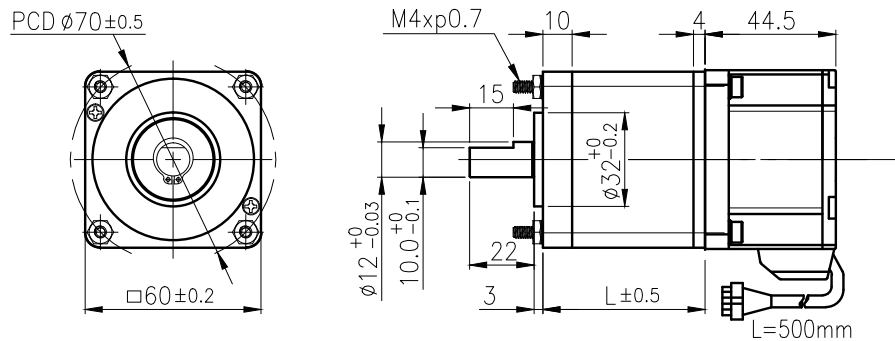
Driver

# IG-60WGM

## 41 TYPE



### 外形尺寸/ Appearance Size



unit:mm

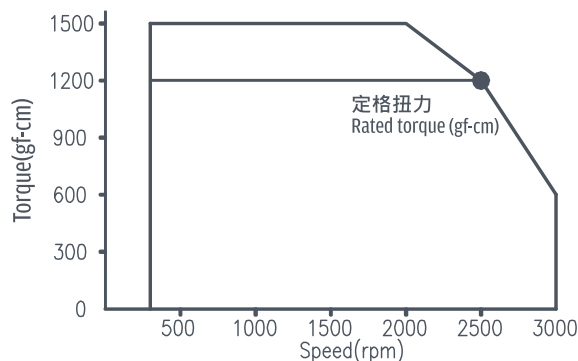
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676		
24V 定格扭力 Rated torque (kgf-cm)	3.3	4.1	10	12.6	15.8	30.8	38	47.5	58	72	81	90	100	100	100	100	100	100		
24V 定格轉速 Rated speed (rpm)	714	576	204	164	133	58	47	38	30.7	25	22.1	16.6	10.8	8.7	7.1	5.1	4.5	3.6		
長度 Length (L)	43.3		58.8			74.3						89.8								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	24	定格扭力 Rated torque (gf-cm)	1200	定格轉速 Rated speed (rpm)	2500	定格電流 Rated current (A)	$\leq 1.8$	無負荷轉速 No load speed (rpm)	3000	無負荷電流 No load current (A)	$\leq 0.4$	定格出力 Rated output (W)	30.81	重量 Weight (g)	500
啟動扭力 Start torque (gf-cm)	1500	絕緣抗耐 Insulation voltage	60HZ AC500V	絕緣阻抗 Insulation resistance	100M $\Omega$ DC500V	絕緣等級 Insulation class	A class (105°C)	使用相對溼度 Operating relative humidity	20%-85%RH	使用溫度範圍 Operating temperature range	0~+50°C				

### 馬達單體特性/ Motor Characteristics

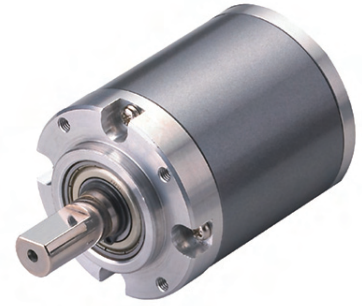


### 搭配之驅動器型式/ Connected With Motor Driver

型號 Type	DBMC30-3
輸入電壓 Input voltage	DC 24V $\pm 10\%$
速度控制範圍 Speed control range	300~3000 rpm
速度設定方式 Speed control way	1. 內部速度設定 Internal control 2. 外部速度設定 External speed control 3. 外部直流電壓控制 (DC 0~5V) External voltage control (DC 0~5V)

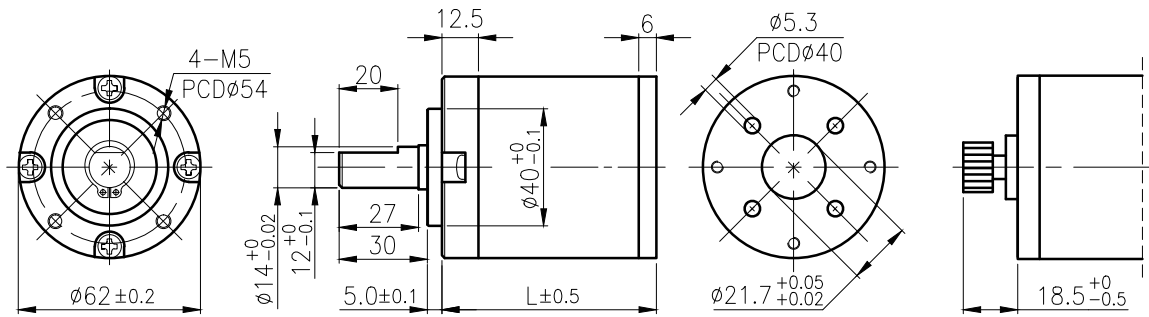
IG

# IG-62



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq 25$ kgf	$\leq 10$ kgf	$\leq 50$ kgf	$\leq 0.08$ mm	$\leq 0.4$ mm	$\leq 3^\circ$

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	12	$20^\circ$	$\phi 6 \times 4.5$	1/4, 1/15, 1/19, 1/53, 1/66, 1/81, 1/113, 1/230 1/285, 1/353, 1/488, 1/546, 1/676
1.0	14	$20^\circ$	$\phi 8 \times 6$	1/100
1.0	16	$20^\circ$	$\phi 8 \times 6$	1/3, 1/12, 1/43, 1/150

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676
定格容許扭力 (kgf-cm max.) Rated tolerance torque	15	15	50	50	50	100	100	100	100	100	100	100	100	100	100	100	100	100
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	45	45	150	150	150	300	300	300	300	300	300	300	300	300	300	300	300	300
效率 Efficiency	80%	80%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%
長度 (L) Length (L)	43.6	43.6	59.1	59.1	59.1	74.6	74.6	74.6	74.6	74.6	74.6	90.1	90.1	90.1	90.1	90.1	90.1	90.1
重量 (滾珠軸承) Weight (g) / Ball bearings	670	670	940	940	940	1220	1220	1220	1220	1220	1220	1500	1500	1500	1500	1500	1500	1500

PG

Encoder

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

Driver

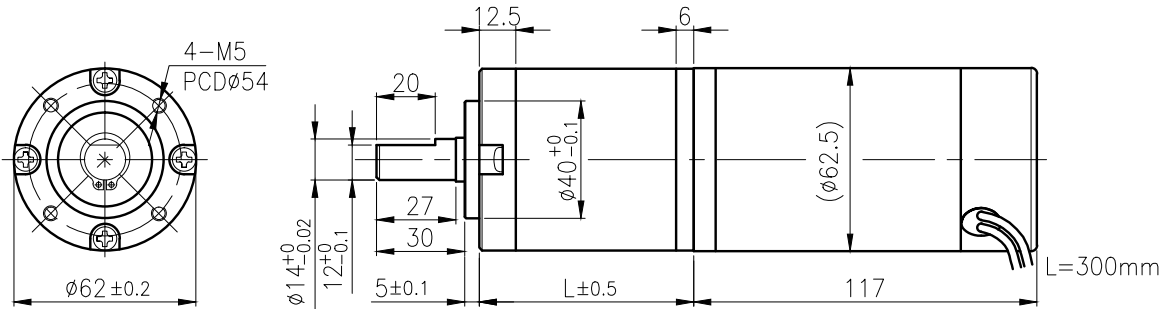


# IG-62GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

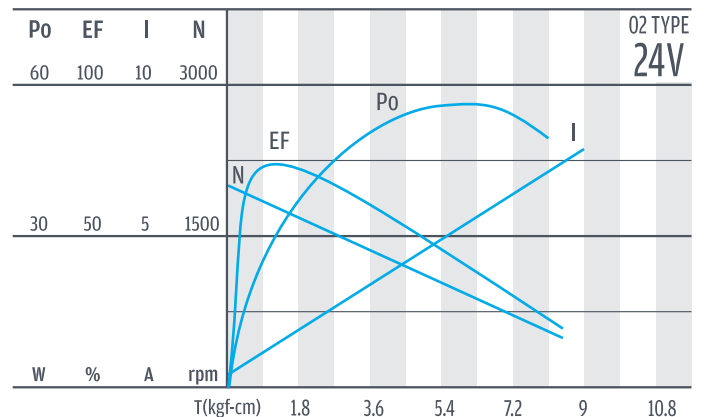
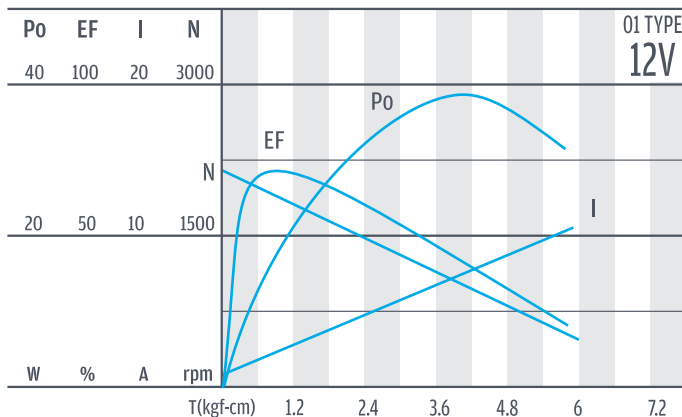
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/3	1/4	1/12	1/15	1/19	1/43	1/53	1/66	1/81	1/100	1/113	1/150	1/230	1/285	1/353	1/488	1/546	1/676
12V	定格扭力 Rated torque (kgf-cm)		2.5	3	7.5	9.4	11.8	23	28	35	43	54	61	67	100	100	100	100	100	100
	定格轉速 Rated speed (rpm)		480	390	135	110	90	39.5	32	25.7	21	17	15	11	7.3	6	5	3.7	3.3	2.7
24V	定格扭力 Rated torque (kgf-cm)		4.2	5.1	12.5	15.7	19.7	38	47	59	72	90	100	100	100	100	100	100	100	100
	定格轉速 Rated speed (rpm)		500	400	140	115	93	40.5	33	26.5	21.5	17.5	15.4	11.7	7.8	6.3	5.3	3.8	3.4	2.8
軸心迴轉方向 Rotation direction			CW																	
長度 Length (L)			43.6			59.1			74.6			90.1								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	900	1700	≤1.8	2000	≤0.45	15.7	1650
24	1500	1750	≤1.5	2000	≤0.3	26.9	1650

### 馬達單體特性/ Motor Characteristics

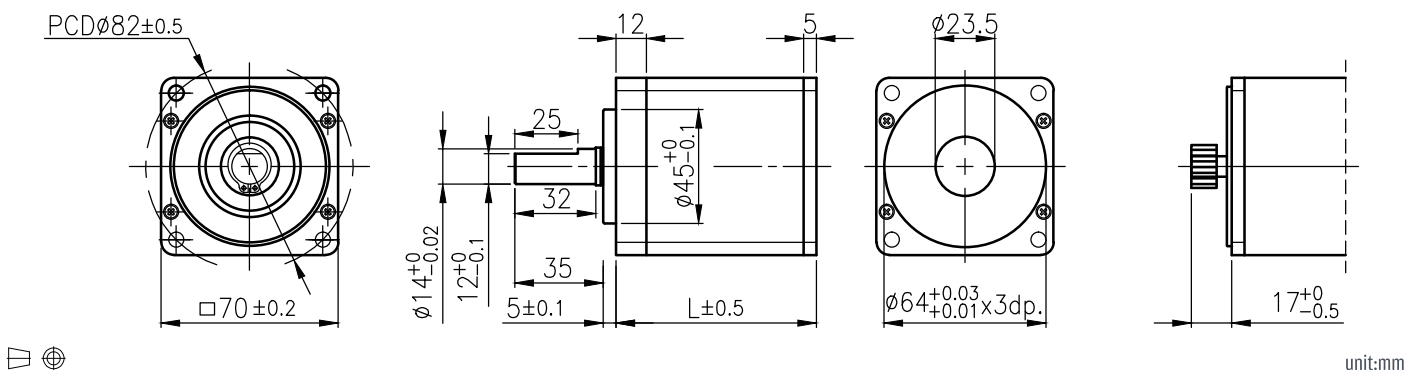


IG

# IG-70W



## 外形尺寸 & 馬達齒鉤尺寸 / Appearance Size & Pinion Assembly Dimension



## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤ 25 kgf	≤ 10 kgf	≤ 50 kgf	≤ 0.08 mm	≤ 0.4 mm	≤ 3°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	13	20°	○ ø6X4.5	1/102, 1/126, 1/242, 1/300, 1/363, 1/493, 1/611
1.0	14	20°	○ ø8X6	1/16, 1/20, 1/60, 1/75, 1/91, 1/414, 1/543
1.0	18	20°	○ ø8X6	1/13, 1/50, 1/189
1.0	20	20°	○ ø8X6	1/4

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/13	1/16	1/20	1/50	1/60	1/75	1/91	1/102	1/126	1/189	1/242	1/300	1/363	1/414	1/493	1/543	1/611
定格容許扭力 (kgf-cm max.) Rated tolerance torque	15	70	70	70	125	125	125	125	125	125	125	125	125	125	125	125	125	125
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	45	210	210	210	375	375	375	375	375	375	375	375	375	375	375	375	375	375
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%	50%
長度 Length (L)	47.3	63.8	63.8	63.8	80.3	80.3	80.3	80.3	80.3	80.3	96.8	96.8	96.8	96.8	96.8	96.8	96.8	96.8
重量 (滾珠軸承) Weight (g) /Ball bearings	780	1110	1110	1110	1440	1440	1440	1440	1440	1440	1780	1780	1780	1780	1780	1780	1780	1780

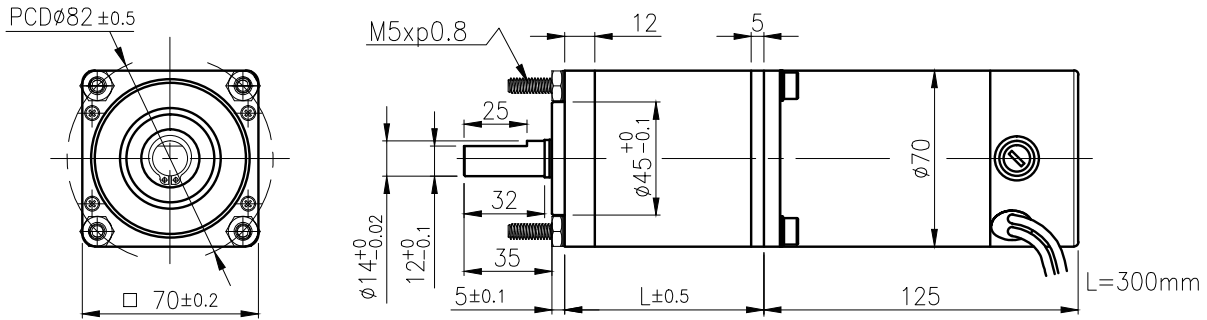
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-70WGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

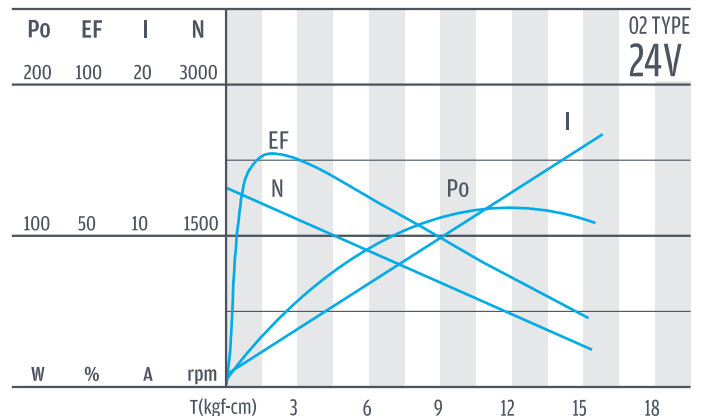
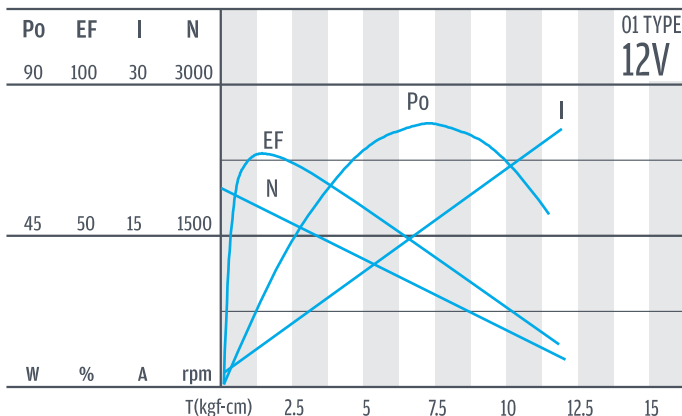
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/4	1/13	1/16	1/20	1/50	1/60	1/75	1/91	1/102	1/126	1/189	1/242	1/300	1/363	1/414	1/493	1/543	1/611	
12V	定格扭力 Rated torque (kgf-cm)	4.2	13.8	16.8	20.4	44.9	54	67	81	91	113	125	125	125	125	125	125	125	125	125	
	定格轉速 Rated speed (rpm)	510	135	112	90.9	36	29.7	24	19.7	17.6	14.2	9.5	7.5	6.2	5.1	4.4	3.7	3.4	3		
24V	定格扭力 Rated torque (kgf-cm)	7	23.1	28	34.6	74.9	90.6	112	125	125	125	125	125	125	125	125	125	125	125	125	
	定格轉速 Rated speed (rpm)	510	135	112	90.9	36	29.7	24	19.8	17.7	14.3	9.6	7.6	6.3	5.2	4.5	3.8	3.5	3.1		
軸心迴轉方向 Rotation direction		CW																			
長度 Length (L)		47.3	63.8				80.3						96.8								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	1500	1800	$\leq$ 3.0	2000	$\leq$ 0.8	27.7	1650
24	2500	1800	$\leq$ 2.5	2000	$\leq$ 0.4	46.2	1650

### 馬達單體特性/ Motor Characteristics



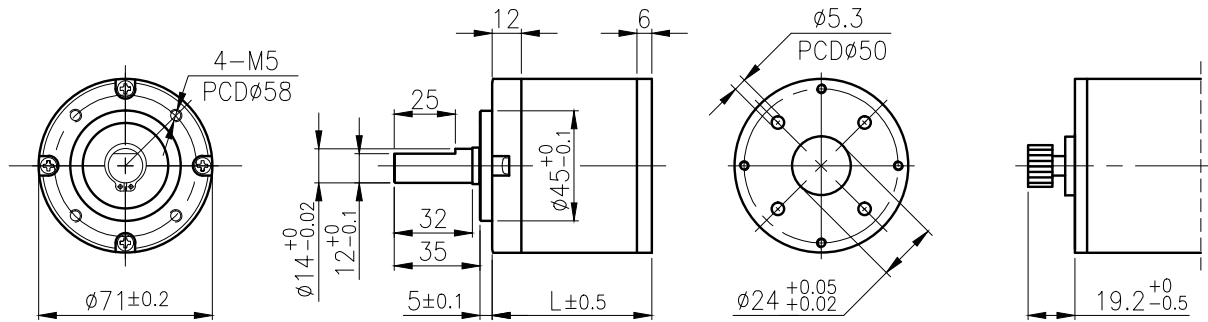
IG

# IG-71



Right Angle

## 外形尺寸 & 馬達齒銜尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq 25$ kgf	$\leq 10$ kgf	$\leq 50$ kgf	$\leq 0.08$ mm	$\leq 0.4$ mm	$\leq 3^\circ$

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	13	$20^\circ$	$\phi 6 \times 4.5$	1/102, 1/126, 1/242, 1/300, 1/363, 1/493, 1/611
1.0	14	$20^\circ$	$\phi 8 \times 6$	1/16, 1/20, 1/60, 1/75, 1/91, 1/414, 1/543
1.0	18	$20^\circ$	$\phi 8 \times 6$	1/13, 1/50, 1/189
1.0	20	$20^\circ$	$\phi 8 \times 6$	1/4

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/13	1/16	1/20	1/50	1/60	1/75	1/91	1/102	1/126	1/189	1/242	1/300	1/363	1/414	1/493	1/543	1/611
定格容許扭力 (kgf-cm max.) Rated tolerance torque	15	70	70	70	125	125	125	125	125	125	125	125	125	125	125	125	125	125
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	45	210	210	210	375	375	375	375	375	375	375	375	375	375	375	375	375	375
效率 Efficiency	80%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%	50%
長度 (L) Length (L)	49.3	65.8	65.8	65.8	82.3	82.3	82.3	82.3	82.3	82.3	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
重量 (滾珠軸承) Weight (g) / Ball bearings	900	1230	1230	1230	1560	1560	1560	1560	1560	1560	1900	1900	1900	1900	1900	1900	1900	1900

Encoder

Driver

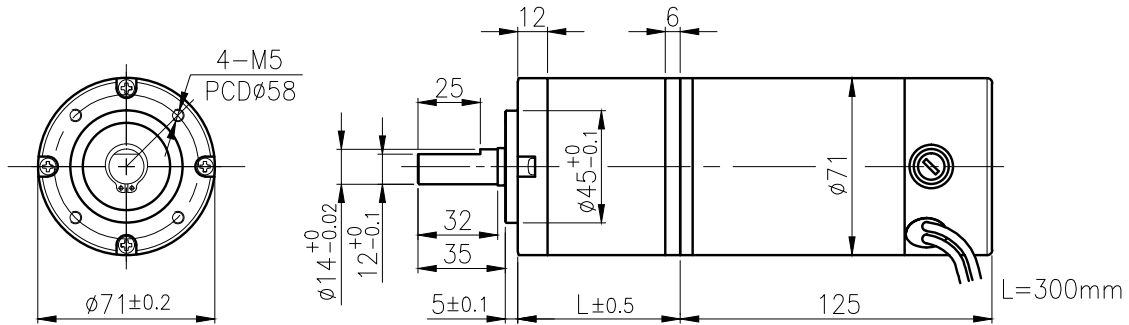
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-71GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

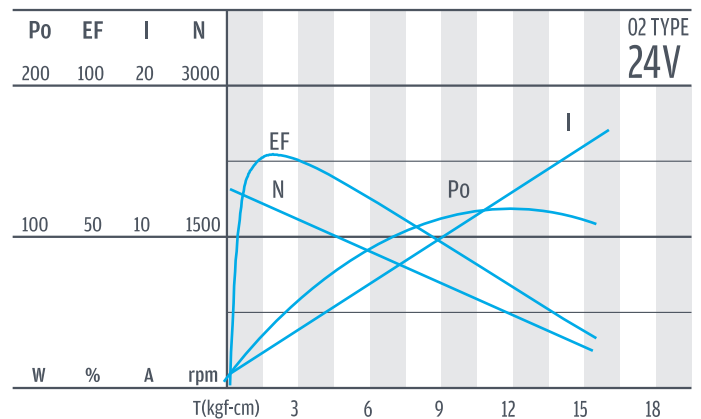
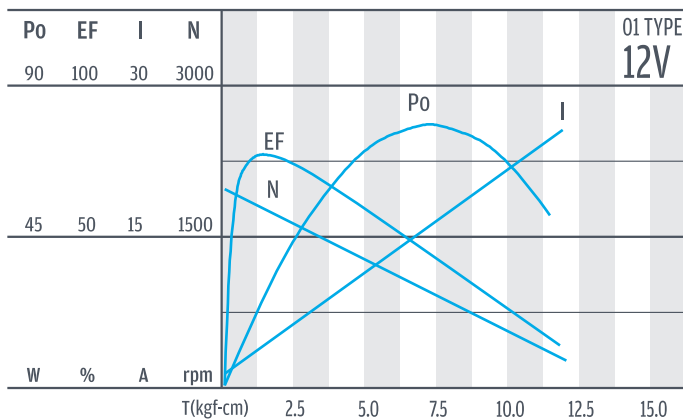
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/13	1/16	1/20	1/50	1/60	1/75	1/91	1/102	1/126	1/189	1/242	1/300	1/363	1/414	1/493	1/543	1/611		
12V	定格扭力 Rated torque (kgf-cm)	4.2	13.8	16.8	20.4	44.9	54	67	81	91	113	125	125	125	125	125	125	125	125		
	定格轉速 Rated speed (rpm)	510	135	112	90.9	36	29.7	24	19.7	17.6	14.2	9.5	7.5	6.2	5.1	4.4	3.7	3.4	3.0		
24V	定格扭力 Rated torque (kgf-cm)	7	23.1	28	34.6	74.9	90.6	112	125	125	125	125	125	125	125	125	125	125	125		
	定格轉速 Rated speed (rpm)	510	135	112	90.9	36	29.7	24	19.8	17.7	14.3	9.6	7.6	6.3	5.2	4.5	3.8	3.5	3.1		
	軸心迴轉方向 Rotation direction	CW																			
	長度 Length (L)	49.3		65.8				82.3								98.8					

### 馬達單體型式/ Motor Data

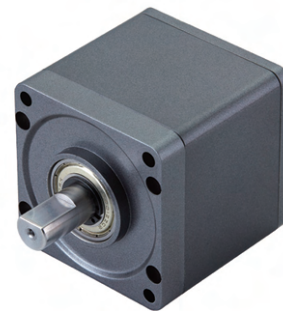
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	1500	1800	≤3	2000	≤0.8	27.7	1650
24	2500	1800	≤2.5	2000	≤0.4	46.2	1650

### 馬達單體特性/ Motor Characteristics



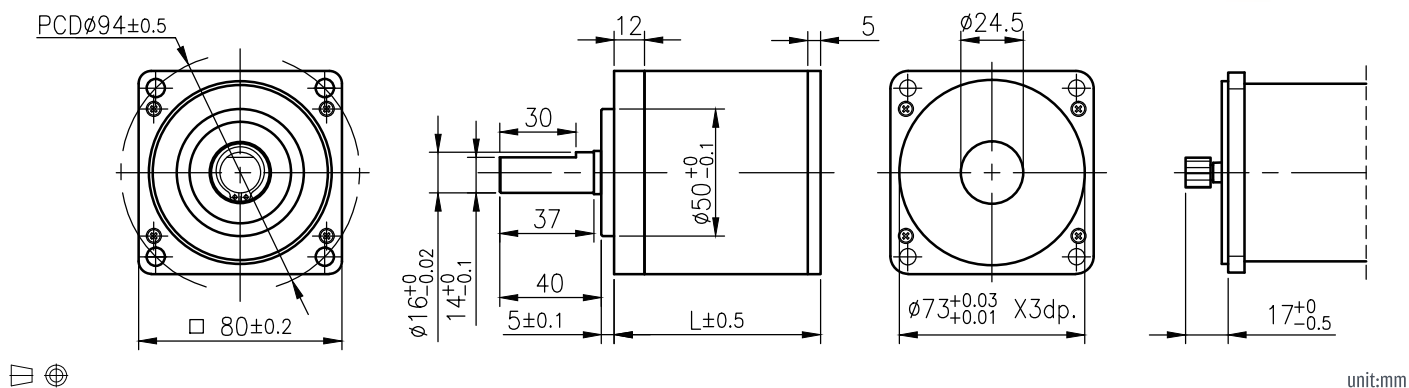
IG

# IG-80W



Right Angle

## 外形尺寸 & 馬達齒鉤尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq 30$ kgf	$\leq 10$ kgf	$\leq 75$ kgf	$\leq 0.08$ mm	$\leq 0.4$ mm	$\leq 3^\circ$

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	13	20°	$\phi$ 6X4.5	1/19, 1/21, 1/71, 1/80, 1/103, 1/117, 1/306 1/393, 1/445, 1/571, 1/647
1.0	21	20°	$\phi$ 8X6	1/13, 1/15, 1/49, 1/55, 1/186, 1/210

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/13	1/15	1/19	1/21	1/49	1/55	1/71	1/80	1/103	1/117	1/186	1/210	1/306	1/393	1/445	1/571	1/647
定格容許扭力 (kgf-cm max.) Rated tolerance torque	15	70	70	70	70	125	125	125	125	125	125	125	125	125	125	125	125	125
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	45	210	210	210	210	375	375	375	375	375	375	375	375	375	375	375	375	375
效率 Efficiency	80%	70%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%
長度 Length (L)	49.3	65.8	65.8	65.8	65.8	82.3	82.3	82.3	82.3	82.3	82.3	98.8	98.8	98.8	98.8	98.8	98.8	98.8
重量 (滾珠軸承) Weight (g) /Ball bearings	1100	1570	1570	1570	1570	2040	2040	2040	2040	2040	2040	2510	2510	2510	2510	2510	2510	2510

PG

Encoder

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

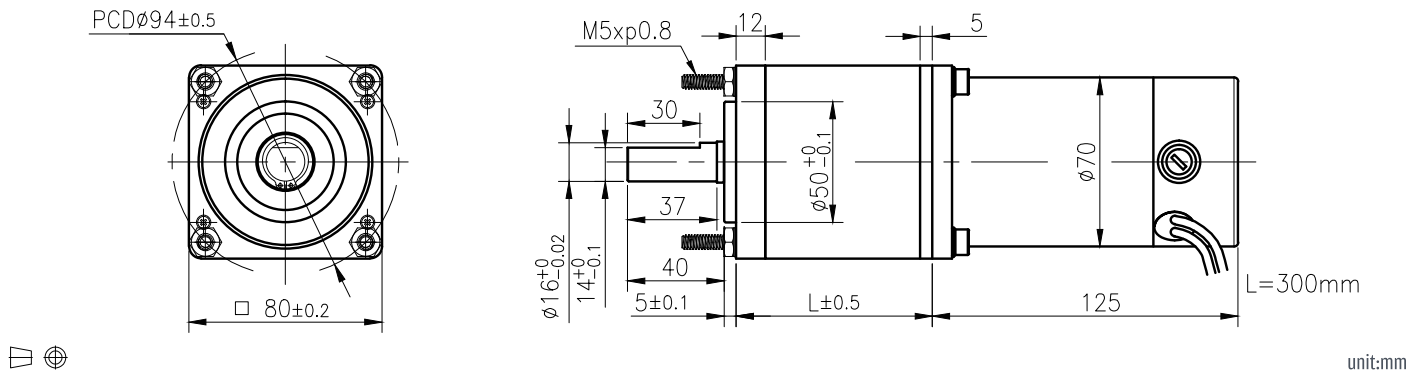
Driver

# IG-80WGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



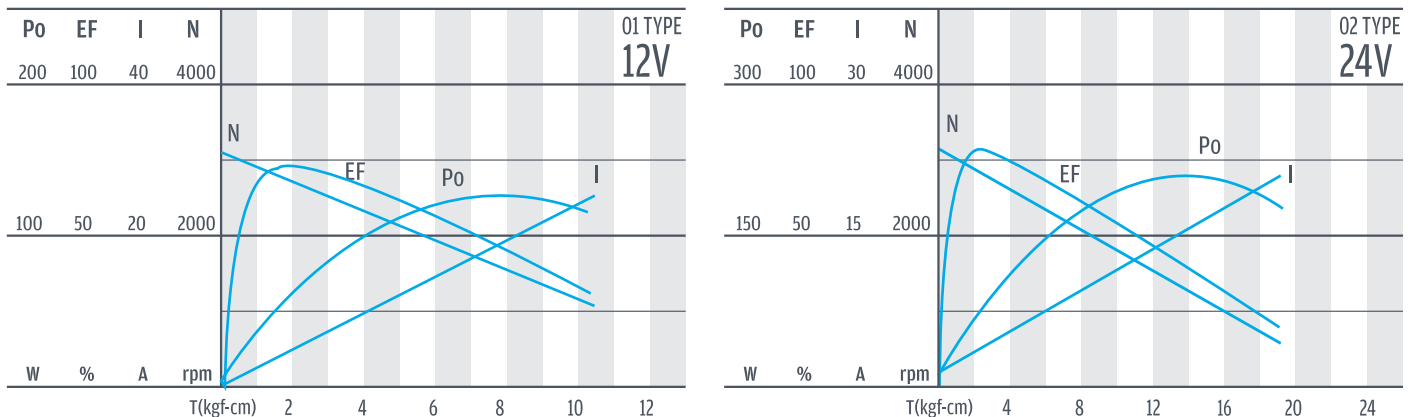
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/13	1/15	1/19	1/21	1/49	1/55	1/71	1/80	1/103	1/117	1/186	1/210	1/306	1/393	1/445	1/571	1/647
12V	定格扭力 Rated torque (kgf-cm)	6	18	20	26	29	58	66	85	96	123	125	125	125	125	125	125	125	125
	定格轉速 Rated speed (rpm)	720	210	185	145	130	56	49	38	34	26.5	23.5	15	13.4	9.3	7.3	6.5	5.1	4.5
24V	定格扭力 Rated torque (kgf-cm)	8.8	26	29	37	42	84	95	123	125	125	125	125	125	125	125	125	125	125
	定格轉速 Rated speed (rpm)	730	215	190	149	133	57	50	39	35	27.5	24	15.4	13.7	9.6	7.5	6.7	5.2	4.6
	軸心迴轉方向 Rotation direction	CW																	
	長度 Length (L)	49.3	65.8				82.3				98.8								

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	2000	2750	≤ 6.3	3200	≤ 1.4	56.5	1650
24	2900	2800	≤ 4.4	3200	≤ 0.85	83.4	1650

### 馬達單體特性/ Motor Characteristics



IG

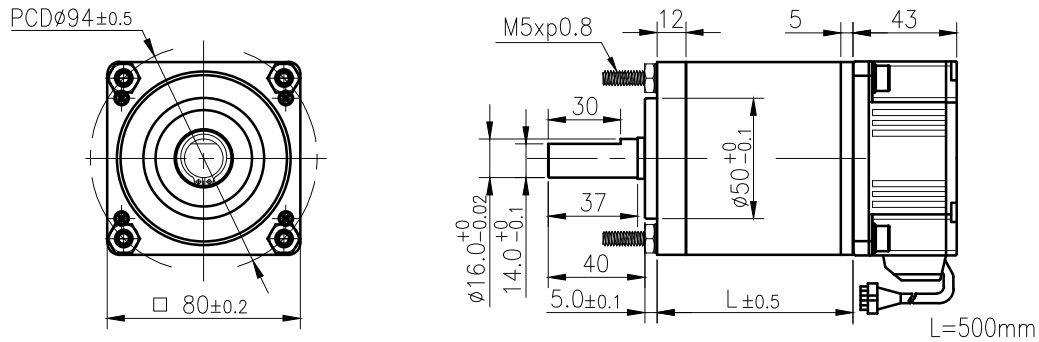
# IG-80WGM

## 41 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/13	1/15	1/19	1/21	1/49	1/55	1/71	1/80	1/103	1/117	1/186	1/210	1/306	1/393	1/445	1/571	1/647		
24V 定格扭力 Rated torque (kgf-cm)	6	17.9	20	26	29	58	66	85	96	123	125	125	125	125	125	125	125	125		
24V 定格轉速 Rated speed (rpm)	657	195	172	134	119	51	45	35	31.2	24.2	21.3	13.4	11.9	8.1	6.3	5.6	4.3	3.8		
長度 Length (L)	49.3		65.8			82.3						98.8								

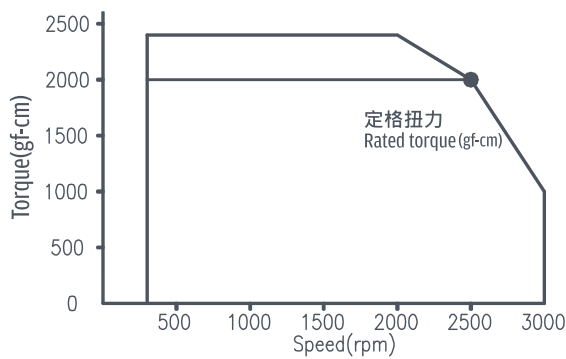
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	24	2000	2500	≤3.2	3000	≤0.45	51.35	800
定格電壓 Rated volt (V)	24	2000	2500	≤3.2	3000	≤0.45	51.35	800
起動扭力 Start torque (gf-cm)	2400	60HZ AC500V	100MΩ DC500V	A class (105°C)	20%~85%RH	0~+50°C		
絕緣抗耐 Insulation voltage								
絕緣阻抗 Insulation resistance								
絕緣等級 Insulation class								
使用相對溼度 Operating relative humidity								
使用溫度範圍 Operating temperature range								

PG

### 馬達單體特性/ Motor Characteristics



### 搭配之驅動器型式/ Connected With Motor Driver

型號 Type	DBMC50-3
輸入電壓 Input voltage	DC 24V±10%
速度控制範圍 Speed control range	300~3000 rpm
速度設定方式 Speed control way	1. 內部速度設定 Internal control 2. 外部速度設定 External speed control 3. 外部直流電壓控制 (DC 0~5V) External voltage control (DC 0~5V)

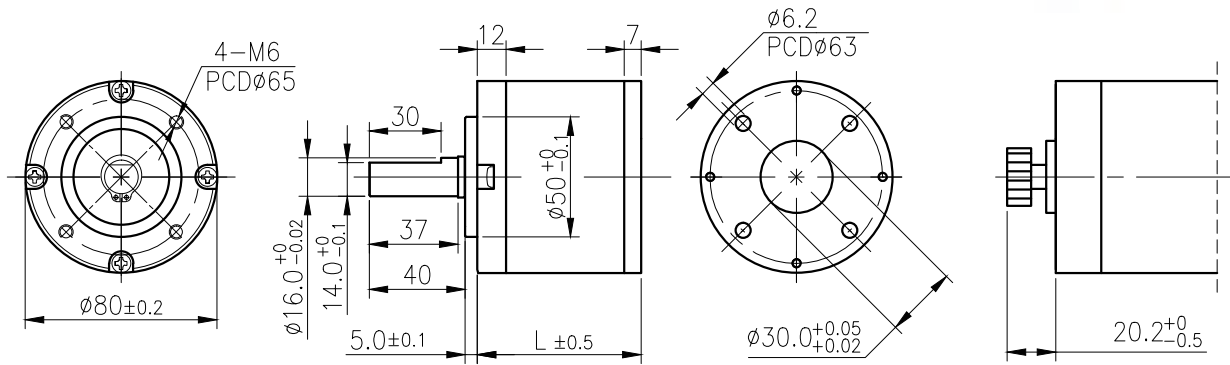
Driver



# IG-80



外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq 30$ kgf	$\leq 10$ kgf	$\leq 75$ kgf	$\leq 0.08$ mm	$\leq 0.4$ mm	$\leq 3^\circ$

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	13	$20^\circ$	$\varnothing 6 \times 4.5$	1/19, 1/21, 1/71, 1/80, 1/103, 1/117, 1/306 1/393, 1/445, 1/571, 1/647
1.0	21	$20^\circ$	$\varnothing 10 \times 8$	1/4, 1/13, 1/15, 1/49, 1/55, 1/186, 1/210

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/13	1/15	1/19	1/21	1/49	1/55	1/71	1/80	1/103	1/117	1/186	1/210	1/306	1/393	1/445	1/571	1/647
定格容許扭力 (kgf-cm max.) Rated tolerance torque	15	70	70	70	70	125	125	125	125	125	125	125	125	125	125	125	125	125
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	45	210	210	210	210	375	375	375	375	375	375	375	375	375	375	375	375	375
效率 Efficiency	80%	70%	70%	70%	70%	60%	60%	60%	60%	60%	60%	50%	50%	50%	50%	50%	50%	50%
長度 Length (L)	52.3	68.8	68.8	68.8	68.8	85.3	85.3	85.3	85.3	85.3	85.3	101.8	101.8	101.8	101.8	101.8	101.8	101.8
重量 (滾珠軸承) Weight (g) / Ball bearings	1200	1650	1650	1650	1650	2100	2100	2100	2100	2100	2100	2550	2550	2550	2550	2550	2550	2550

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

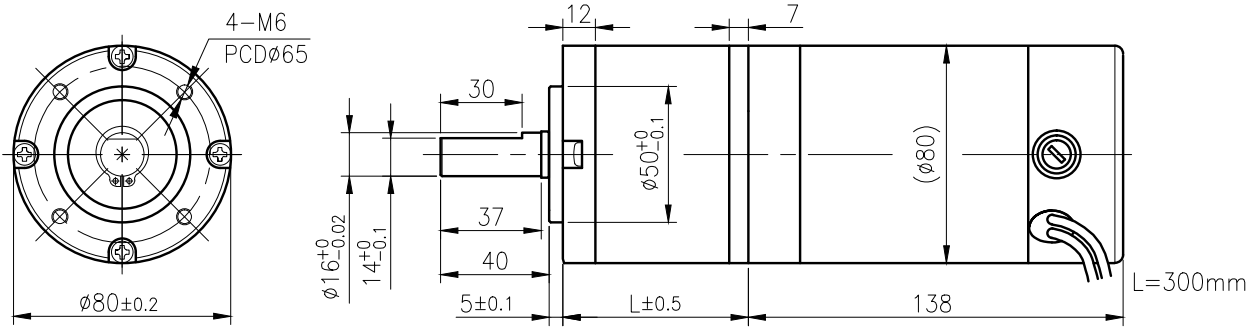
# IG-80GM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/13	1/15	1/19	1/21	1/49	1/55	1/71	1/80	1/103	1/117	1/186	1/210	1/306	1/393	1/445	1/571	1/647	
12V	定格扭力 Rated torque (kgf-cm)	7.6	22.4	25	32	36	73	82	105	120	125	125	125	125	125	125	125	125	125	
	定格轉速 Rated speed (rpm)	445	130	115	90	80	34	30	23.5	21	16.7	14.7	9.3	8.3	5.8	4.5	4	3.2	2.8	
24V	定格扭力 Rated torque (kgf-cm)	9.7	28.6	32	41	47	93	99	125	125	125	125	125	125	125	125	125	125	125	
	定格轉速 Rated speed (rpm)	470	140	124	95	85	36	32	25.5	23	17.8	15.6	9.9	8.8	6	4.7	4.2	3.3	2.9	
	軸心迴轉方向 Rotation direction	CW																		
	長度 Length (L)	52.3			68.8			85.3			101.8									

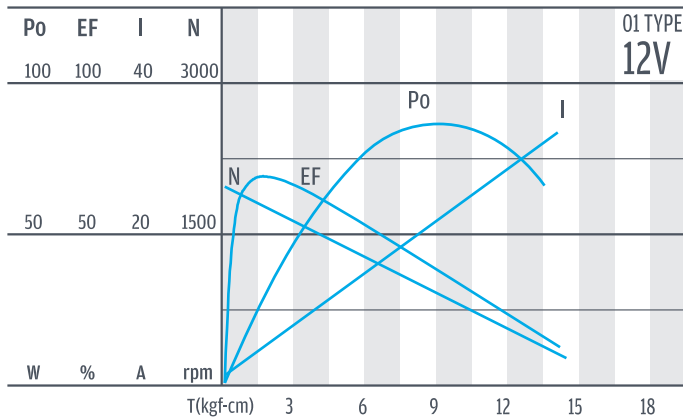
WG

PG

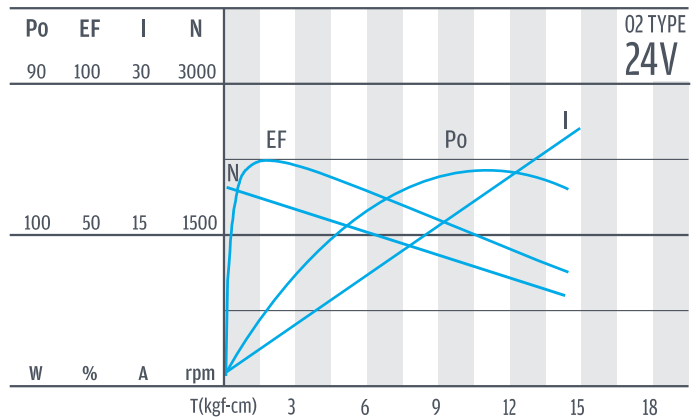
### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	2500	1700	≤ 5.3	2000	≤ 1.1	43.6	1650
24	3200	1800	≤ 3.4	2000	≤ 0.6	59	1650

### 馬達單體特性/ Motor Characteristics

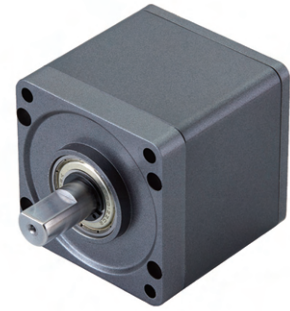


Encoder



Driver

# IG-90W



IG

Right Angle

RA

RB

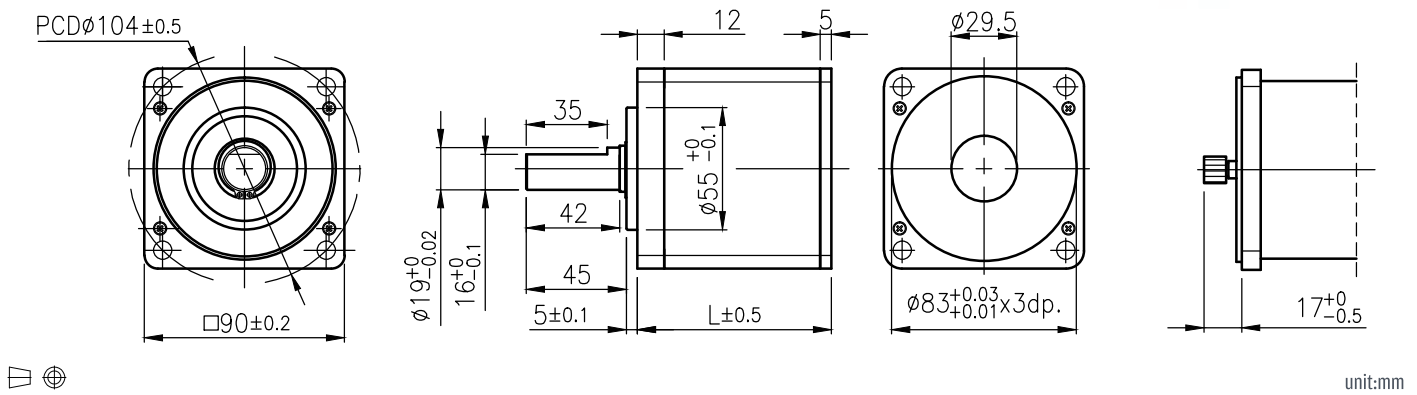
WG

PG

Encoder

Driver

## 外形尺寸 & 馬達齒鉋合尺寸 / Appearance Size & Pinion Assembly Dimension



## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤ 40 kgf	≤ 10 kgf	≤ 100 kgf	≤ 0.08 mm	≤ 0.4 mm	≤ 4°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	16	20°	○ Ø10X8	1/19, 1/77, 1/98, 1/294, 1/403, 1/517
1.0	22	20°	○ Ø10X8	1/15, 1/60
1.0	24	20°	○ Ø10X8	1/52, 1/201
1.25	21	20°	○ Ø10X8	1/4

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/15	1/19	1/52	1/60	1/77	1/98	1/201	1/294	1/403	1/517						
定格容許扭力 (kgf-cm max.) Rated tolerance torque	20	80	80	150	150	150	150	180	180	180	180						
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	60	240	240	450	450	450	450	540	540	540	540						
效率 Efficiency	80%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%						
長度 Length (L)	53.3	69.8	69.8	86.3	86.3	86.3	86.3	102.8	102.8	102.8	102.8						
重量 (滾珠軸承) Weight (g) /Ball bearings	1490	2120	2120	2750	2750	2750	2750	3380	3380	3380	3380						

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

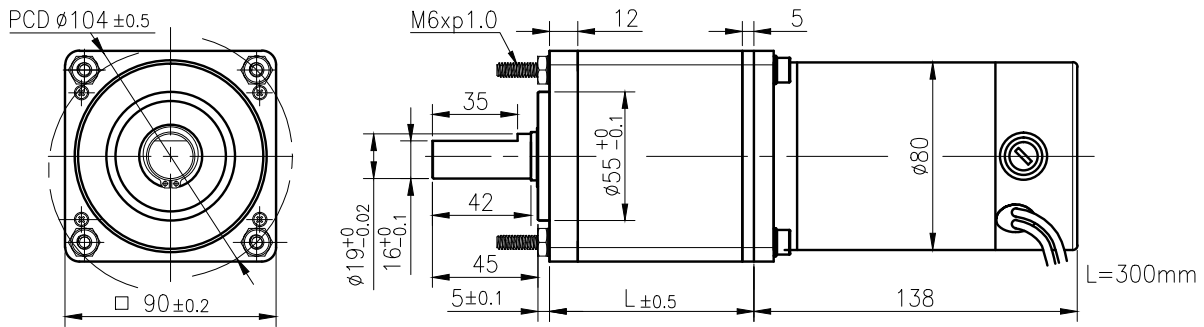
# IG-90WGM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/15	1/19	1/52	1/60	1/77	1/98	1/201	1/294	1/403	1/517					
12V	定格扭力 Rated torque (kgf-cm)	7	25	32	78	89	115	147	180	180	180	180					
	定格轉速 Rated speed (rpm)	470	115	90	32	28	22	17	8.8	6	4.5	3.6					
24V	定格扭力 Rated torque (kgf-cm)	9	32	42	100	114	147	150	180	180	180	180					
	定格轉速 Rated speed (rpm)	500	123	96	34	30	23	18.5	9.3	6.4	4.6	3.7					
	軸心迴轉方向 Rotation direction	CW															
	長度 Length (L)	53.3	69.8				86.3				102.8						

RB

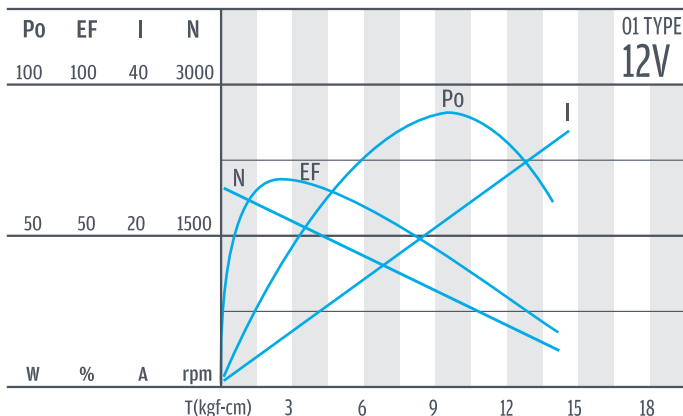
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	2500	1700	$\leq 5.3$	2000	$\leq 1.1$	43.6	2150
24	3200	1800	$\leq 3.7$	2000	$\leq 0.6$	59	2150

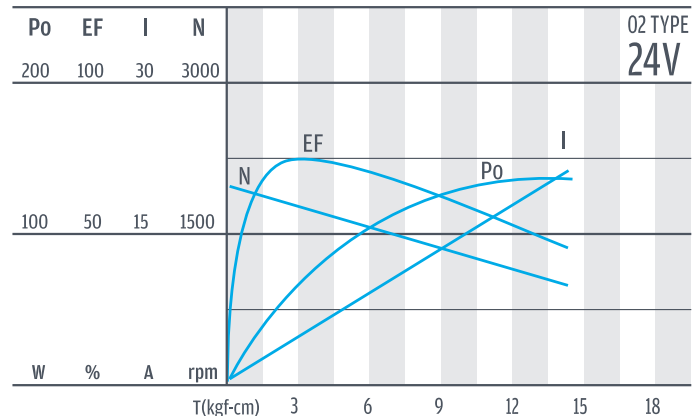
PG

### 馬達單體特性/ Motor Characteristics



Encoder

Driver

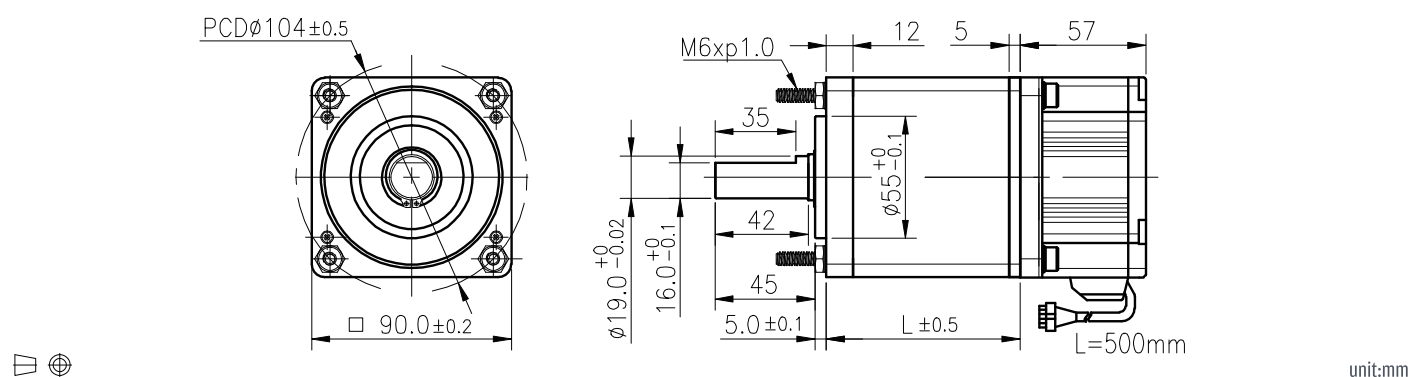


# IG-90WGM

## 41 TYPE



### 外形尺寸/ Appearance Size



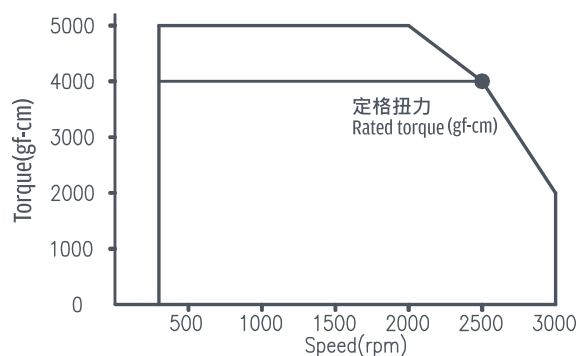
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/15	1/19	1/52	1/60	1/77	1/98	1/201	1/294	1/403	1/517	
24V	定格扭力 Rated torque (kgf-cm)	11	40	52	125	143	150	150	180	180	180	180	
	定格轉速 Rated speed (rpm)	700	171	133	47	41.8	32.5	25.4	12	8.5	6.2	4.8	
	長度 Length (L)	53.3	69.8			86.3				102.8			

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
24	4000	2500	≤ 6	3000	≤ 0.6	102.7	1300
啟動扭力 Start torque (gf-cm)	絕緣抗耐 Insulation voltage	絕緣阻抗 Insulation resistance	絕緣等級 Insulation class	使用相對溼度 Operating relative humidity	使用溫度範圍 Operating temperature range		
5000	60HZ AC500V	100MΩ DC500V	A class (105°C)	20%~85%RH	0~+50°C		

### 馬達單體特性/ Motor Characteristics



### 搭配之驅動器型式/ Connected With Motor Driver

型號 Type	DBMC100-3
輸入電壓 Input voltage	DC 24V±10%
速度控制範圍 Speed control range	300~3000 rpm
速度設定方式 Speed control way	1. 內部速度設定 Internal control 2. 外部速度設定 External speed control 3. 外部直流電壓控制 (DC 0~5V) External voltage control (DC 0~5V)

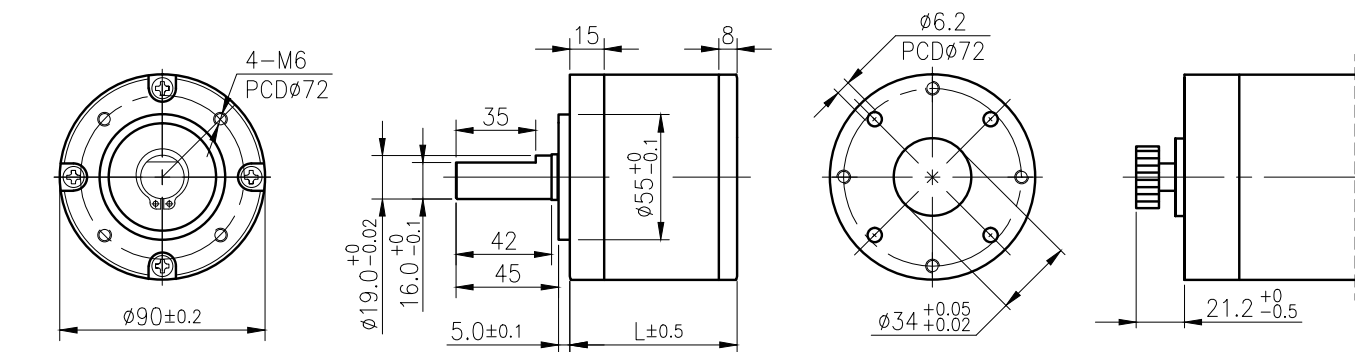
IG

# IG-90



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤ 40 kgf	≤ 10 kgf	≤ 100 kgf	≤ 0.08 mm	≤ 0.4 mm	≤ 4°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
1.0	16	20°	○ ∅10X8	1/19, 1/77, 1/98, 1/294, 1/403, 1/517
1.0	22	20°	○ ∅12X10	1/15, 1/60
1.0	24	20°	○ ∅12X10	1/52, 1/201
1.25	21	20°	○ ∅12X10	1/4

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/4	1/15	1/19	1/52	1/60	1/77	1/98	1/201	1/294	1/403	1/517
定格容許扭力 (kgf-cm max.) Rated tolerance torque	20	80	80	150	150	150	150	180	180	180	180
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	60	240	240	450	450	450	450	540	540	540	540
效率 Efficiency	80%	70%	70%	60%	60%	60%	60%	50%	50%	50%	50%
長度 Length (L)	57.3	73.8	73.8	90.3	90.3	90.3	90.3	106.8	106.8	106.8	106.8
重量 (滾珠軸承) Weight (g) / Ball bearings	1670	2230	2230	2800	2800	2800	2800	3370	3370	3370	3370

Encoder

Driver

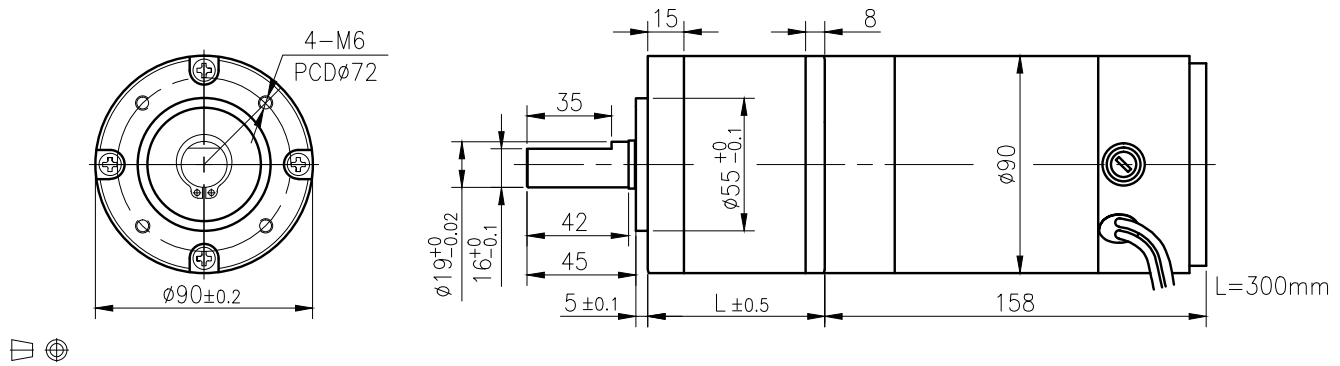
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# IG-90GM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

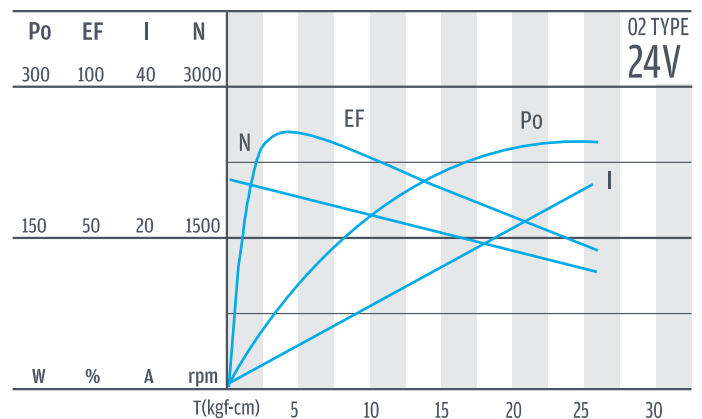
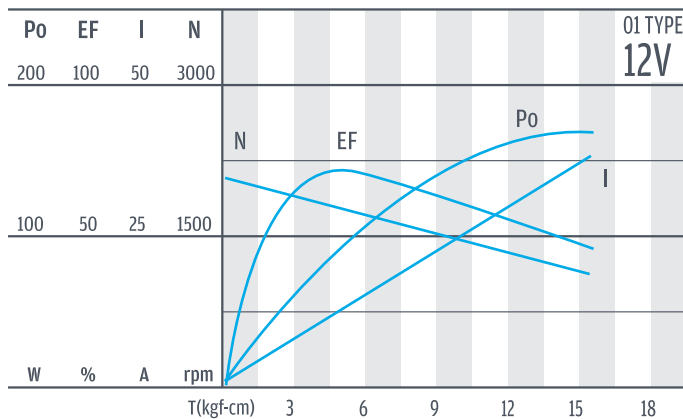
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/4	1/15	1/19	1/52	1/60	1/77	1/98	1/201	1/294	1/403	1/517
12V	定格扭力 Rated torque (kgf-cm)	10	37	48	115	132	150	150	180	180	180	180
	定格轉速 Rated speed (rpm)	500	123	96	34	31	24	19	9.2	6.4	4.6	3.6
24V	定格扭力 Rated torque (kgf-cm)	12	42	55	130	150	150	180	180	180	180	180
	定格轉速 Rated speed (rpm)	510	127	99	35	31	25	20	9.4	6.5	4.7	3.7
	軸心迴轉方向 Rotation direction	CW										
	長度 Length (L)	57.3	73.8			90.3				106.8		

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	3700	1800	≤8.3	2000	≤1.5	68.4	2150
24	4200	1860	≤3.9	2000	≤0.95	80	2150

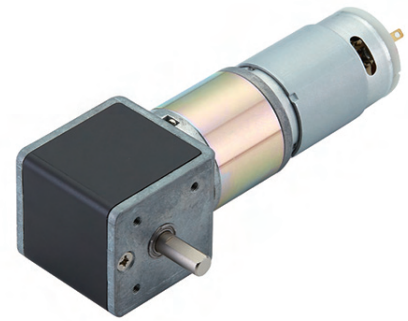
### 馬達單體特性/ Motor Characteristics



IG

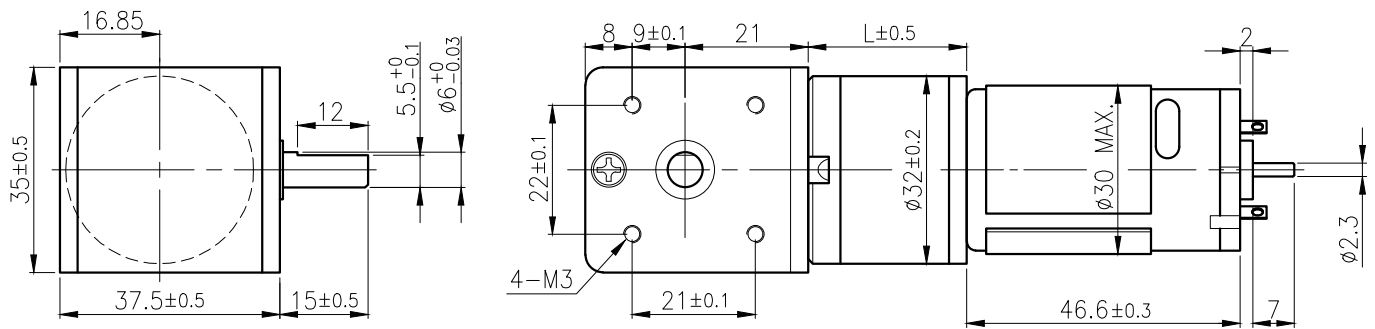
# IG-32RGM

## 03 & 04 TYPE



Right Angle

### 外形尺寸 / Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

		1/5	1/14	1/19	1/27	1/35	1/51	1/71	1/100	1/139	1/189	1/264	1/516	1/721	1/939					
12V	減速比 Reduction ratio																			
	定格扭力 Rated torque (kgf-cm)	0.4	0.9	1.2	1.7	2.3	2.8	3.9	5.4	7.6	8.3	11.6	12	12	12					
24V	定格轉速 Rated speed (rpm)	1140	430	310	220	170	116	83	60	43	32	24	12.9	9.5	7.2					
	定格扭力 Rated torque (kgf-cm)	0.47	1.1	1.5	2.1	2.7	3.3	4.6	6.4	9	9.8	12	12	12	12					
軸心迴轉方向 Rotation direction		CCW																		
長度 Length (L)		20.6			27			33.4			39.8									

RB

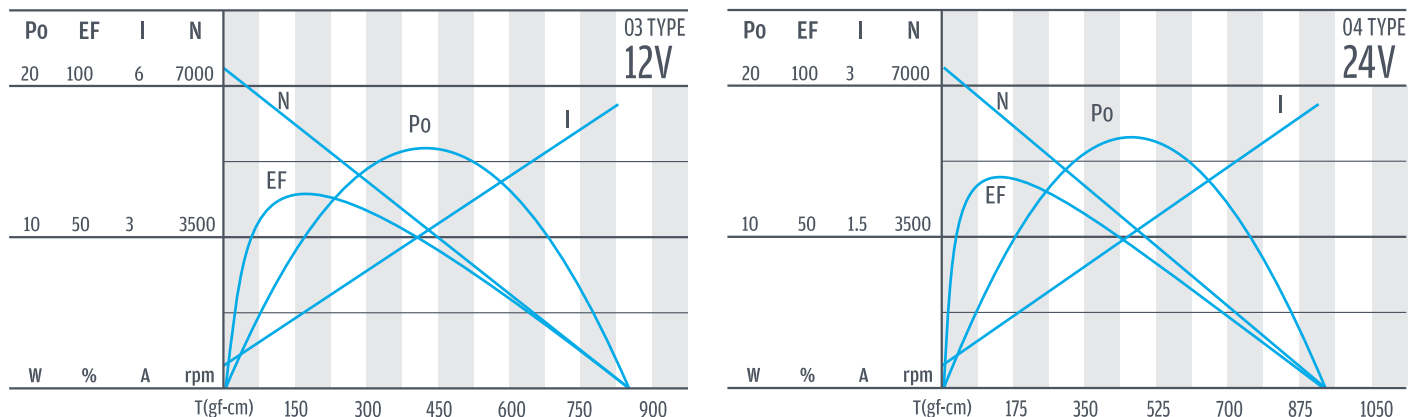
WG

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	110	5950	≤0.9	7300	≤0.15	7	110
24	130	6160	≤0.5	7300	≤0.08	8.5	110

PG

### 馬達單體特性 / Motor Characteristics



Encoder

Driver

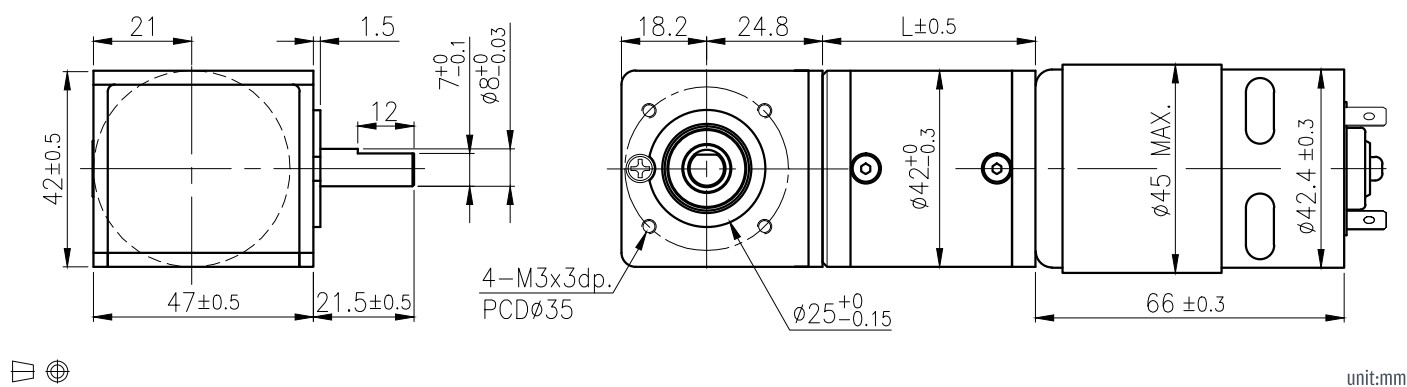


# IG-42CRGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



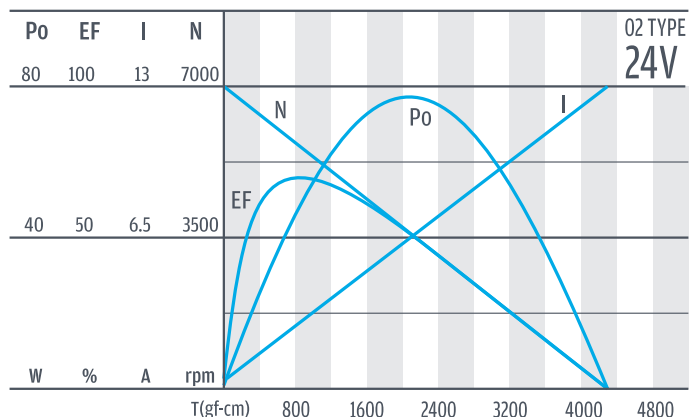
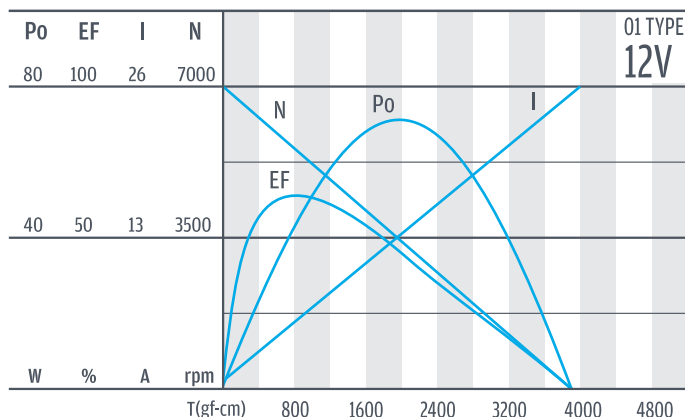
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
12V	減速比 Reduction ratio	2	6.1	7.6	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
	定格扭力 Rated torque (kgf-cm)	2	6.1	7.6	8	18	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
24V	減速比 Reduction ratio	1.6	5	6.2	8	15	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
	定格扭力 Rated torque (kgf-cm)	1.6	5	6.2	8	15	18	18	20	20	25	25	30	30	30	30	30	30	30	30	30
12V	定格轉速 Rated speed (rpm)	1400	405	325	248	120	98	76	63	45	31	24	13.5	10.9	9.5	8	6.5	4.6	2.7	2.3	1.9
	定格轉速 Rated speed (rpm)	1445	420	340	240	122	102	77.5	63	47	31	23.8	13.5	10.9	9.5	8	6.5	4.6	2.7	2.3	1.9
軸心迴轉方向 Rotation direction		CCW																			
長度 Length (L)		32.5	39.2	45.9	52.6	59.6															

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	700	5700	≤5.5	7000	≤0.9	41.3	360
24	570	5900	≤2.1	7000	≤0.5	34.7	360

### 馬達單體特性/ Motor Characteristics



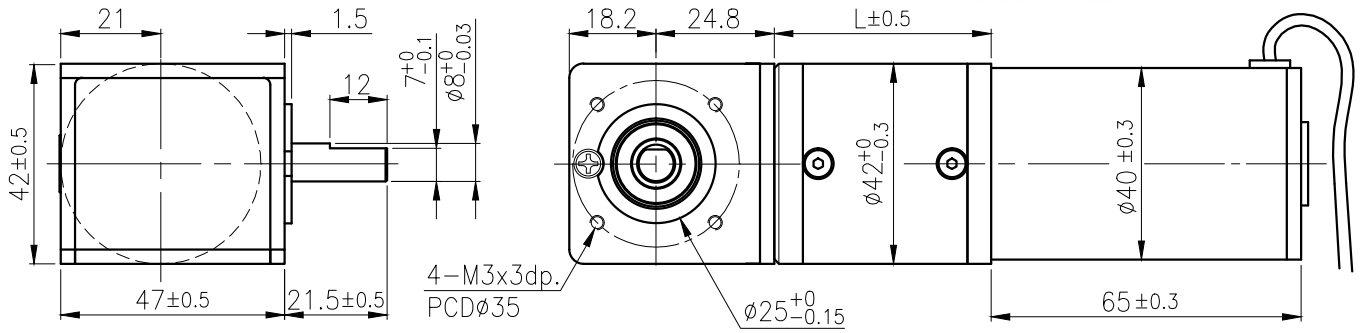
# IG-42CRGM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

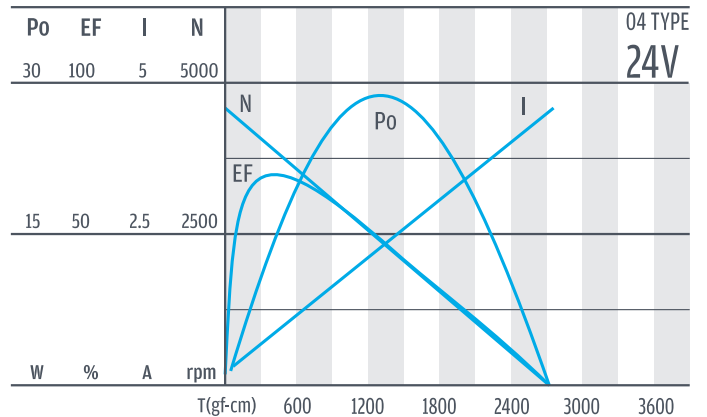
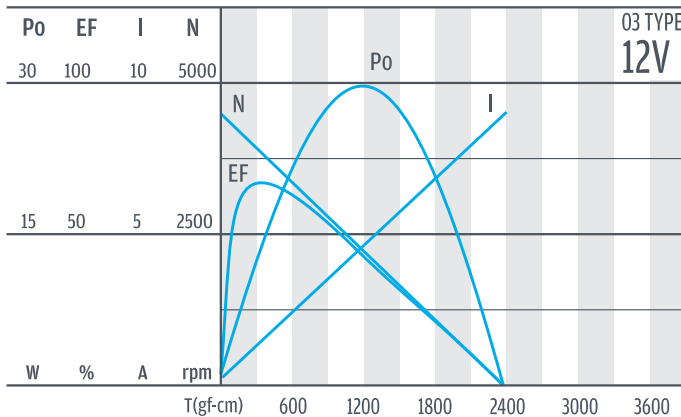
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/4	1/14	1/17	1/24	1/49	1/61	1/84	1/104	1/144	1/212	1/294	1/504	1/624	1/720	1/864	1/1062	1/1470	1/2500	1/3000	1/3600
12V 定格扭力 Rated torque (kgf-cm)	1.2	3.8	4.7	6.5	11.3	14	18	20	20	25	25	30	30	30	30	30	30	30	30	30
12V 定格轉速 Rated speed (rpm)	930	265	210	150	76	61	45	37	27	18.5	14	8.3	6.9	5.9	4.9	4	2.8	1.7	1.4	1.2
24V 定格扭力 Rated torque (kgf-cm)	1	3	3.8	5.2	9.2	11.4	16	20	20	25	25	30	30	30	30	30	30	30	30	30
24V 定格轉速 Rated speed (rpm)	945	270	215	155	76	62	45	36	27	18.5	14	8.3	6.9	5.9	4.9	4	2.8	1.7	1.4	1.2
軸心迴轉方向 Rotation direction	CW																			
長度 Length (L)	32.5			39.2			45.9			52.6			59.6							

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	430	3750	≤ 2.0	4500	≤ 0.5	16.56	310
24	350	3800	≤ 0.82	4500	≤ 0.22	13.65	310

### 馬達單體特性/ Motor Characteristics



Encoder

Driver

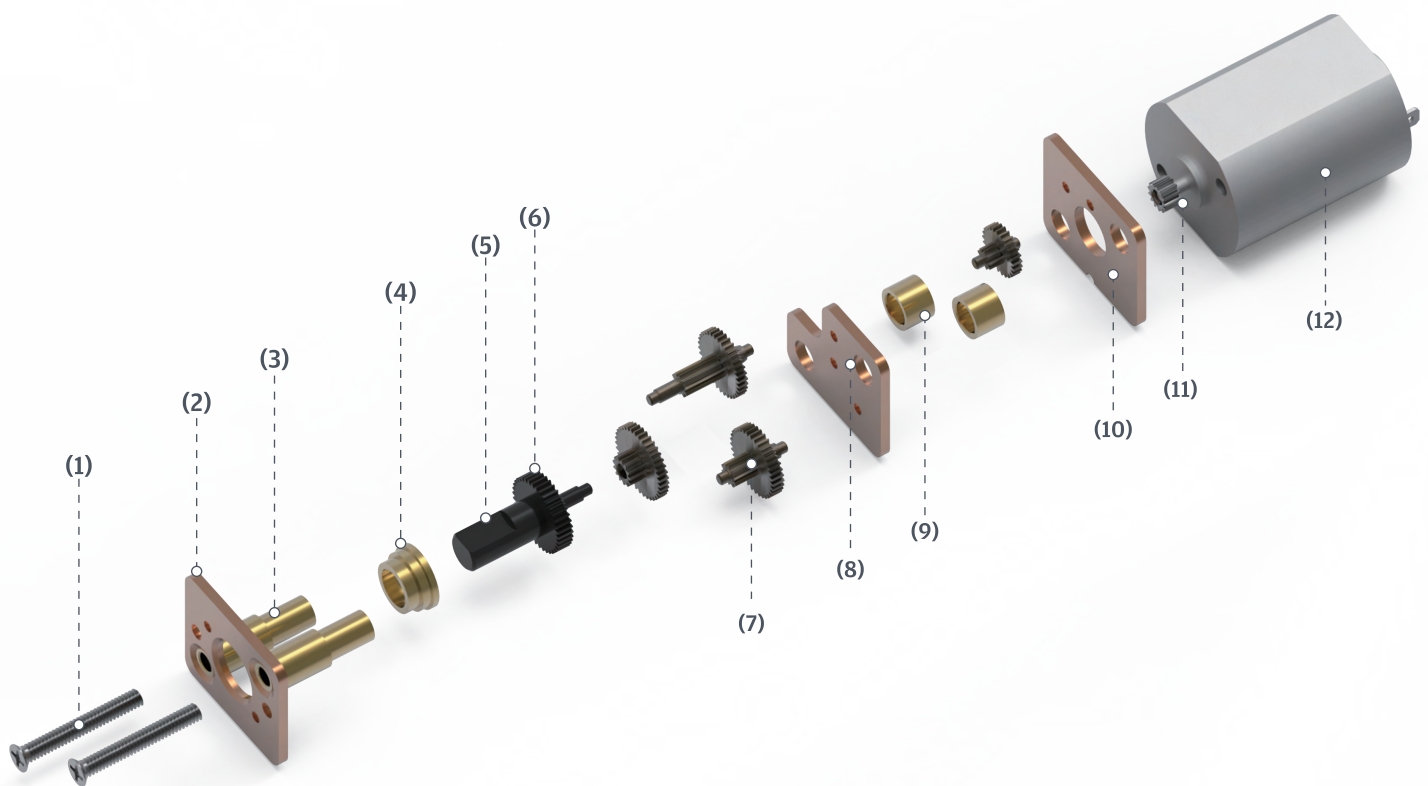


# Spur Gearbox & Gear Motor

RA series - Center Output Shaft  
RB series - Eccentric Output Shaft

# 正齒齒輪箱 (中心出軸)

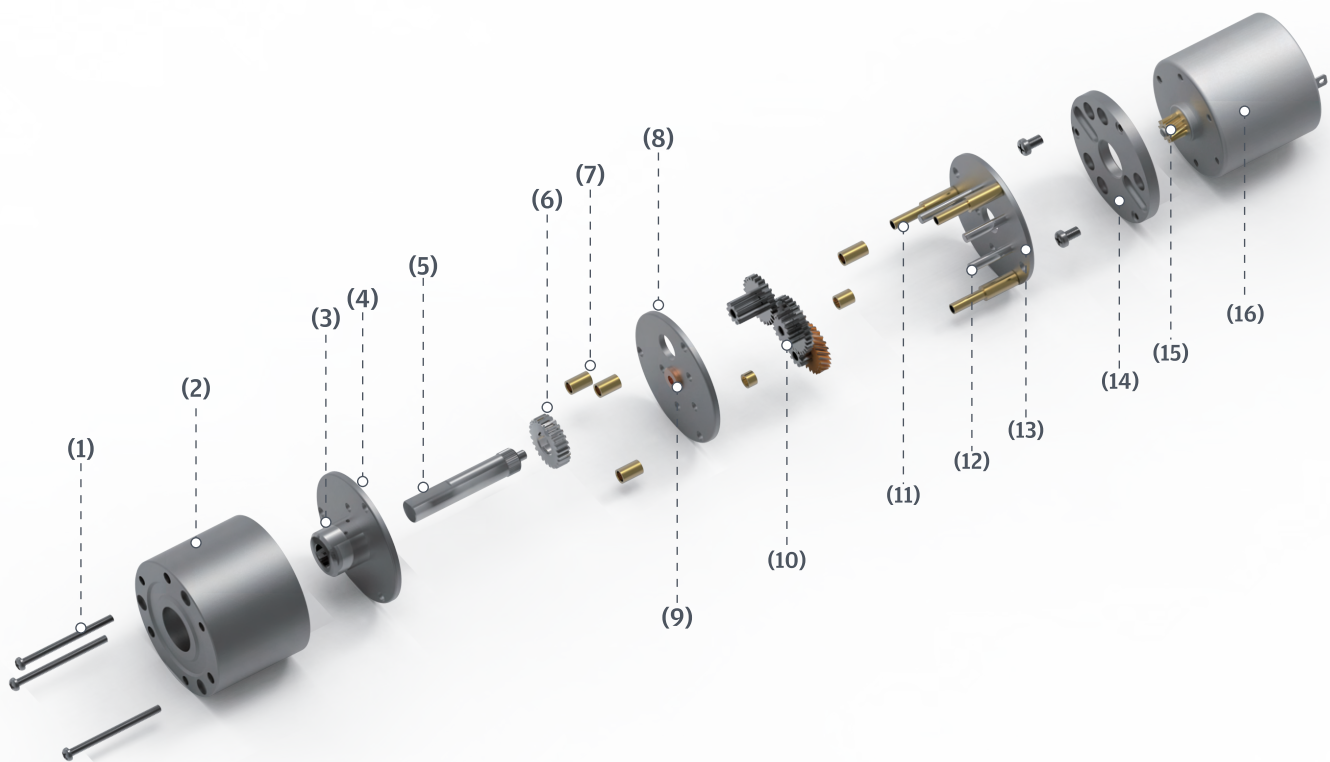
## RA series (Center Output Shaft)



1	螺絲	Screw	7	塔輪	Gear wheel
2	上機板	Front plate	8	中間機板	Intermediate plate
3	支撐套	Support	9	間隔套	Spacer sleeve
4	襯套	Bushing	10	下機板	End plate
5	主軸	Output shaft	11	馬達齒	Pinion
6	傳動齒輪	Output gear	12	馬達	Motor

# 正齒齒輪箱 (中心出軸)

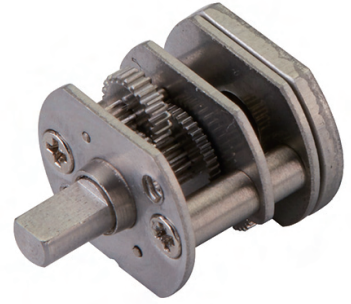
## RA series (Center Output Shaft)



1	螺絲	Screw	9	襯套	Bushing
2	外殼	Housing	10	塔輪	Gear wheel
3	軸承	Bearing	11	支撐套	Support
4	上機板	Front plate	12	梢	Pin
5	主軸	Output shaft	13	下機板	End plate
6	傳動齒輪	Output gear	14	下蓋	Motor flange
7	間隔套	Spacer sleeve	15	馬達齒	Pinion
8	中間機板	Intermediate plate	16	馬達	Motor

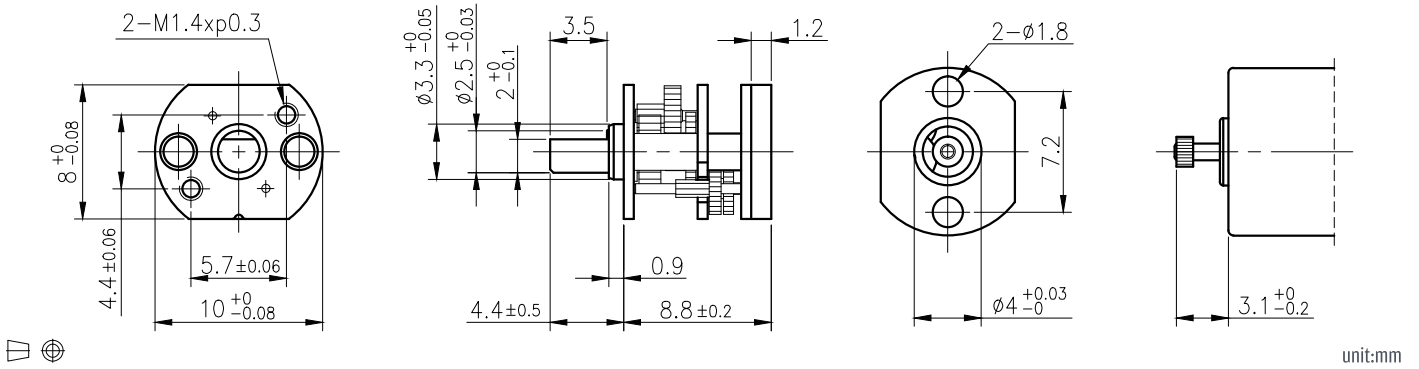
IG

# RA-10W



Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



RA

### 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
---	滑動軸承 Sleeve bearing	≤0.2kg	≤0.1kg	≤1kg	≤0.06mm	≤0.2mm	≤1.5°

RB

### 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.11	17	20°	Ø0.99	1/30
0.11	15	20°	Ø0.99	1/53,1/98,1/152, 1/207,1/242

WG

### 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/30	1/53	1/98	1/152	1/207	1/242							
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.05	0.1	0.2	0.2	0.25	0.25							
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.15	0.3	0.6	0.6	0.75	0.75							
效率 Efficiency	66%	59%	59%	59%	59%	59%							
重量 Weight (g)	2	2	2	2	2	2							

PG

Encoder

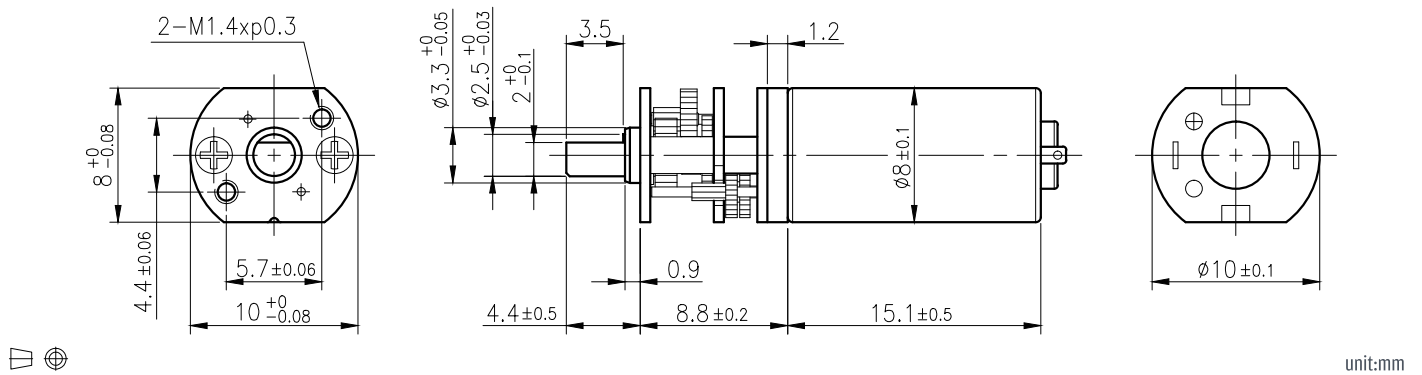
Driver

# RA-10WGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



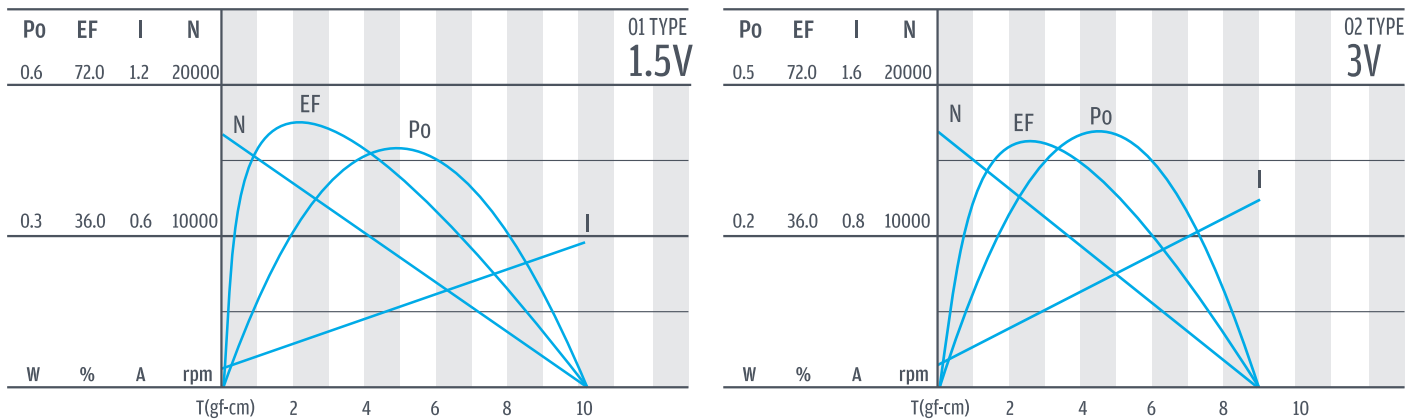
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/30	1/53	1/98	1/152	1/207	1/242						
1.5V	定格扭力 Rated torque (gf-cm)	39	63	116	179	244	250						
	定格轉速 Rated speed (rpm)	423	239	128	83	61	52						
3V	定格扭力 Rated torque (gf-cm)	39	63	116	179	244	250						
	定格轉速 Rated speed (rpm)	453	256	137	89	65	55						
	軸心迴轉方向 Rotation direction	CW		CCW									

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
1.5V	2	12000	≤0.35	17000	≤0.15	0.28	4
3V	2	13000	≤0.16	17000	≤0.05	0.29	4

### 馬達單體特性/ Motor Characteristics



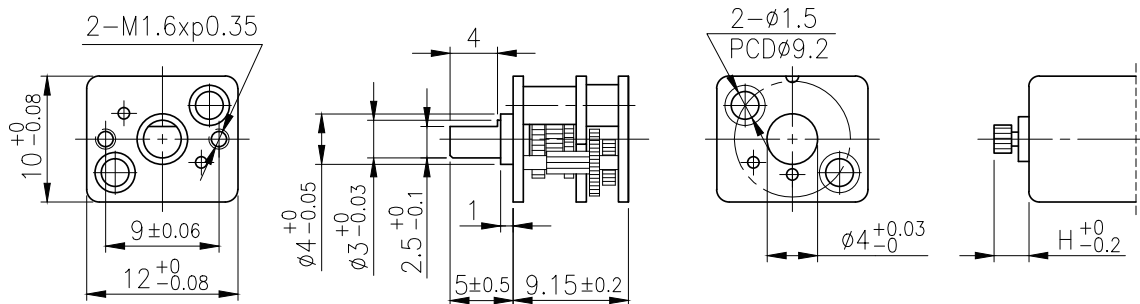
IG

# RA-12W



Right Angle

## 外形尺寸 & 馬達齒銜尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
---	滑動軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.06 mm	≤ 0.2 mm	≤ 1.5°

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.15	12	20°	ø 0.99	1/29, 1/235, 1/298
0.15	13	20°	ø 0.99	1/10, 1/102
0.15	16	20°	ø 0.99	1/19, 1/60, 1/76, 1/134, 1/197

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.3	0.5	0.5	0.8	0.8	1	1	1
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	0.9	1.5	1.5	2.4	2.4	3	3	3
效率 Efficiency	81%	73%	73%	66%	66%	66%	59%	59%	59%	59%
高度 Height (H)	2.5	2.1	2.1	2.5	2.5	2.5	2.1	2.1	2.1	2.1
重量 Weight (g)	4	4	4	4	4	4	4	4	4	4

PG

Encoder

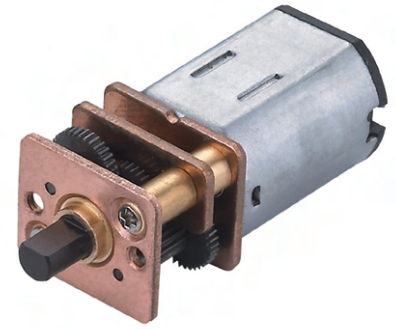
Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

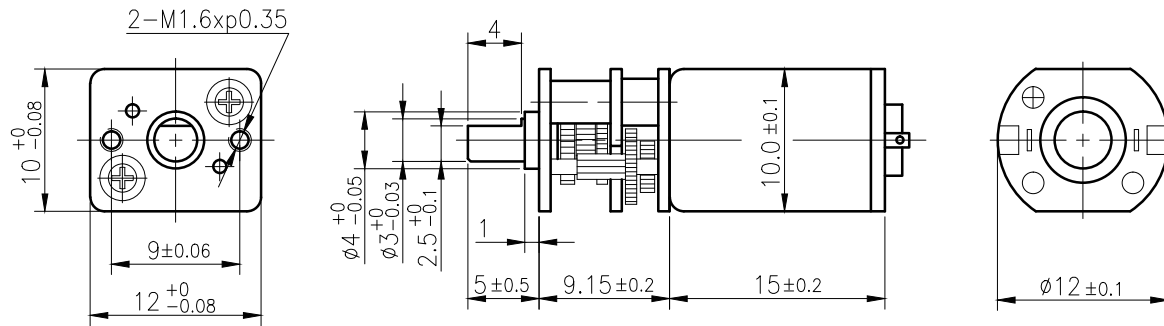


# RA-12WGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

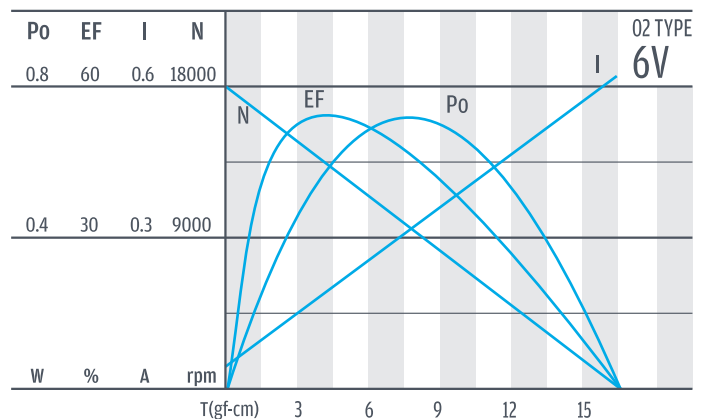
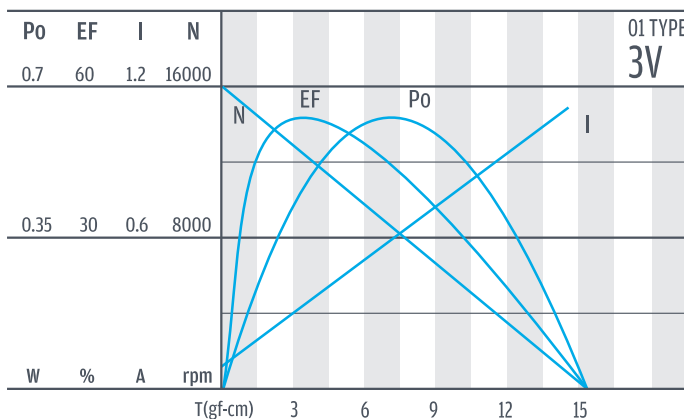
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio		1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298				
3V	定格扭力 Rated torque (gf-cm)	15	25	40	75	100	120	155	230	275	350				
	定格轉速 Rated speed (rpm)	1400	720	480	230	180	135	100	70	59	46				
6V	定格扭力 Rated torque (gf-cm)	24	40	60	115	150	200	235	345	410	520				
	定格轉速 Rated speed (rpm)	1450	770	510	245	195	145	110	75	63	50				
軸心迴轉方向 Rotation direction		CW	CCW			CW				CCW					

### 馬達單體型式/ Motor Data

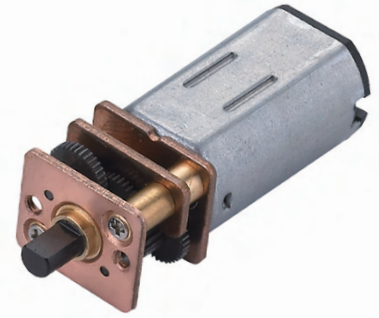
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
3	2	14000	≤0.25	16000	≤0.08	0.287	5.5
6	3	14900	≤0.17	18000	≤0.05	0.46	5.5

### 馬達單體特性/ Motor Characteristics

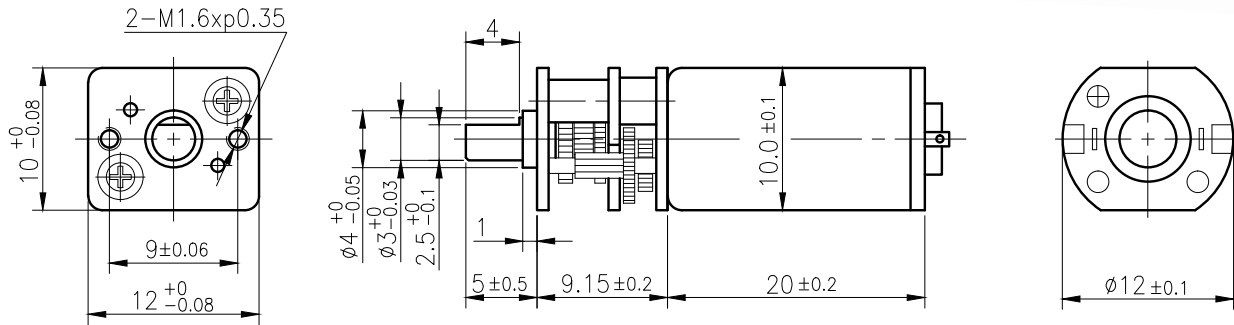


# RA-12WGM

## 03 & 04 TYPE



### 外形尺寸/ Appearance Size



unit:mm

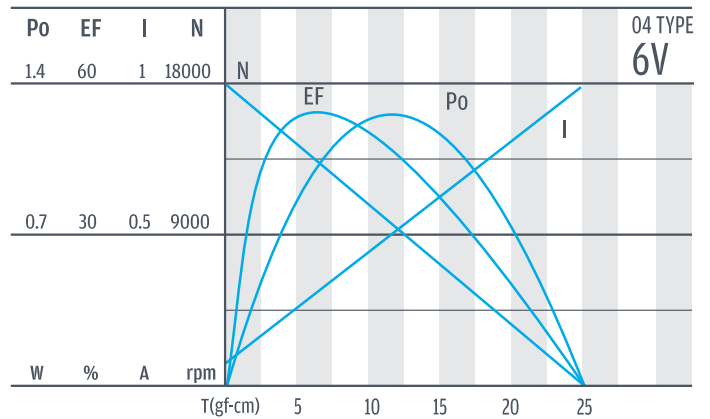
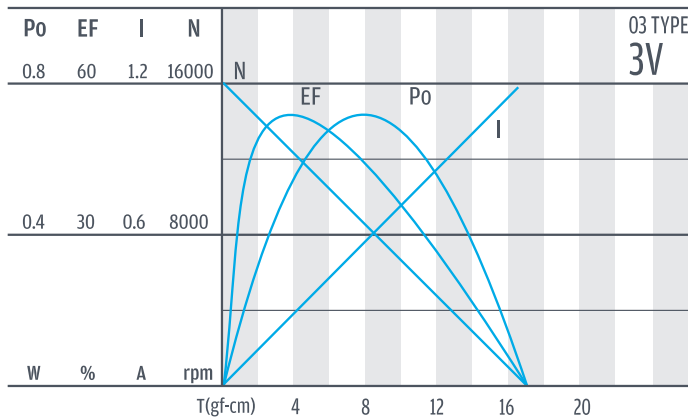
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298
3V	減速比 Reduction ratio	1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298
	定格扭力 Rated torque (gf-cm)	24	40	60	115	150	200	235	345	415	525
6V	定格轉速 Rated speed (rpm)	1300	700	460	225	175	132	100	68	57	45
	定格扭力 Rated torque (gf-cm)	30	55	80	155	200	270	300	460	530	700
軸心迴轉方向 Rotation direction		CW	CCW			CW			CCW		

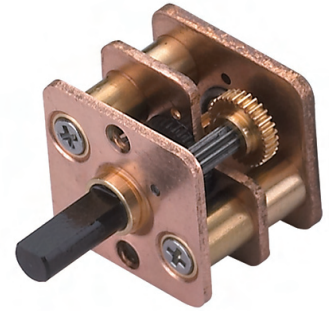
### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
3	3	13500	≤0.31	16000	≤0.09	0.41	7.5
6	4	15000	≤0.25	18000	≤0.065	0.61	7.5

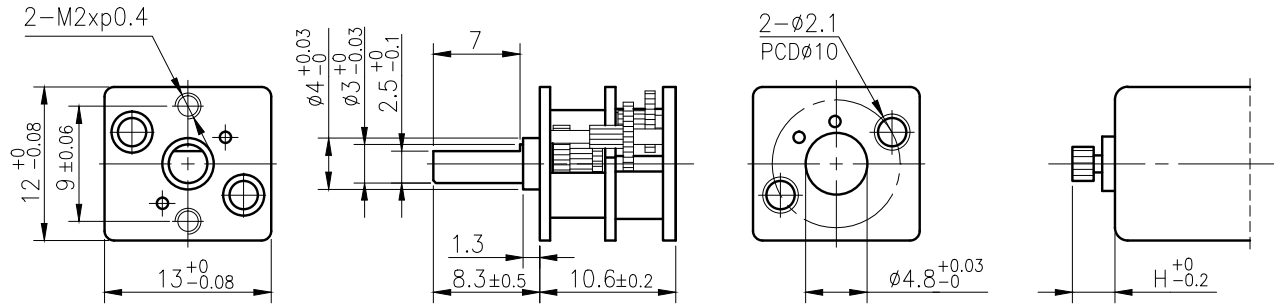
### 馬達單體特性/ Motor Characteristics



# RA-13W



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
---	滑動軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.06 mm	≤ 0.2 mm	≤ 1.5°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.15	14	20°	ø 1.49	1/10, 1/34, 1/105, 1/360
0.15	16	20°	ø 1.49	1/21, 1/59, 1/75, 1/203, 1/257, 1/294
0.15	18	20°	ø 1.49	1/146

## 標準減速比型式 / Gearboxes Specifications

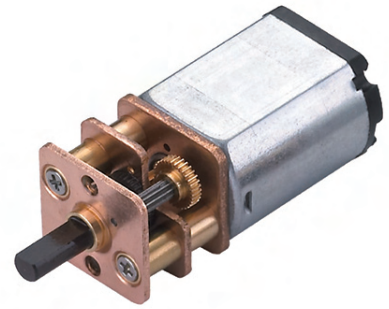
減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.3	0.5	0.5	0.8	0.8	1	1	1	1
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	0.9	1.5	1.5	2.4	2.4	3	3	3	3
效率 Efficiency	81%	73%	73%	66%	66%	66%	59%	59%	59%	59%	59%
高度 Height (H)	3.4	2.4	2.4	3.4	3.4	3.4	2.4	2.4	2.4	2.4	2.4
重量 Weight (g)	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

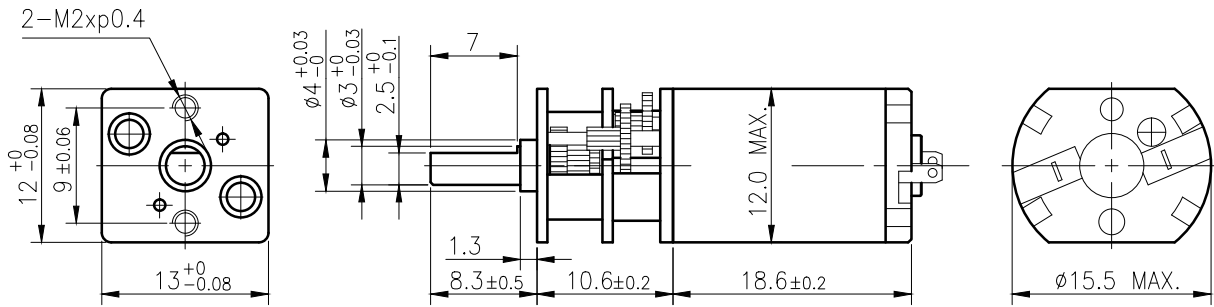
# RA-13WGM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360
6V 定格扭力 Rated torque (gf-cm)	30	60	100	155	200	270	340	470	600	690	840
6V 定格轉速 Rated speed (rpm)	950	445	270	160	125	91	65	47	37	32	26
12V 定格扭力 Rated torque (gf-cm)	35	70	110	175	220	310	380	530	680	780	950
12V 定格轉速 Rated speed (rpm)	870	400	255	145	116	83	59	43	34	29	24
軸心迴轉方向 Rotation direction	CW	CCW			CW				CCW		

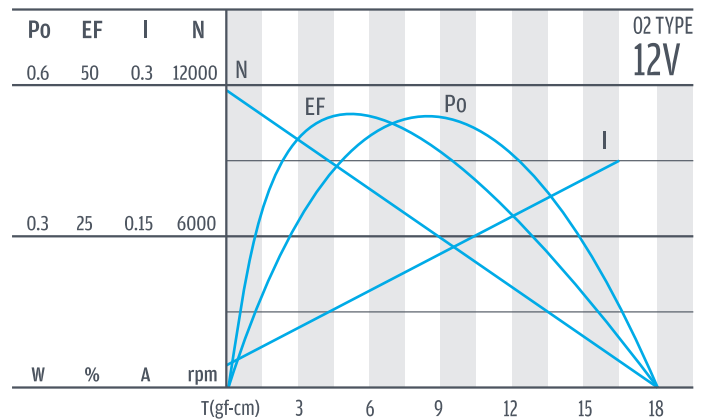
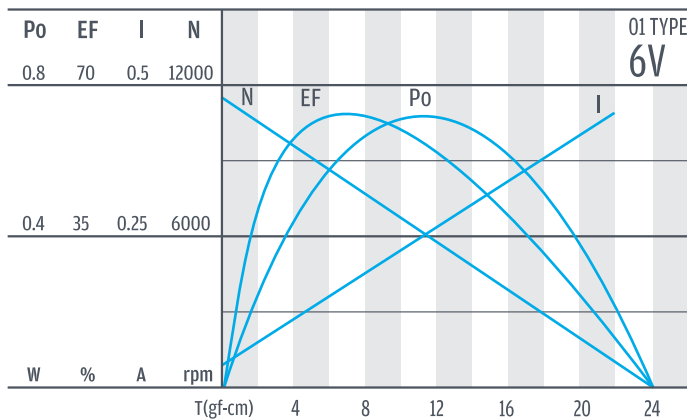
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
6	4	9600	≤0.14	11500	≤0.05	0.39	10
12	4.5	8750	≤0.1	11700	≤0.03	0.4	10

PG

### 馬達單體特性/ Motor Characteristics

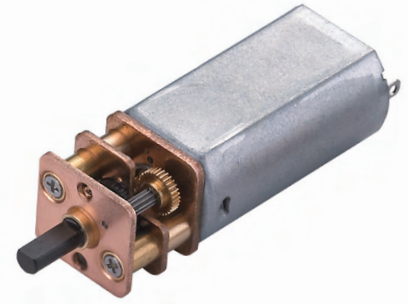


Encoder

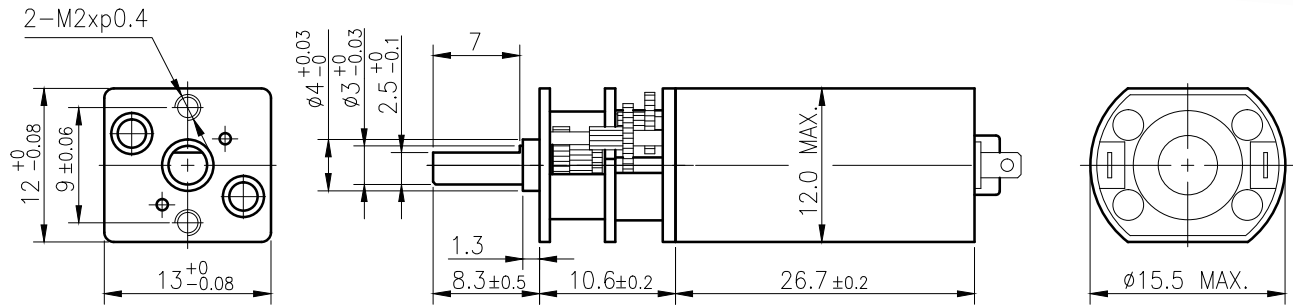
Driver

# RA-13WGM

## 03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

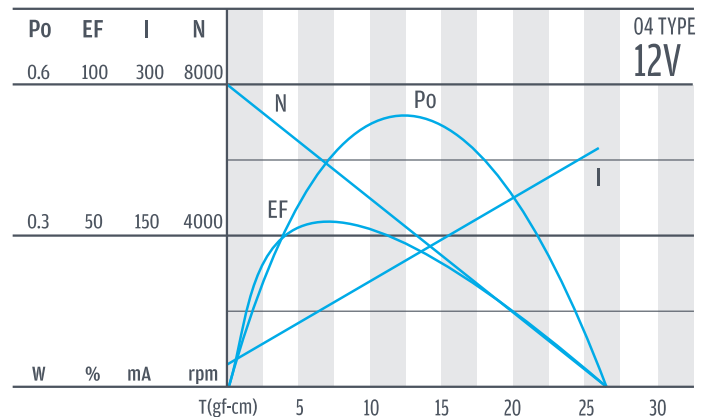
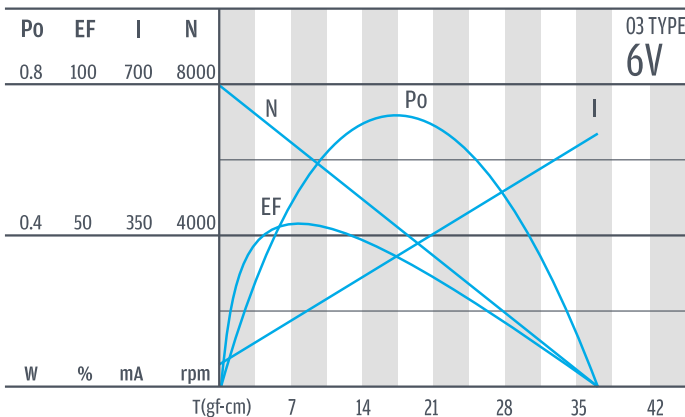
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360				
6V	定格扭力 Rated torque (gf-cm)	55	110	180	285	365	510	635	880	1000	1000	1000				
	定格轉速 Rated speed (rpm)	650	300	190	110	86	62	44	32	25	23	19				
12V	定格扭力 Rated torque (gf-cm)	45	90	150	235	300	420	520	730	920	1000	1000				
	定格轉速 Rated speed (rpm)	620	290	180	100	82	59	42	30	24	21	18				
	軸心迴轉方向 Rotation direction	CW	CCW			CW				CCW						

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
6	7.4	6550	≤ 0.16	8000	≤ 0.065	0.5	18
12	6.1	6200	≤ 0.085	8000	≤ 0.05	0.394	18

馬達單體特性/ Motor Characteristics



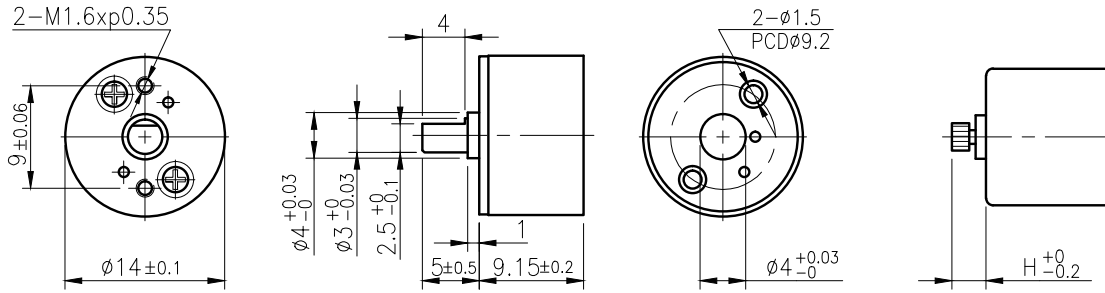
IG

# RA-14



Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
塑膠 Plastic	滑動軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.06 mm	≤ 0.2 mm	≤ 15°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.15	12	20°	Ø 0.99	1/29, 1/235, 1/298
0.15	13	20°	Ø 0.99	1/10, 1/102
0.15	16	20°	Ø 0.99	1/19, 1/60, 1/76, 1/134, 1/197

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.3	0.5	0.5	0.8	0.8	1	1	1
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	0.9	1.5	1.5	2.4	2.4	3	3	3
效率 Efficiency	81%	73%	73%	66%	66%	66%	59%	59%	59%	59%
高度 Height (H)	2.5	2.1	2.1	2.5	2.5	2.5	2.1	2.1	2.1	2.1
重量 Weight (g)	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7

Encoder

Driver

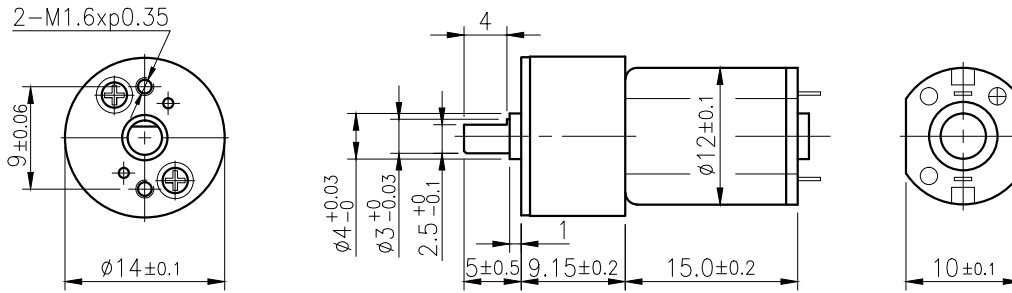
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RA-14GM

## 01 & 02 TYPE



外形尺寸/ Appearance Size



unit:mm

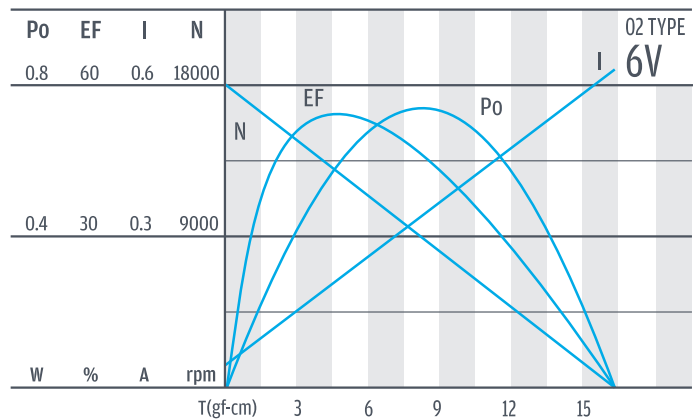
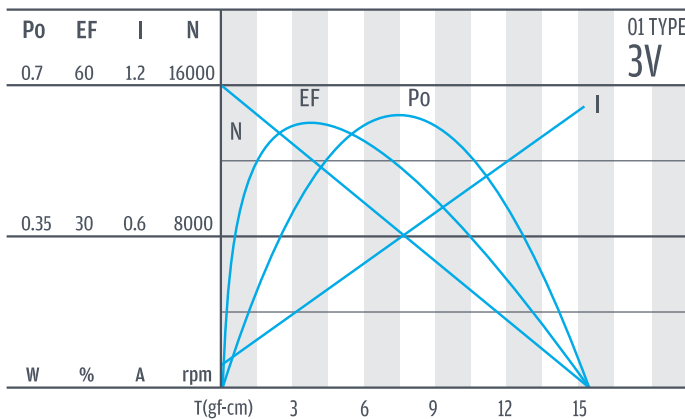
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio		1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298				
3V	定格扭力 Rated torque (gf-cm)	15	25	40	75	100	120	155	230	275	350				
	定格轉速 Rated speed (rpm)	1400	720	480	230	180	135	100	70	59	46				
6V	定格扭力 Rated torque (gf-cm)	24	40	60	115	150	200	235	345	410	520				
	定格轉速 Rated speed (rpm)	1450	770	510	245	195	145	110	75	63	50				
軸心迴轉方向 Rotation direction		CW	CCW			CW				CCW					

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
3	2	14000	≤ 0.25	16000	≤ 0.08	0.287	5.5
6	3	14900	≤ 0.17	18000	≤ 0.05	0.46	5.5

馬達單體特性/ Motor Characteristics



IG

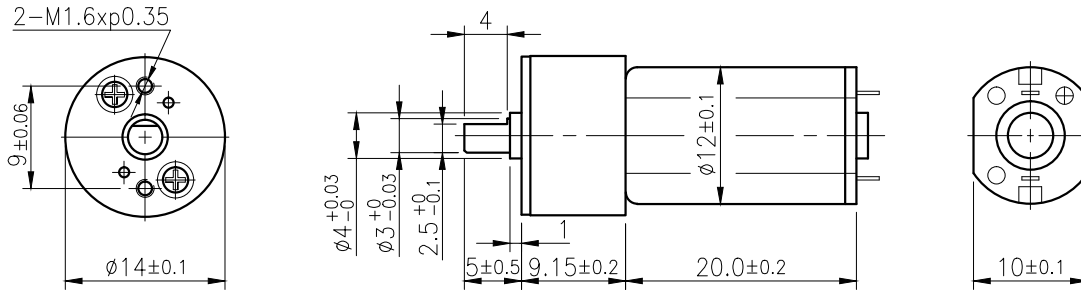
# RA-14GM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/10	1/19	1/29	1/60	1/76	1/102	1/134	1/197	1/235	1/298							
3V 定格扭力 Rated torque (gf-cm)	24	40	60	115	150	200	235	345	415	525							
3V 定格轉速 Rated speed (rpm)	1300	700	460	225	175	132	100	68	57	45							
6V 定格扭力 Rated torque (gf-cm)	30	55	80	155	200	270	300	460	530	700							
6V 定格轉速 Rated speed (rpm)	1500	780	510	250	195	145	112	76	64	50							
軸心迴轉方向 Rotation direction	CW	CCW			CW				CCW								

WG

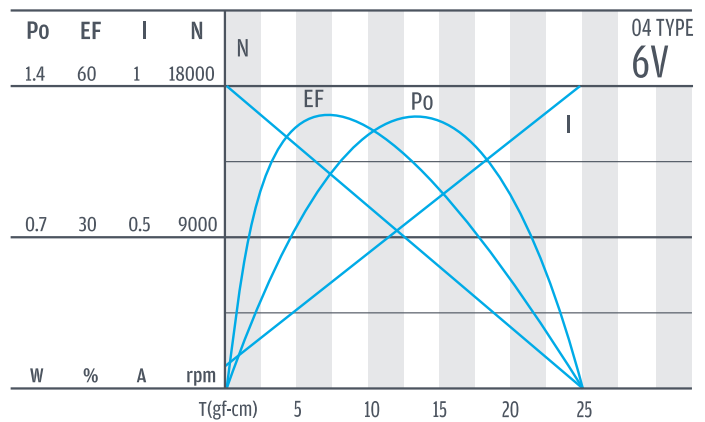
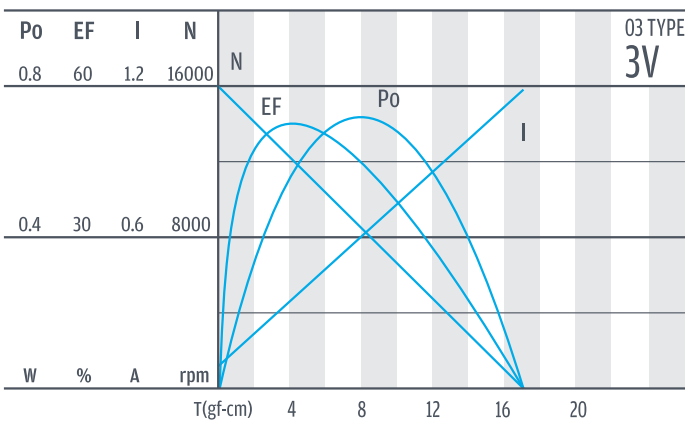
PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
3	3	13500	≤ 0.31	16000	≤ 0.09	0.41	7.5
6	4	15000	≤ 0.25	18000	≤ 0.065	0.61	7.5

Encoder

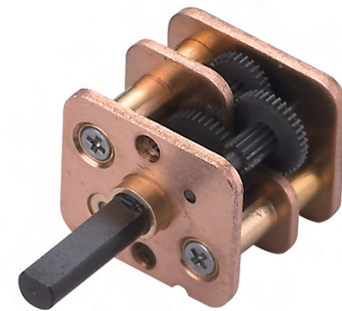
### 馬達單體特性/ Motor Characteristics



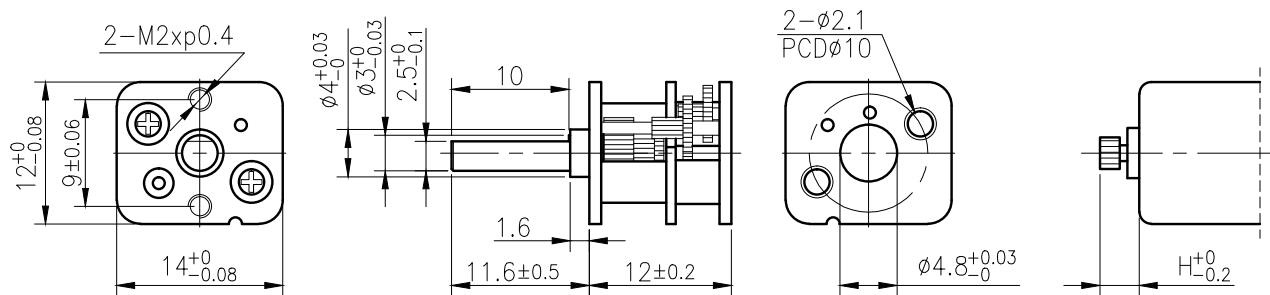
Driver



# RA-14W



外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
---	滑動軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.06 mm	≤ 0.2 mm	≤ 1.5°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.15	15	20°	∅ 1.49	1/123, 1/209
0.15	17	20°	∅ 1.49	1/6, 1/36, 1/62

## 標準減速比型式 / Gearboxes Specifications

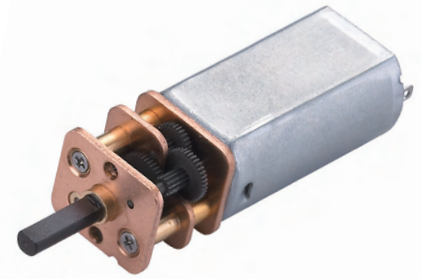
減速比 Reduction ratio	1/6	1/36	1/62	1/123	1/209									
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.5	0.8	1									
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	1.5	2.4	3									
效率 Efficiency	81%	66%	66%	59%	59%									
高度 Height (H)	4.1	4.1	4.1	2.9	2.9									
重量 Weight (g)	6.2	6.2	6.2	6.2	6.2									

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

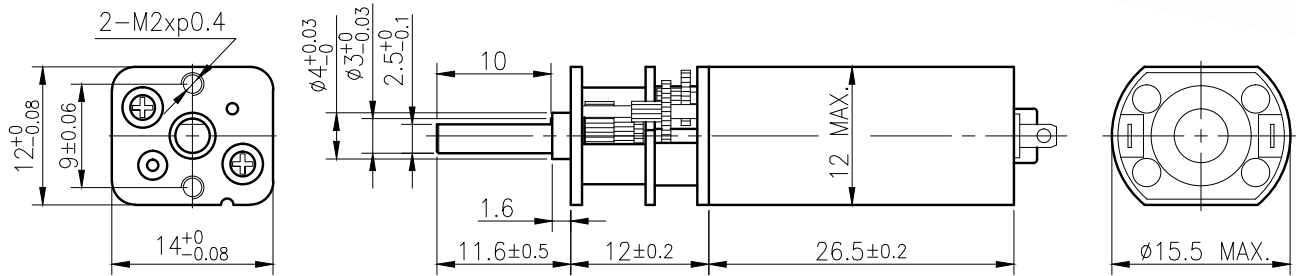
# RA-14WGM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/6	1/36	1/62	1/123	1/209						
12V	定格扭力 Rated torque (gf-cm)	30	140	240	440	750							
	定格轉速 Rated speed (rpm)	1000	170	100	50	29							
24V	定格扭力 Rated torque (gf-cm)	40	210	360	650	1000							
	定格轉速 Rated speed (rpm)	1800	300	175	89	53							
軸心迴轉方向 Rotation direction			CW		CCW								

RB

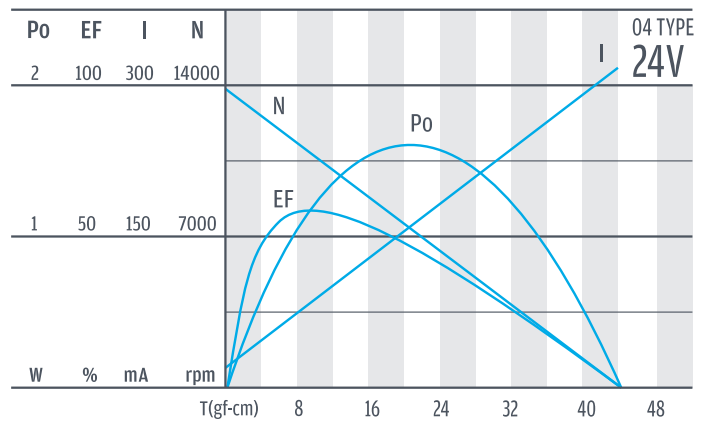
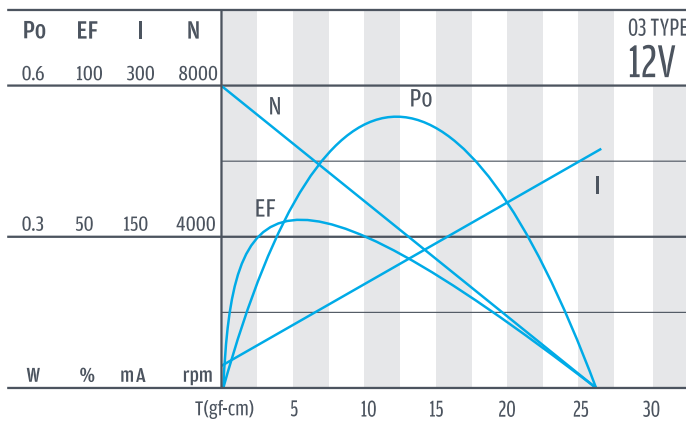
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	6.1	6200	≤0.085	8000	≤0.05	0.394	18
24	9	11000	≤0.09	13500	≤0.05	1.026	18

PG

### 馬達單體特性/ Motor Characteristics



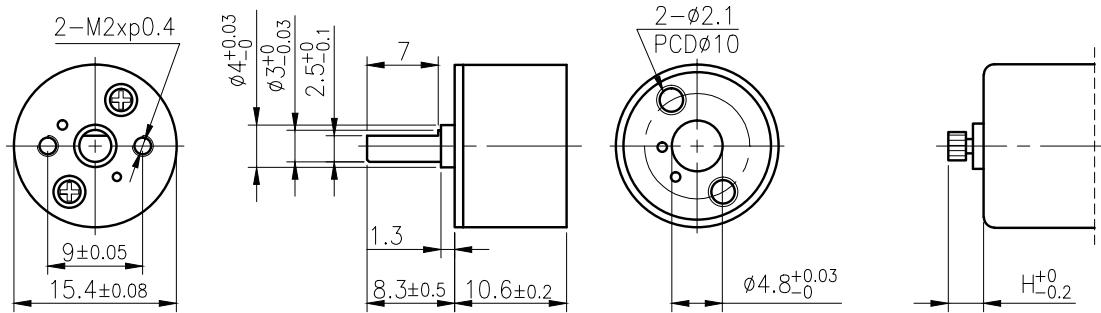
Encoder

Driver

# RA-15



## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
塑膠 Plastic	滑動軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.06 mm	≤ 0.2 mm	≤ 1.5°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.15	14	20°	∅ 1.49	1/10, 1/34, 1/105, 1/360
0.15	16	20°	∅ 1.49	1/21, 1/59, 1/75, 1/203, 1/257, 1/294
0.15	18	20°	∅ 1.49	1/146

## 標準減速比型式 / Gearboxes Specifications

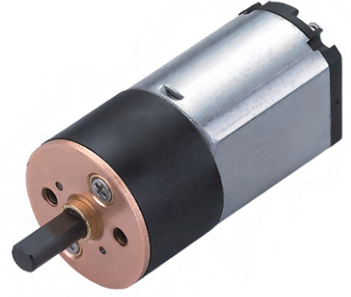
減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360						
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.3	0.5	0.5	0.8	0.8	1	1	1	1						
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	0.9	1.5	1.5	2.4	2.4	3	3	3	3						
效率 Efficiency	81%	73%	73%	66%	66%	66%	59%	59%	59%	59%	59%						
高度 Height (H)	3.4	2.4	2.4	3.4	3.4	3.4	2.4	2.4	2.4	2.4	2.4						
重量 Weight (g)	6	6	6	6	6	6	6	6	6	6	6						

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

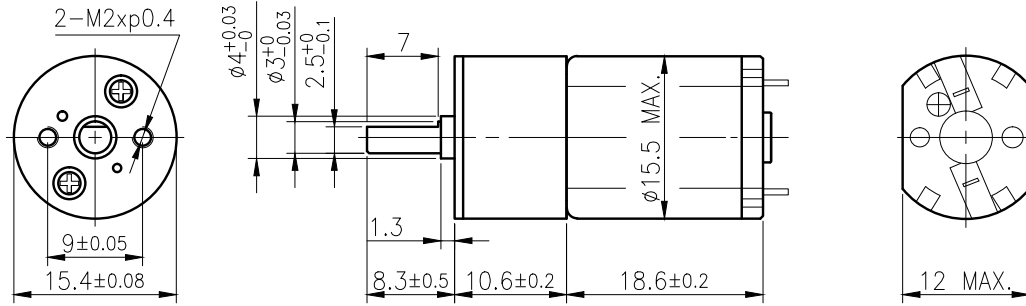
# RA-15GM

## 01 & 02 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360			
6V														
定格扭力 Rated torque (gf-cm)	30	60	100	155	200	270	340	470	600	690	840			
定格轉速 Rated speed (rpm)	950	445	270	160	125	91	65	47	37	32	26			
12V														
定格扭力 Rated torque (gf-cm)	35	70	110	175	220	310	380	530	680	780	950			
定格轉速 Rated speed (rpm)	870	400	255	145	116	83	59	43	34	29	24			
軸心迴轉方向 Rotation direction	CW	CCW				CW				CCW				

RB

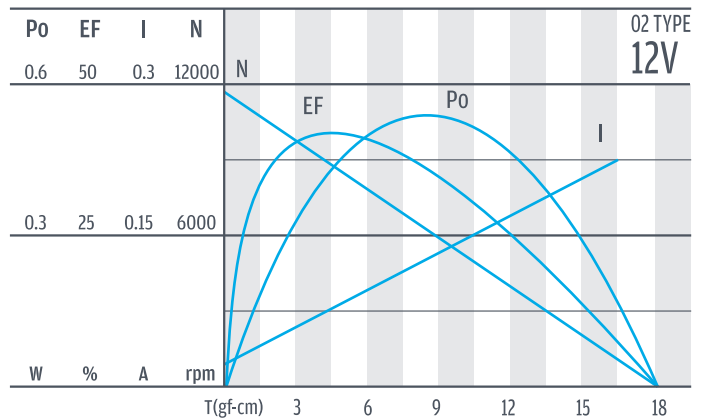
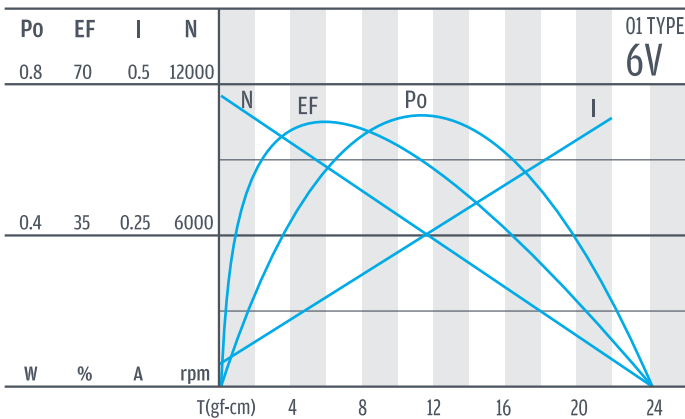
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
6	4	9600	≤ 0.14	11500	≤ 0.05	0.39	10
12	4.5	8750	≤ 0.1	11700	≤ 0.03	0.4	10

PG

### 馬達單體特性/ Motor Characteristics



Encoder

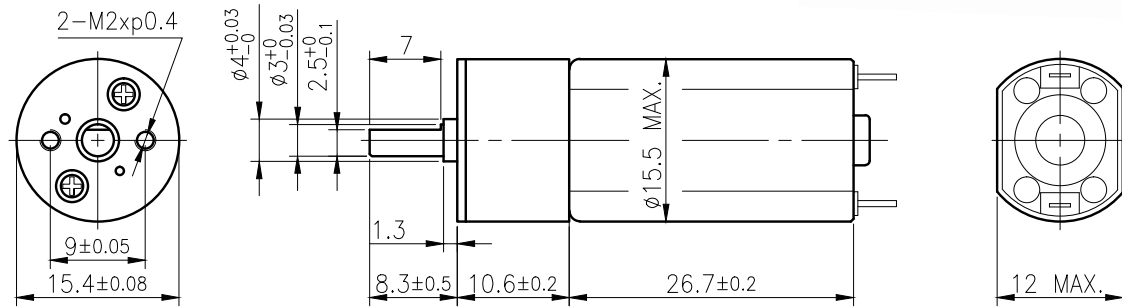
Driver

# RA-15GM

## 03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

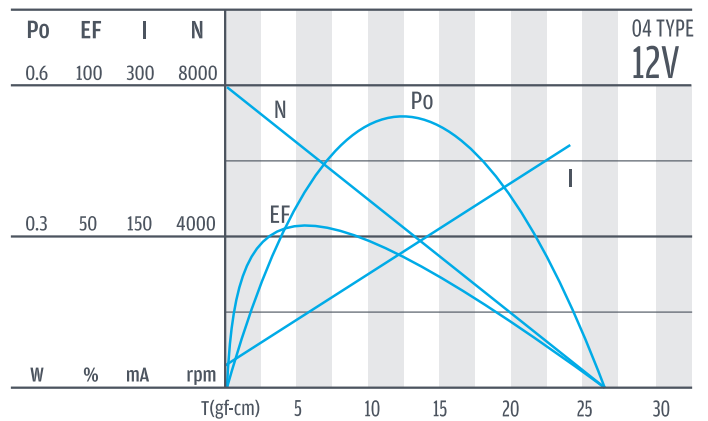
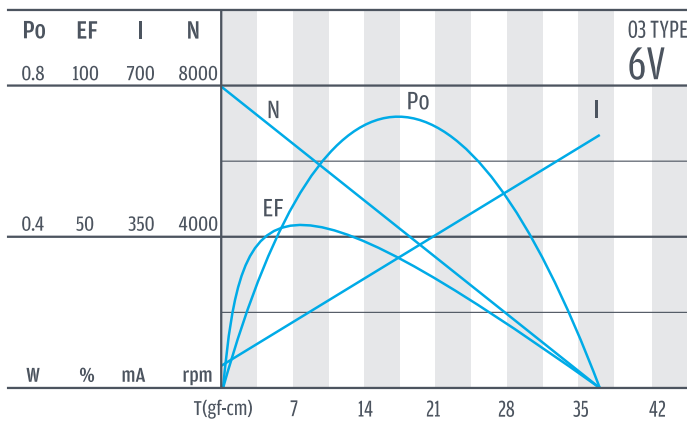
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360				
6V	定格扭力 Rated torque (gf-cm)	55	110	180	285	365	510	635	880	1000	1000	1000				
	定格轉速 Rated speed (rpm)	650	300	190	110	86	62	44	32	25	23	19				
12V	定格扭力 Rated torque (gf-cm)	45	90	150	235	300	420	520	730	920	1000	1000				
	定格轉速 Rated speed (rpm)	620	290	180	100	82	59	42	30	24	21	18				
	軸心迴轉方向 Rotation direction	CW	CCW			CW				CCW						

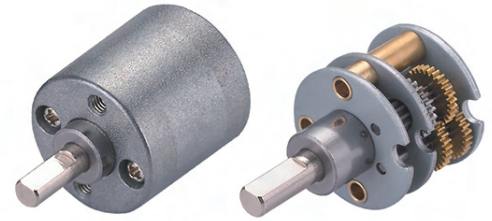
馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
6	7.4	6550	≤ 0.16	8000	≤ 0.065	0.5	18
12	6.1	6200	≤ 0.085	8000	≤ 0.05	0.394	18

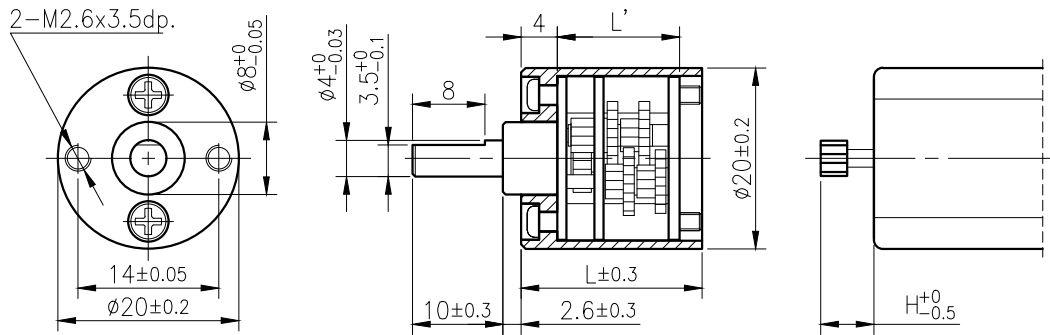
馬達單體特性/ Motor Characteristics



# RA-18



## 外形尺寸 & 馬達齒銜尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 1.5°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.25	12	20°	∅ 1.98	1/10, 1/13, 1/29, 1/67, 1/80, 1/99, 1/150, 1/225 1/350, 1/430, 1/549, 1/689, 1/794, 1/866
0.25	14	20°	∅ 1.98	1/18, 1/42, 1/52, 1/120, 1/179, 1/275

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/10	1/13	1/18	1/29	1/42	1/52	1/67	1/80	1/99	1/120	1/150	1/179	1/225	1/275	1/350	1/430	1/549	1/689	1/794	1/866
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.4	0.4	0.6	0.6	1	1	1	1.2	1.2	1.5	1.5	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	1.2	1.2	1.8	1.8	3	3	3	3.6	3.6	4.5	4.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
效率 Efficiency	73%	73%	65%	65%	55%	55%	55%	50%	50%	50%	50%	45%	45%	45%	45%	40%	40%	40%	40%	40%
長度 Length (L')	10	10	13.5	13.5	13.5	13.5	15.3	15.3	15.3	15.3	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8
長度 Length (L)	16.5	16.5	20	20	20	20	21.8	21.8	21.8	21.8	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3
高度 Height (H)	5.2	5.2	7.4	7.4	5.2	5.2	5.2	5.2	5.2	5.2	7.4	7.4	7.4	7.4	5.2	5.2	5.2	5.2	5.2	5.2
重量 Weight (g)	24	24	27.5	27.5	27.5	27.5	27.5	29	29	29	29	32	32	32	32	32	32	32	32	32

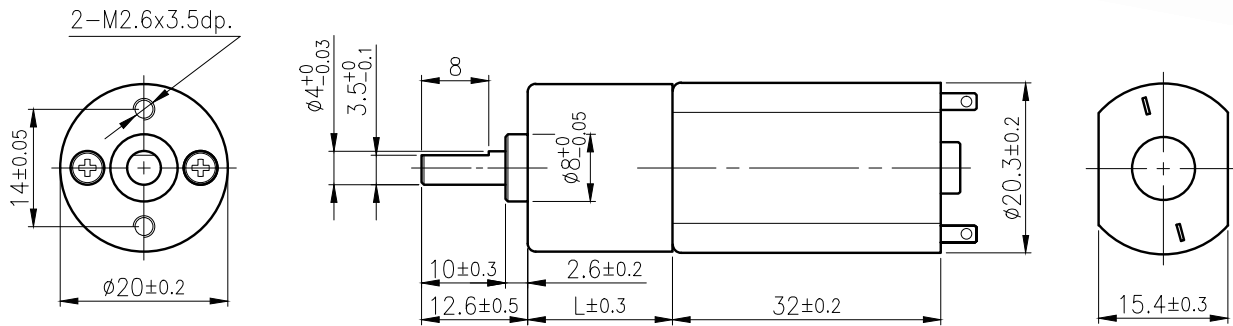
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RA-20GM

## 03 & 04 TYPE



### 外形尺寸/ Appearance Size



unit:mm

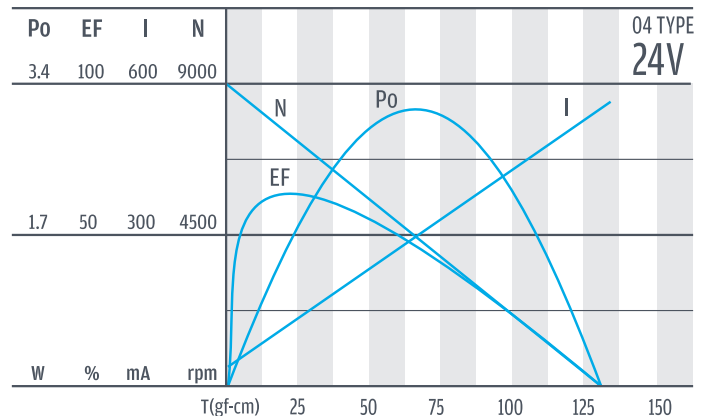
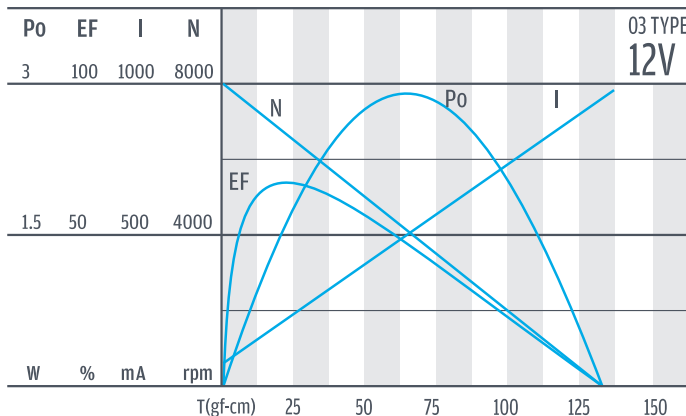
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/10	1/13	1/18	1/29	1/42	1/52	1/67	1/80	1/99	1/120	1/150	1/179	1/225	1/275	1/350	1/430	1/549	1/689	1/794	1/866
12V 定格扭力 Rated torque (kgf-cm)	0.16	0.20	0.25	0.41	0.51	0.62	0.81	0.86	1.10	1.30	1.50	1.77	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
12V 定格轉速 Rated speed (rpm)	655	525	364	226	159	129	100	84	67	56	45	37	31	25.5	20.5	16.6	13.1	10.5	9.3	8.6
24V 定格扭力 Rated torque (kgf-cm)	0.16	0.20	0.25	0.41	0.51	0.62	0.81	0.86	1.10	1.30	1.50	1.77	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
24V 定格轉速 Rated speed (rpm)	720	580	403	250	176	142	110	93	74	62	49.5	41	34	28.5	23	18.5	15	12	10.5	9.2
軸心迴轉方向 Rotation direction	CW		CCW		CW			CCW			CW			CCW						
長度 Length (L)	16.5			20			21.8			25.3										

### 馬達單體型式/ Motor Data

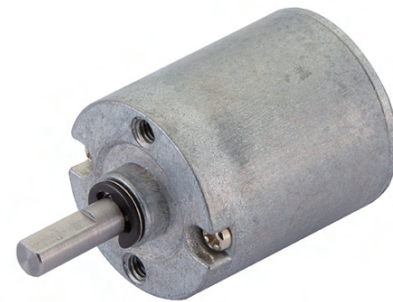
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	22	6700	≤0.2	8000	≤0.05	1.5	32
24	22	7400	≤0.11	9000	≤0.03	1.7	32

### 馬達單體特性/ Motor Characteristics



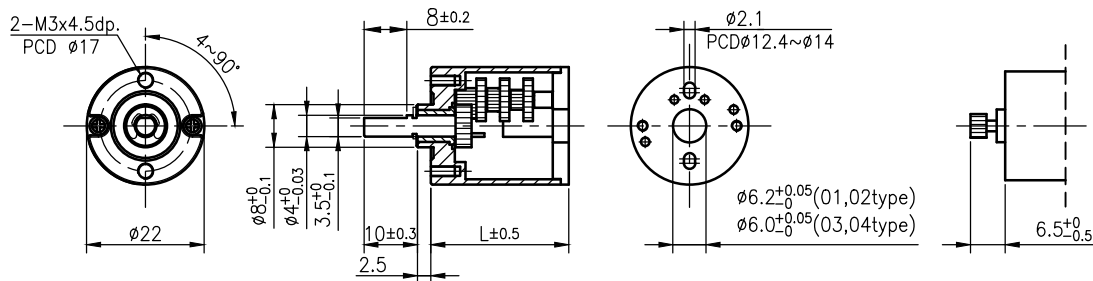
IG

# RA-22



Right Angle

## 外形尺寸 & 馬達齒銜尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 0.4$ kgf	$\leq 0.2$ kgf	$\leq 2$ kgf	$\leq 0.05$ mm	$\leq 0.3$ mm	$\leq 1.5^\circ$

RB

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.3	12	$20^\circ$	$\phi 1.98$	全種通用 Practicable

WG

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/9	1/19	1/24	1/39	1/51	1/70	1/82	1/106	1/112	1/137	1/145	1/180	1/233	1/286	1/392	1/507
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.4	0.6	0.6	1	1	1	1.2	1.2	1.2	1.5	1.5	1.8	1.8	1.8	1.8	1.8
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	1.2	1.8	1.8	3	3	3	3.6	3.6	3.6	4.5	4.5	5.4	5.4	5.4	5.4	5.4
效率 Efficiency	73%	65%	65%	55%	55%	55%	50%	50%	50%	50%	50%	45%	45%	45%	45%	45%
長度 Length (L)	17	19.2	19.2	21.4	21.4	21.4	23.6	23.6	23.6	23.6	23.6	25.8	25.8	25.8	25.8	25.8
重量 Weight (g)	24.6	25.4	25.4	26.2	26.2	26.2	27	27	27	27	27	27.7	27.7	27.7	27.7	27.7

PG

Encoder

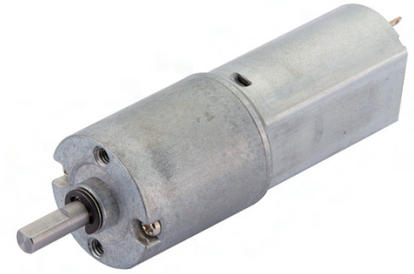
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

Driver

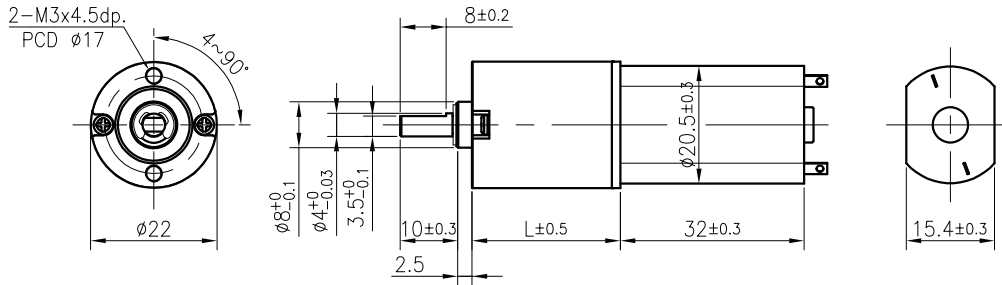


# RA-22GM

## 01 & 02 TYPE



外形尺寸/ Appearance Size



unit:mm

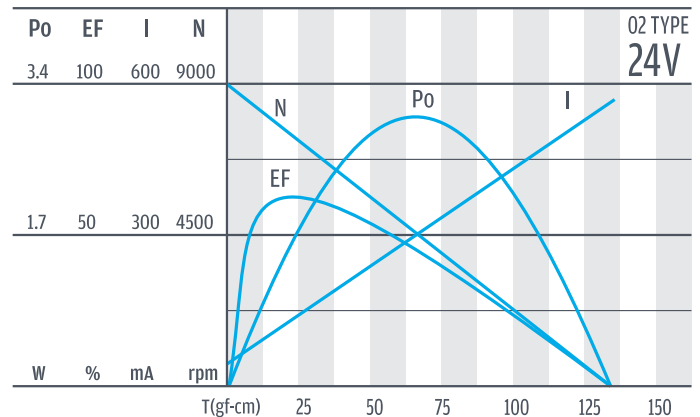
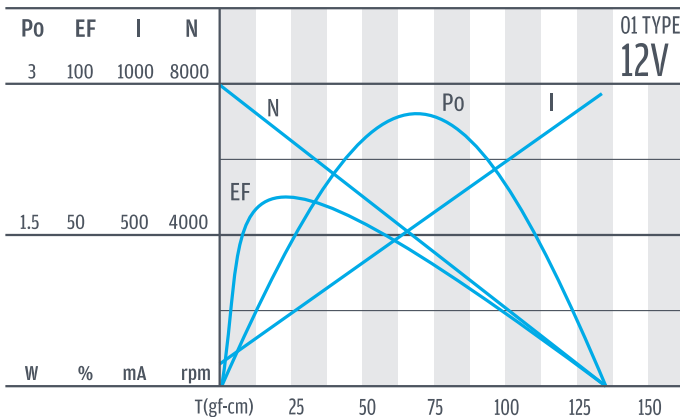
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/9	1/19	1/24	1/39	1/51	1/70	1/82	1/106	1/112	1/137	1/145	1/180	1/233	1/286	1/392	1/507			
12V	定格扭力 Rated torque (gf-cm)	145	265	345	470	615	840	895	1165	1200	1500	1500	1780	1800	1800	1800	1800			
	定格轉速 Rated speed (rpm)	740	350	270	170	130	95	80	65	60	50	45	37	27	22	16	12			
24V	定格扭力 Rated torque (gf-cm)	145	265	345	470	615	840	895	1165	1200	1500	1500	1780	1800	1800	1800	1800			
	定格轉速 Rated speed (rpm)	815	390	300	185	145	105	90	70	65	55	50	40	30	24	17	13			
	軸心迴轉方向 Rotation direction	CCW	CW			CCW				CW					CCW					
	長度 Length (L)	17	19.2			21.4				23.6					25.8					

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	22	6700	≤ 200	8000	≤ 70	1.5	32
24	22	7400	≤ 110	9000	≤ 40	1.7	32

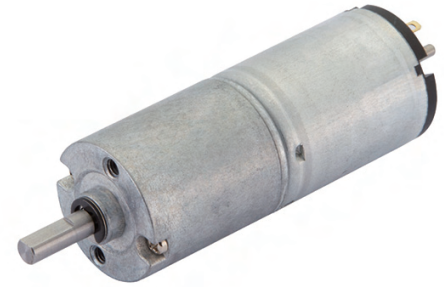
馬達單體特性/ Motor Characteristics



IG

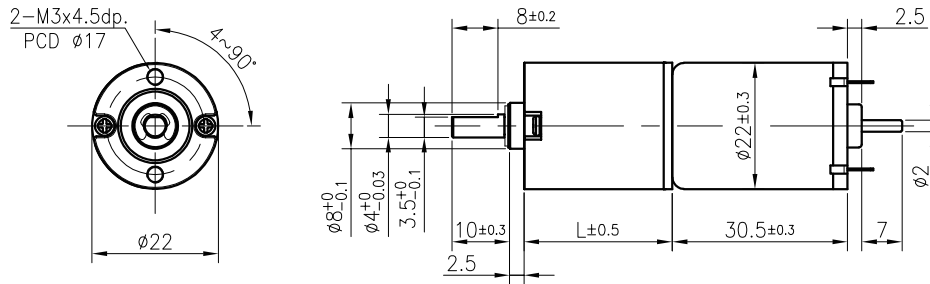
# RA-22GM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/9	1/19	1/24	1/39	1/51	1/70	1/82	1/106	1/112	1/137	1/145	1/180	1/233	1/286	1/392	1/507
12V	減速比 Reduction ratio	1/9	1/19	1/24	1/39	1/51	1/70	1/82	1/106	1/112	1/137	1/145	1/180	1/233	1/286	1/392	1/507
	定格扭力 Rated torque (gf-cm)	200	375	490	665	865	1000	1200	1200	1200	1500	1800	1800	1800	1800	1800	1800
24V	定格轉速 Rated speed (rpm)	530	255	195	120	95	69	58	44	42	34	32	25	19	15	11	8
	定格扭力 Rated torque (gf-cm)	240	450	585	795	1000	1000	1200	1200	1200	1500	1500	1800	1800	1800	1800	1800
軸心迴轉方向 Rotation direction		ccw	cw		ccw				cw					ccw			
長度 Length (L)		17	19.2		21.4				23.6					25.8			

RB

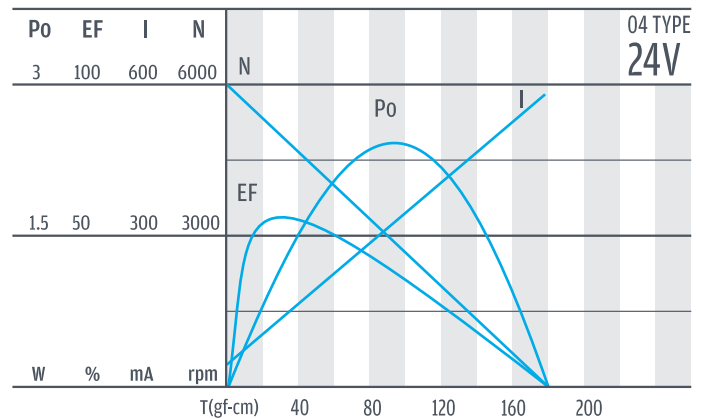
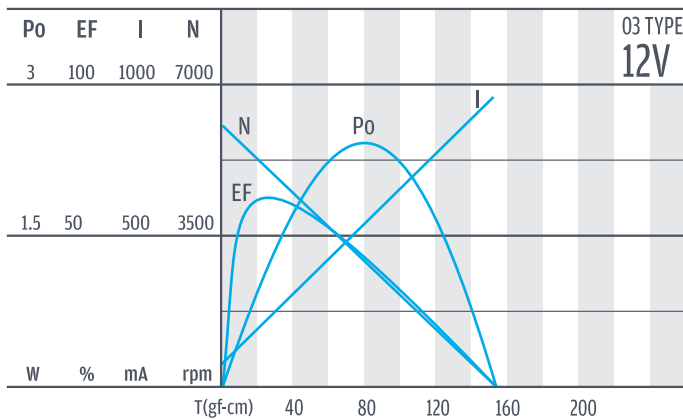
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	31	4790	$\leq 240$	6000	$\leq 80$	1.52	43
24	37	4710	$< 145$	6000	$< 55$	1.79	43

PG

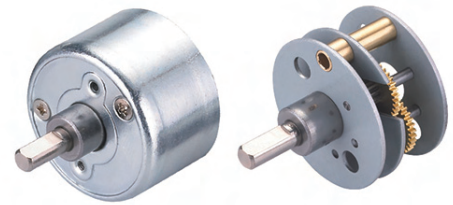
### 馬達單體特性/ Motor Characteristics



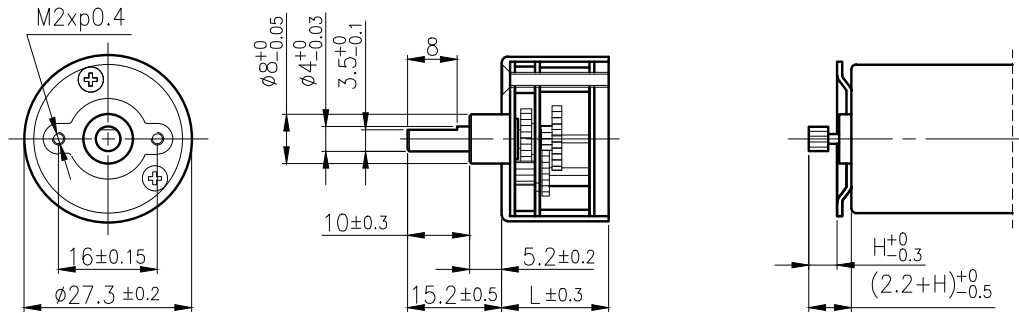
Encoder

Driver

# RA-25



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.3 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 2°

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.3	12	20°	Ø 1.98	1/6, 1/21, 1/100, 1/170, 1/200, 1/250 1/320, 1/400, 1/500, 1/700, 1/800
0.3	11	20°	Ø 1.98	1/10, 1/15, 1/30, 1/44, 1/60, 1/77, 1/112 1/150, 1/360, 1/900, 1/1153

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/6	1/10	1/15	1/21	1/30	1/44	1/60	1/77	1/100	1/112	1/150	1/170	1/200	1/250	1/320	1/360	1/400	1/500	1/700	1/800	1/900	1/1153
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.3	0.3	0.4	0.4	0.6	0.6	0.8	0.8	1	1	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.9	0.9	1.2	1.2	1.8	1.8	2.4	2.4	3	3	3.6	3.6	3.6	3.6	3.6	4.5	4.5	4.5	4.5	4.5	4.5	4.5
效率 Efficiency	81%	81%	73%	73%	65%	65%	65%	65%	65%	65%	50%	50%	50%	50%	50%	40%	40%	40%	40%	40%	40%	40%
長度 Length (L)	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
高度 Height (H)	5.7	5.7	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
重量 Weight (g)	33	33	34	34	35	35	35	35	36	36	36	36	36	36	36	37	37	37	37	37	37	37

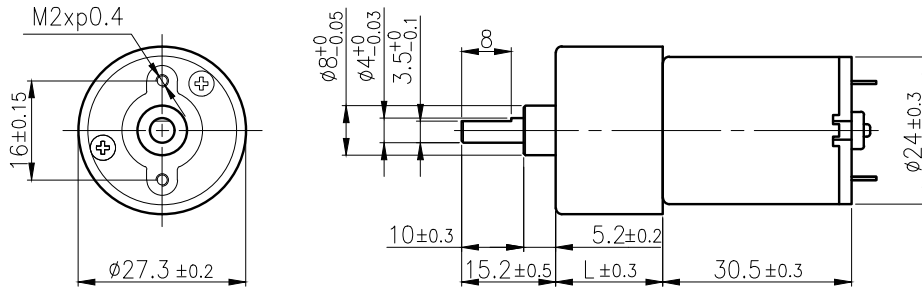
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RA-27GM

## 02 & 03 TYPE



### 外形尺寸/ Appearance Size



unit:mm

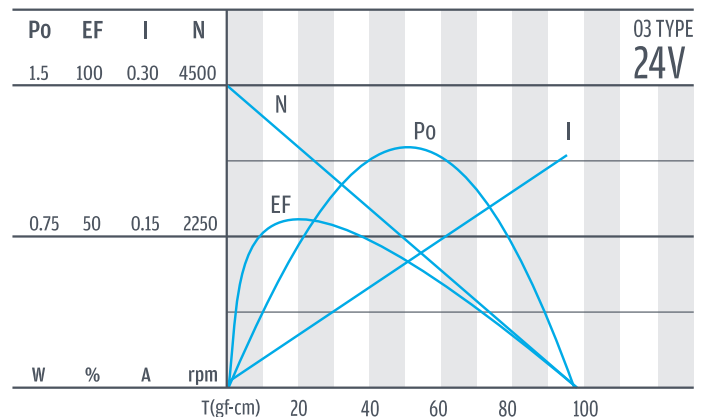
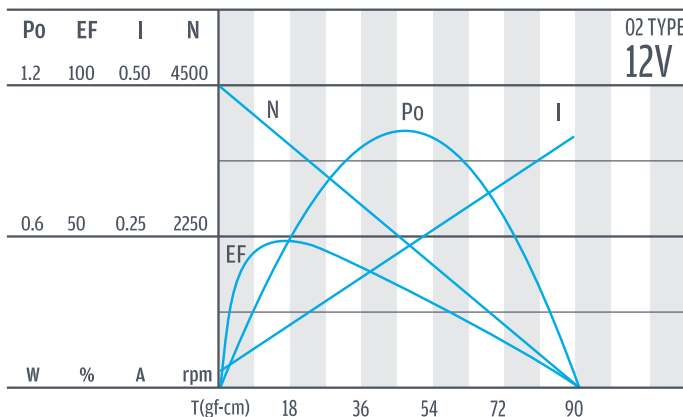
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/10	1/15	1/21	1/30	1/44	1/60	1/77	1/100	1/112	1/150	1/170	1/200	1/250	1/320	1/360	1/500	1/700	1/800	1/900	1/1153
12V	定格扭力 Rated torque (kgf-cm)	0.16	0.22	0.32	0.40	0.55	0.78	0.8	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5
	定格轉速 Rated speed (rpm)	340	230	160	110	80	59	46	36	33	21.5	20	18	14.5	12	10.5	7.5	5.7	5.1	4.5	3.7
24V	定格扭力 Rated torque (kgf-cm)	0.16	0.21	0.30	0.38	0.52	0.73	0.8	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5
	定格轉速 Rated speed (rpm)	325	220	153	105	77	56	44	34	33	22	20	18	14.5	11.5	10.5	7.5	5.6	5.0	4.5	3.6
	軸心迴轉方向 Rotation direction	CW	CCW	CW					CCW					CW							
	長度 Length (L)	17.3										19.3									

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	20.5	3560	≤0.15	4500	≤0.05	0.75	42
24	19.5	3400	≤0.065	4500	≤0.03	0.68	42

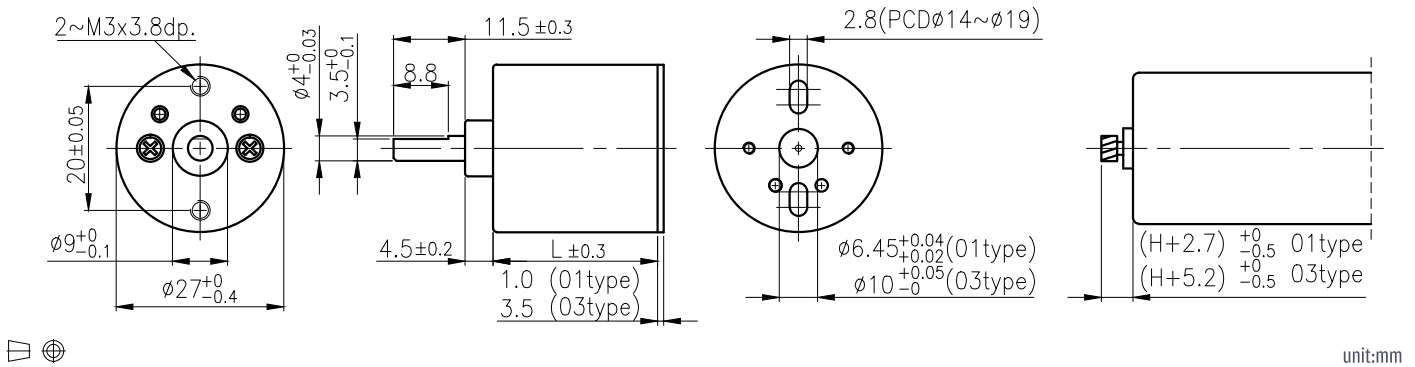
### 馬達單體特性/ Motor Characteristics



# RA-27C



## 外形尺寸 & 馬達齒鉤尺寸 / Appearance Size & Pinion Assembly Dimension



## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.5 kgf	≤ 0.4 kgf	≤ 4 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 2°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔径 (mm) Hole diameter	減速比 Reduction ratio
0.4	10	20°	18° (左, left)	∅ 1.98 ∅ 2.28	全種通用 Practicable

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/10	1/20	1/42	1/54	1/87	1/112	1/181	1/232	1/376	1/484	1/784	1/1009
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.5	0.6	1	1	1.2	1.2	1.6	1.6	2	2	2.5	2.5
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	1.5	1.8	3	3	3.6	3.6	4.8	4.8	6	6	7.5	7.5
效率 Efficiency	73%	66%	59%	59%	53%	53%	48%	48%	43%	43%	39%	39%
長度 Length (L)	14.65	14.65	19.4	19.4	19.4	19.4	24.15	24.15	24.15	24.15	26.6	26.6
高度 Height (H)	4.65	2.27	4.65	4.65	2.27	2.27	4.65	4.65	2.27	2.27	4.65	4.65
重量 Weight (g)	33	34	35	35	35	35	36	36	36	36	36	36

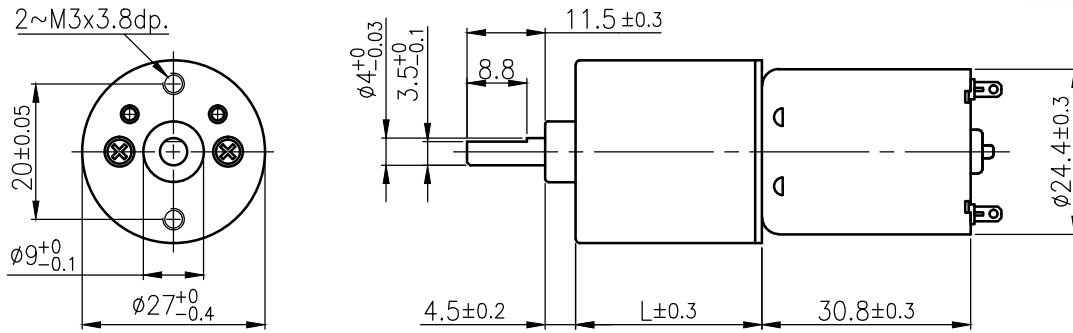
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RA-27CGM

## 01 & 02 TYPE



### 外形尺寸/ Appearance Size



unit:mm

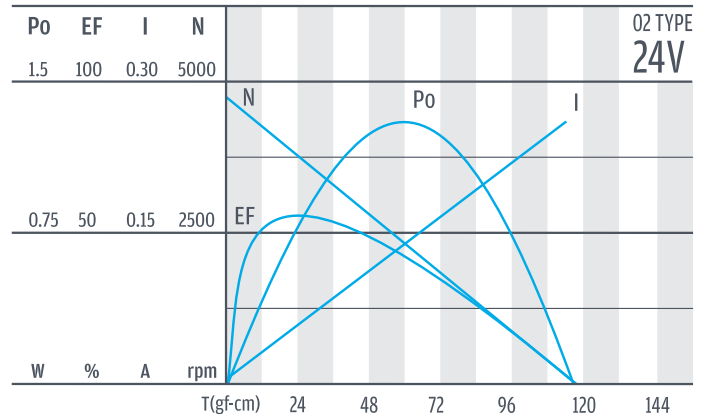
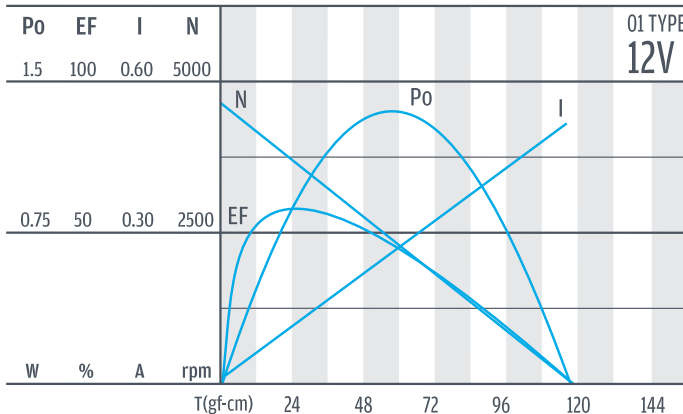
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/10	1/20	1/42	1/54	1/87	1/112	1/181	1/232	1/376	1/484	1/784	1/1009
12V	減速比 Reduction ratio												
	定格扭力 Rated torque (kgf-cm)	0.15	0.28	0.54	0.69	1	1.2	1.6	1.6	2	2	2.5	2.5
	定格轉速 Rated speed (rpm)	375	180	86	67	41	32	20.2	16.5	10.5	8	5.2	4.1
24V	減速比 Reduction ratio												
	定格扭力 Rated torque (kgf-cm)	0.16	0.31	0.59	0.75	1.1	1.2	1.6	1.6	2	2	2.5	2.5
	定格轉速 Rated speed (rpm)	365	175	84	65	40	32	21	16.8	10.6	8.5	5.3	4.1
軸心迴轉方向 Rotation direction		CW	CCW	CW		CCW		CW		CCW		CW	
長度 Length (L)		15.65		20.40			25.15			27.6			

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	22	3600	≤0.13	4500	≤0.05	0.81	50
24	24	3500	≤0.07	4500	≤0.035	0.86	50

### 馬達單體特性/ Motor Characteristics

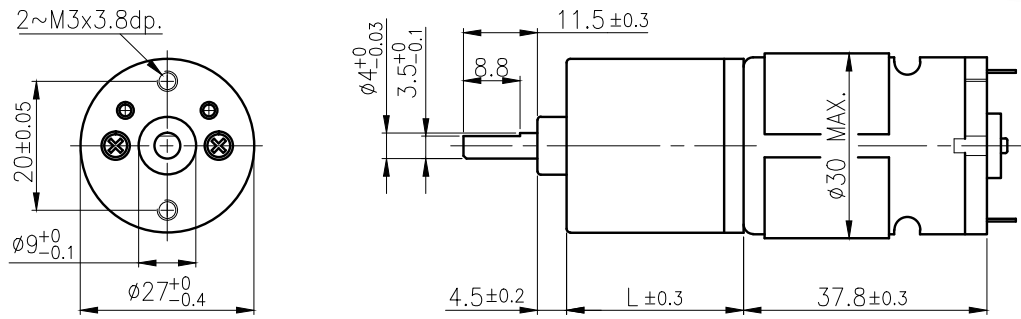


# RA-27CGM

## 03 & 04 TYPE



### 外形尺寸/ Appearance Size



unit:mm

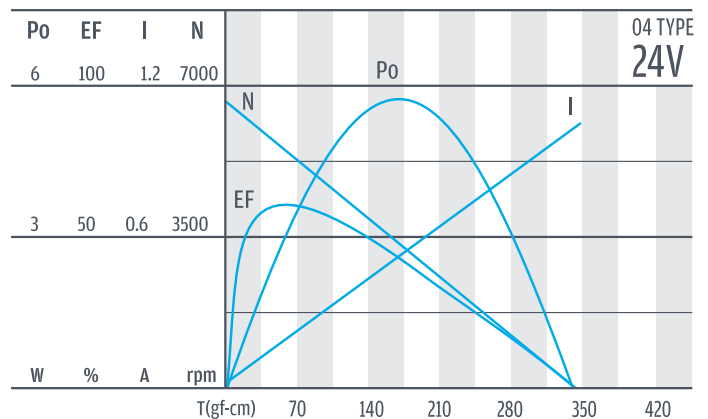
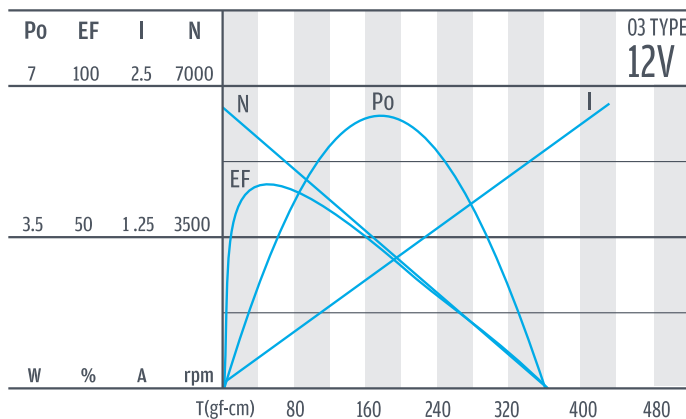
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/10	1/20	1/42	1/54	1/87	1/112	1/181	1/232	1/376	1/484	1/784	1/1009						
12V	減速比 Reduction ratio																		
	定格扭力 Rated torque (kgf-cm)	0.38	0.6	1	1	1.2	1.2	1.6	1.6	2	2	2.5	2.5						
24V	定格轉速 Rated speed (rpm)	546	284	139	110.5	69.7	55.4	34.1	27	16.8	13	8.2	6.2						
	定格扭力 Rated torque (kgf-cm)	0.41	0.6	1	1	1.2	1.2	1.6	1.6	2	2	2.5	2.5						
	定格轉速 Rated speed (rpm)	558	280	137	109	68.7	54.7	33.7	26.7	16.6	12.9	8.1	6.2						
	軸心迴轉方向 Rotation direction	CW	CCW	CW		CCW		CW		CCW		CW							
	長度 Length (L)	18.15		22.90				27.65				30.10							

### 馬達單體型式/ Motor Data

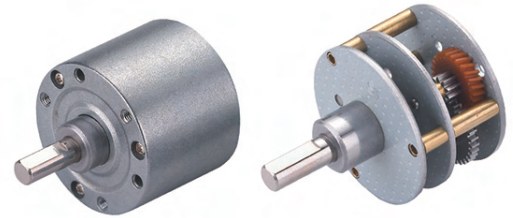
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	78	5290	≤0.53	6500	≤0.15	4.22	73
24	74	5250	≤0.25	6500	≤0.085	3.97	73

### 馬達單體特性/ Motor Characteristics



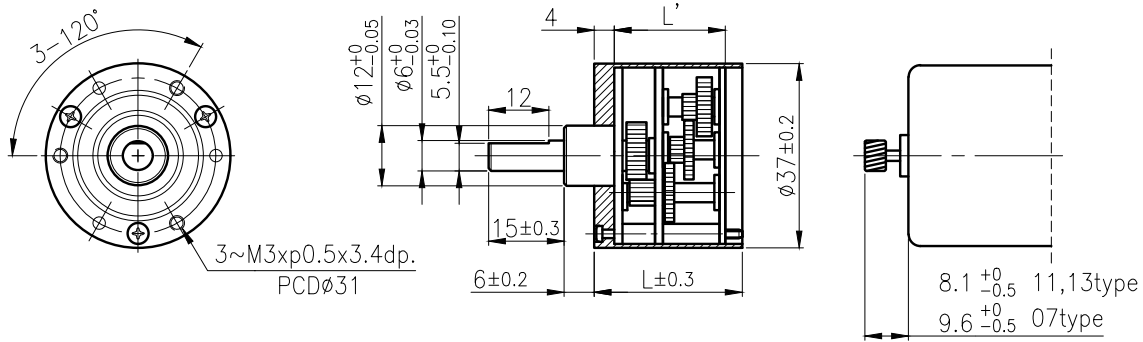
IG

# RA-35C



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 1 kgf	≤ 0.7 kgf	≤ 5 kgf	≤ 0.05 mm	≤ 0.35 mm	≤ 2°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	10	20°	— 18° (左, left)	∅ 1.98 ∅ 2.28 ∅ 2.48 ∅ 2.98 ∅ 3.16	全種通用 Practicable

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/6	1/16	1/31	1/56	1/75	1/125	1/219	1/281	1/422	1/750	1/2813						
1/19	1/38	1/63	1/94	1/156	1/234	1/312	1/469	1/938	1/1250	1/1875	1/3750						
1/21	1/47	1/69	1/104	1/169	1/250	1/375	1/563	1/1250	1/1875	1/2813	1/5625						
定額容許扭力 (kgf-cm max.) Rated tolerance torque	1	2	3	4	5	6	6	6	6	6	6						
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	6	9	12	15	18	18	18	18	18	18						
效率 Efficiency	81%	73%	66%	66%	59%	59%	53%	53%	53%	48%	43%						
長度 Length (L)	14.8	17.6	20.1	20.1	22.5	22.5	25	25	25	27.5	30						
長度 Length (L)	21.8	24.6	27.1	27.1	29.5	29.5	32	32	32	34.5	37						
重量 Weight (g)	97	103	109	109	117	117	121	121	121	128	131						

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

Driver

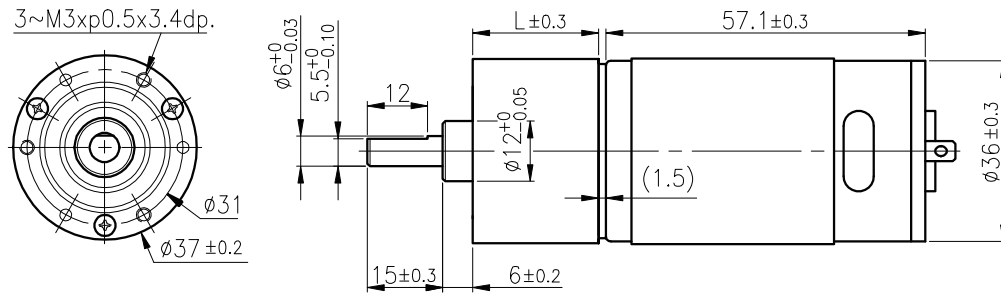


# RA-37GM

## 07 & 09 TYPE



### 外形尺寸/ Appearance Size



unit:mm

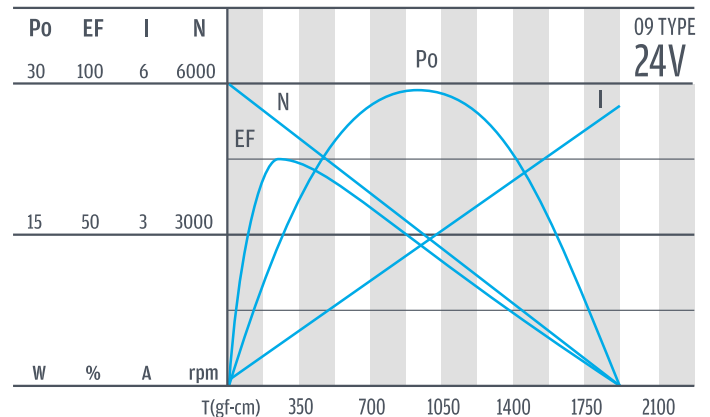
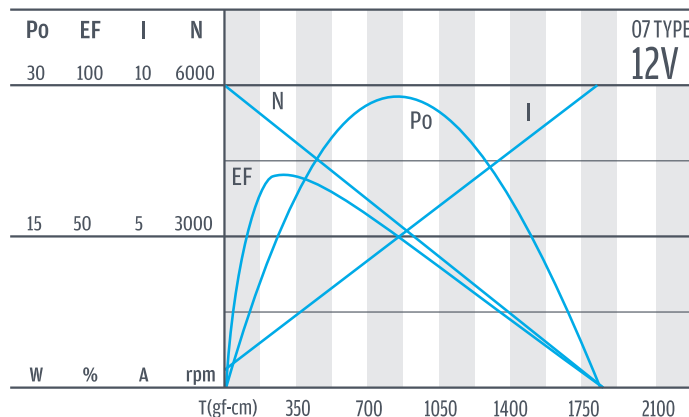
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/6	1/16	1/21	1/31	1/56	1/75	1/104	1/125	1/156	1/187	1/219	1/250	1/312	1/469	1/625	1/750	1/938	1/1875	1/3750	1/5625
12V	定格扭力 Rated torque (kgf-cm)	1	2	2	3	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	795	330	250	172	95	72	54	45	37	31	26	23	18.7	12.5	9.3	7.8	6.2	3.2	1.5	1
24V	定格扭力 Rated torque (kgf-cm)	1	2	2	3	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	805	338	260	175	97	73	55	46	38	32	26.8	23.4	18.8	12.5	9.5	7.8	6.3	3.2	1.6	1
	軸心迴轉方向 Rotation direction	CCW	CW	CCW					CW					CCW				CW			CCW
	長度 Length (L)	21.8	24.6		27.1				29.5					32				34.5			37

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤1.6	6000	≤0.25	12.80	220
24	240	5150	≤0.75	6000	≤0.13	12.70	220

### 馬達單體特性/ Motor Characteristics



IG

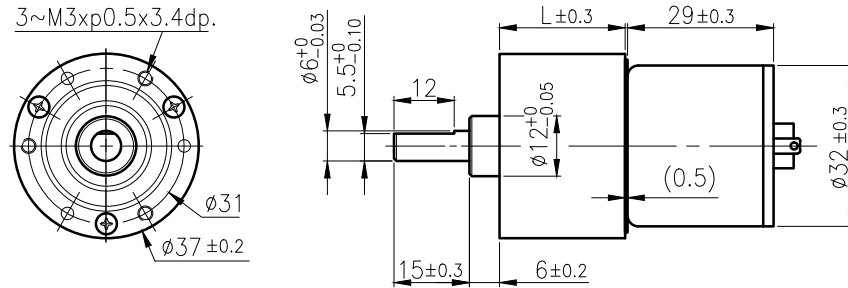
# RA-37GM

## 11 & 12 TYPE



Right Angle

### 外形尺寸 / Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

減速比 Reduction ratio	1/6	1/16	1/21	1/31	1/56	1/75	1/104	1/125	1/156	1/187	1/219	1/250	1/312	1/469	1/625	1/750	1/938	1/1875	1/3750	1/5625
12V 定格扭力 Rated torque (kgf-cm)	0.3	0.68	0.9	1.25	2.2	2.6	3.6	4.4	5.5	6	6	6	6	6	6	6	6	6	6	6
12V 定格轉速 Rated speed (rpm)	800	310	245	155	90	67	49	41	33	28	24	21.5	17.6	12.3	9.1	7.8	6.3	3.2	1.6	1
24V 定格扭力 Rated torque (kgf-cm)	0.3	0.7	0.9	1.25	2.3	2.7	3.8	4.5	5.7	6	6	6	6	6	6	6	6	6	6	6
24V 定格轉速 Rated speed (rpm)	780	308	240	150	87	65	48	40	32	27	23.5	21.5	17.5	12	9	7.8	6.2	3.2	1.6	1
軸心迴轉方向 Rotation direction	CW	CCW	CW				CCW						CW				CCW			CW
長度 Length (L)	21.8	24.6	27.1				29.5						32				34.5			37

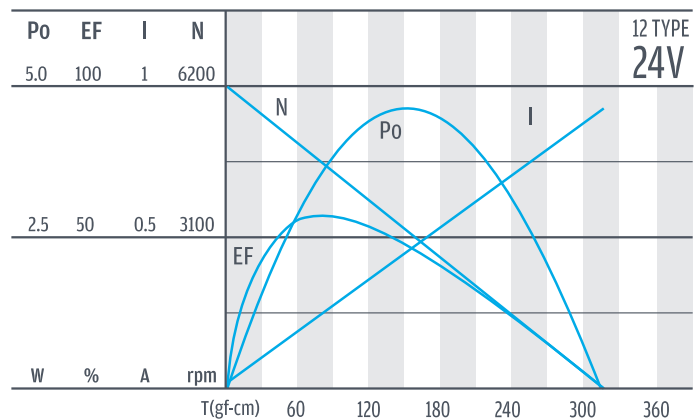
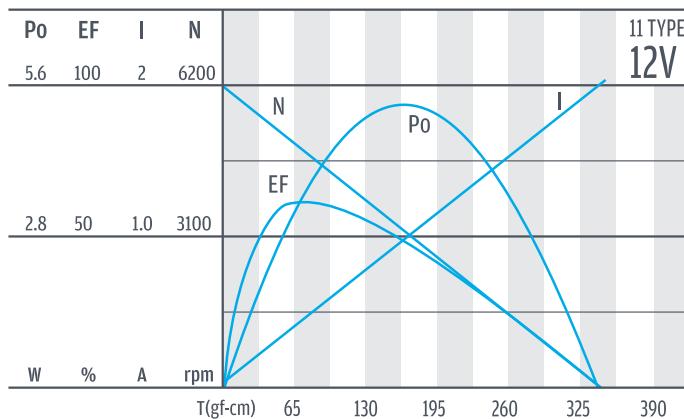
WG

PG

### 馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	60	5100	≤ 0.47	6200	≤ 0.12	3.14	75
24	62	5000	≤ 0.21	6200	≤ 0.06	3.17	75

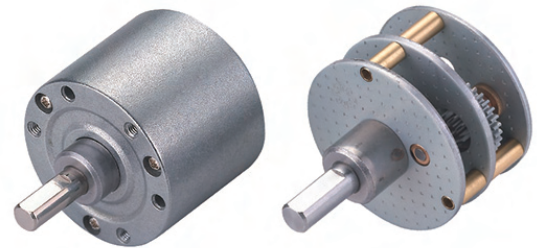
### 馬達單體特性 / Motor Characteristics



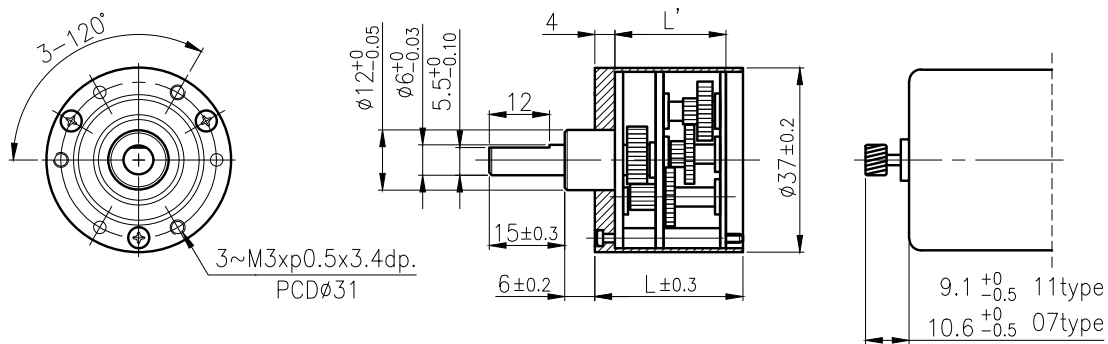
Encoder

Driver

# RA-35A



## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 1$ kgf	$\leq 0.7$ kgf	$\leq 5$ kgf	$\leq 0.05$ mm	$\leq 0.35$ mm	$\leq 2^\circ$

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	10	20°	— 18° (左, left)	$\phi 1.98$ $\phi 2.28$ $\phi 2.48$ $\phi 2.98$ $\phi 3.16$	全種通用 Practicable

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/16	1/31	1/56	1/75	1/125	1/219	1/281	1/422							
1/19	1/38	1/63	1/94	1/156	1/234	1/312	1/469								
1/21	1/47	1/69	1/104	1/169	1/250	1/375	1/563	1/625							
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	3	4	5	6	6	6	6							
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	6	9	12	15	18	18	18	18							
效率 Efficiency	73%	66%	66%	59%	59%	53%	53%	53%							
長度 Length (L)	20.6	23.1	23.1	25.5	25.5	28	28	28							
長度 Length (L)	27.1	29.5	29.5	32	32	34.5	34.5	34.5							
重量 Weight (g)	108	114	114	122	122	126	126	126							

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

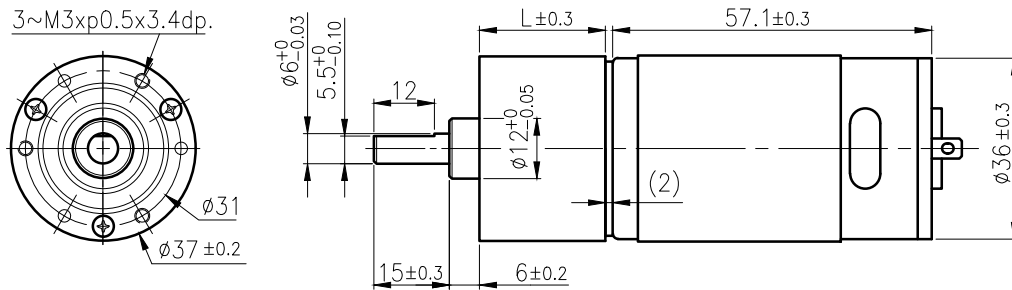
# RA-37AGM

## 07 & 09 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/16	1/21	1/31	1/56	1/75	1/104	1/125	1/156	1/187	1/219	1/250	1/281	1/312	1/375	1/422	1/469	1/563	1/625
12V	定格扭力 Rated torque (kgf-cm)	2	2	3	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	330	250	172	95	72	54	45	37	31	26	23	20.3	18.7	15.2	13.7	12.5	10.2	9.3
24V	定格扭力 Rated torque (kgf-cm)	2	2	3	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	338	260	175	97	73	55	46	38	32	26.8	23.4	23.4	18.8	15.2	13.7	12.5	10.5	9.5
	軸心迴轉方向 Rotation direction	CW		CCW		CW						CCW							
	長度 Length (L)	27.1		29.5		32						34.5							

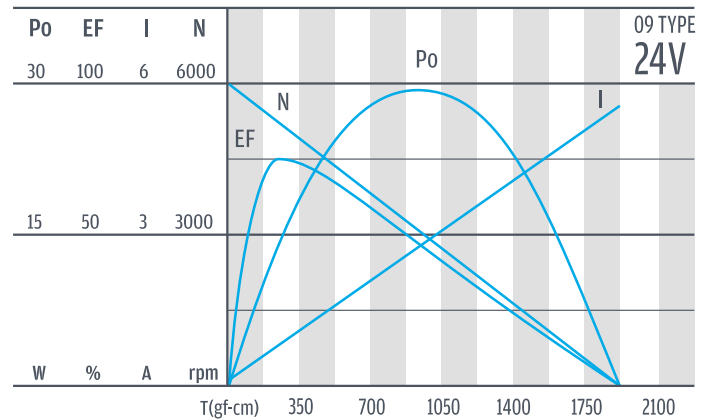
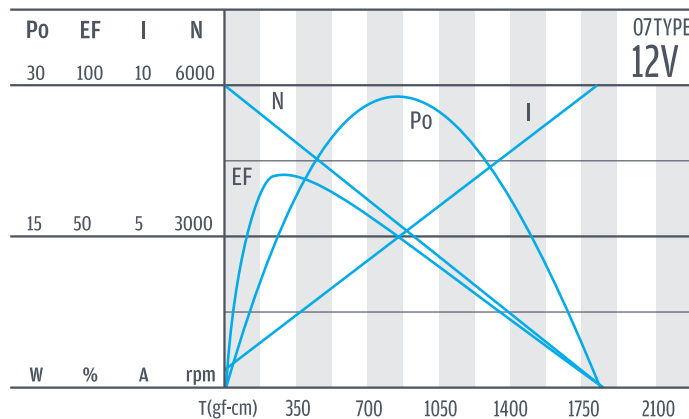
WG

PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤ 1.6	6000	≤ 0.25	12.80	220
24	240	5150	≤ 0.75	6000	≤ 0.13	12.70	220

### 馬達單體特性/ Motor Characteristics



Encoder

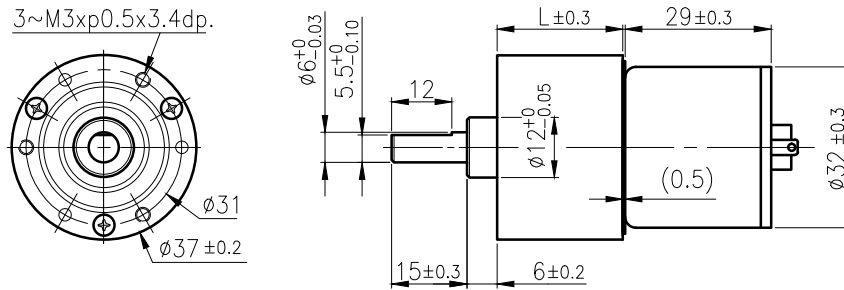
Driver

# RA-37AGM

## 11 & 12 TYPE



外形尺寸/ Appearance Size



unit:mm

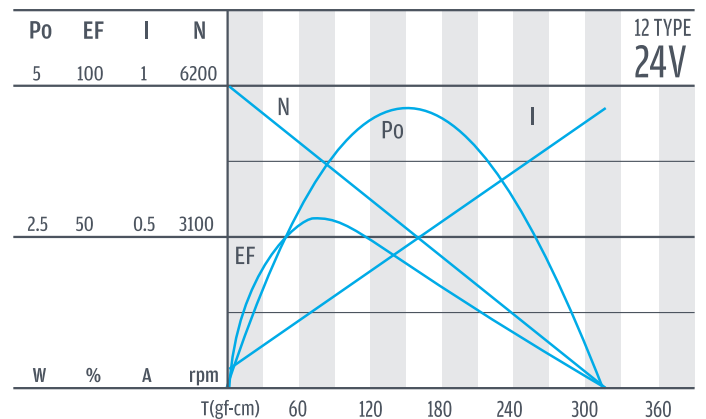
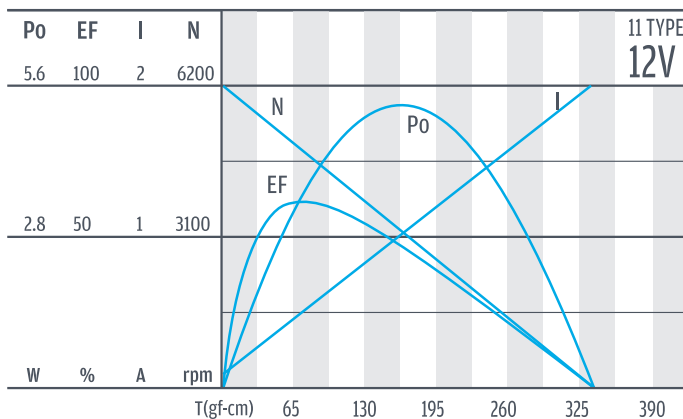
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/16	1/21	1/31	1/56	1/75	1/104	1/125	1/156	1/187	1/219	1/250	1/281	1/312	1/375	1/422	1/469	1/563	1/625
12V	定格扭力 Rated torque (kgf-cm)	0.68	0.9	1.25	2.2	2.6	3.6	4.4	5.5	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	310	245	155	90	67	49	41	33	28	24	21.5	19	17.6	14.5	13.2	12.3	10.1	9.1
24V	定格扭力 Rated torque (kgf-cm)	0.7	0.9	1.25	2.3	2.7	3.8	4.5	5.7	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	308	240	150	87	65	48	40	32	27	23.5	21.5	18.5	17.5	14.7	13.2	12	10.2	9
	軸心迴轉方向 Rotation direction	CCW			CW			CCW						CW					
	長度 Length (L)	27.1			29.5			32						34.5					

馬達單體型式/ Motor Data

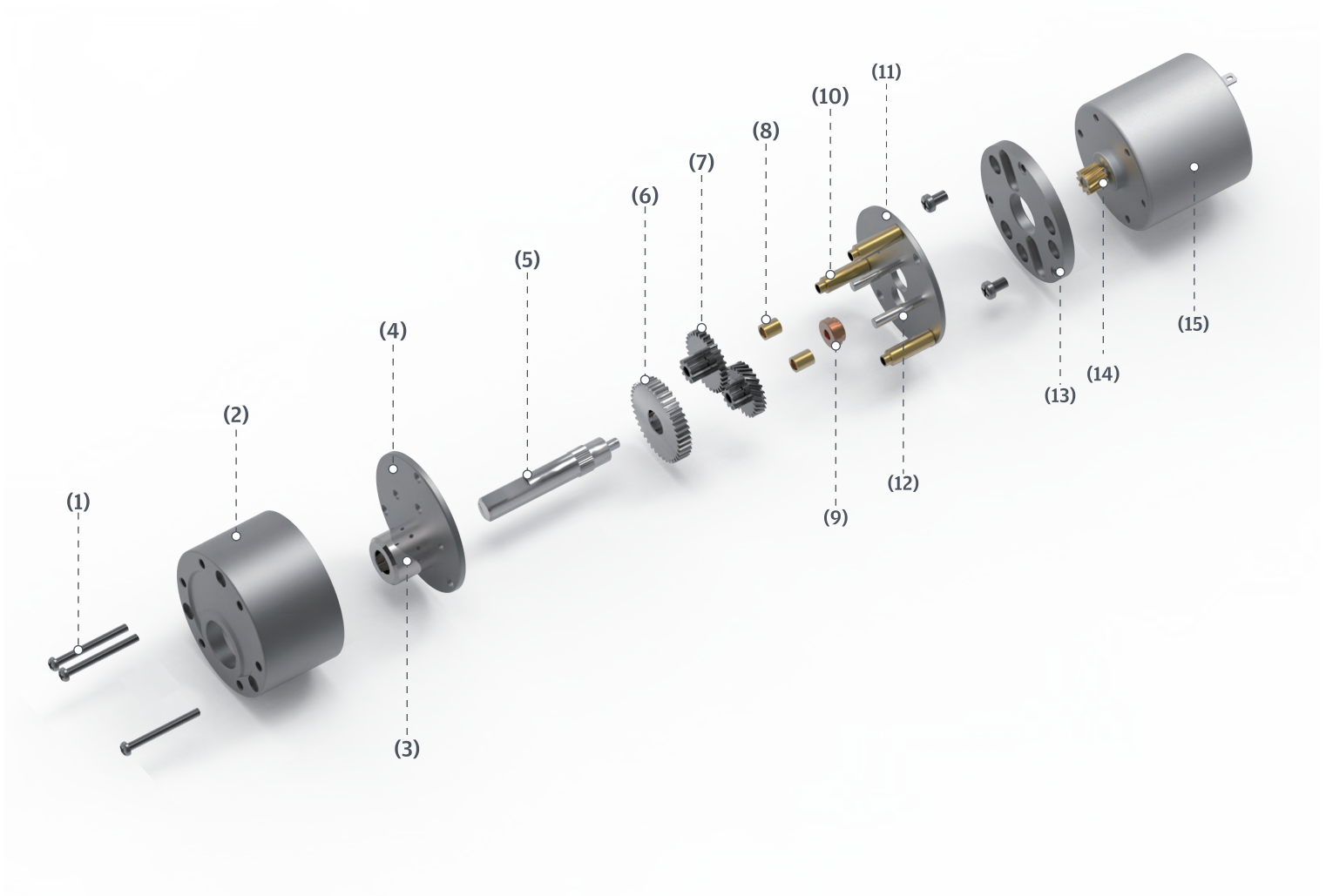
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	60	5100	≤0.47	6200	≤0.12	3.14	75
24	62	5000	≤0.21	6200	≤0.06	3.17	75

馬達單體特性/ Motor Characteristics



# 正齒齒輪箱 (偏心出軸)

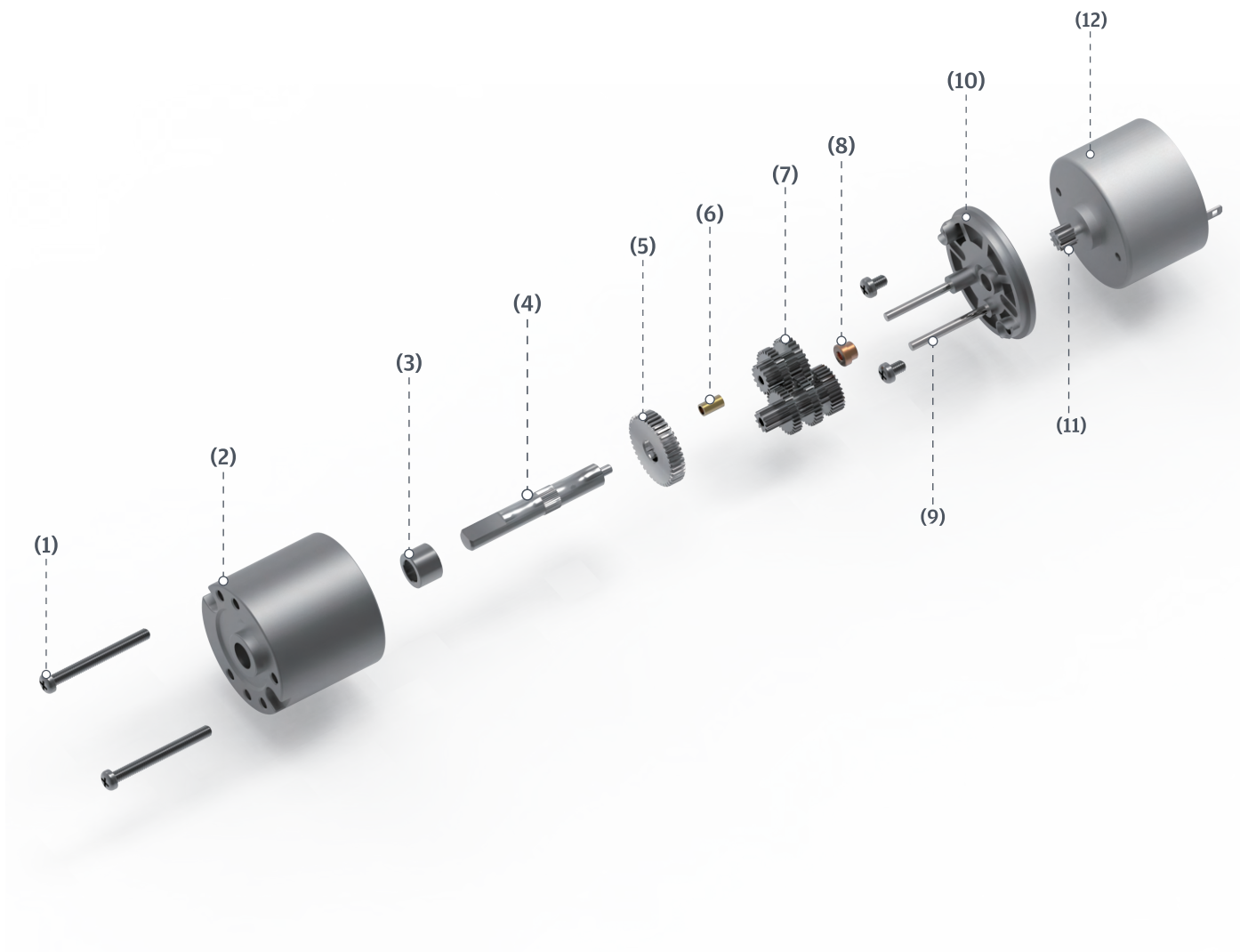
## RB series (Eccentric Output Shaft)



1	螺絲	Screw
2	外殼	Housing
3	軸承	Bearing
4	上機板	Front plate
5	主軸	Output shaft
6	傳動齒輪	Output gear
7	塔輪	Gear wheel
8	間隔套	Spacer sleeve

9	襯套	Bushing
10	支撐套	Support
11	下機板	End plate
12	梢	Pin
13	下蓋	Motor flange
14	馬達齒	Pinion
15	馬達	Motor

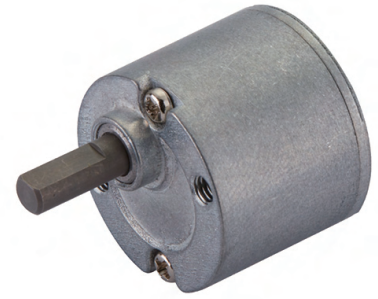
# 正齒齒輪箱 (偏心出軸) RB series (Eccentric Output Shaft)



1	螺絲	Screw	7	塔輪	Gear wheel
2	外殼	Housing	8	襯套	Bushing
3	軸承	Bearing	9	梢	Pin
4	主軸	Output shaft	10	下蓋	Motor flange
5	傳動齒輪	Output gear	11	馬達齒	Pinion
6	間隔套	Spacer sleeve	12	馬達	Motor

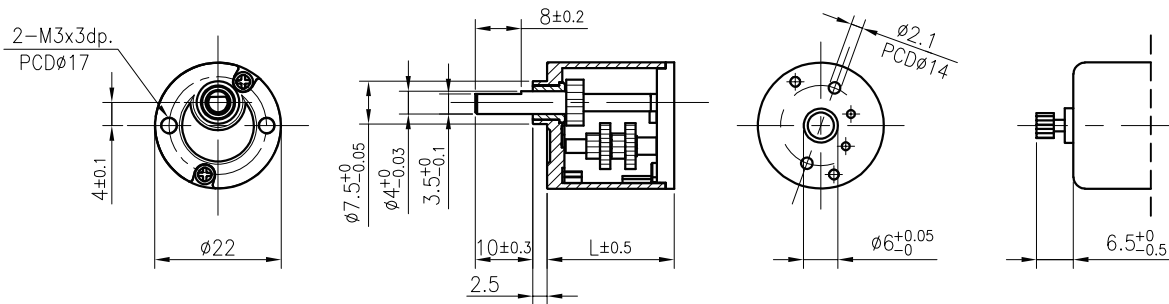
IG

# RB-22



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 1.5°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.3	12	20°	∅1.98	全種通用 Practicable

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/9	1/19	1/24	1/39	1/51	1/82	1/106	1/112	1/137	1/145
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.4	0.6	0.6	1	1	1.2	1.2	1.2	1.5	1.5
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	1.2	1.8	1.8	3	3	3.6	3.6	3.6	4.5	4.5
效率 Efficiency	73%	66%	66%	59%	59%	53%	53%	53%	53%	53%
長度 Length (L)	17.7	17.7	17.7	22.1	22.1	22.1	22.1	22.1	22.1	22.1
重量 Weight (g)	23.9	24.5	24.5	26.3	26.3	27	27	27	27	27

Encoder

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

Driver

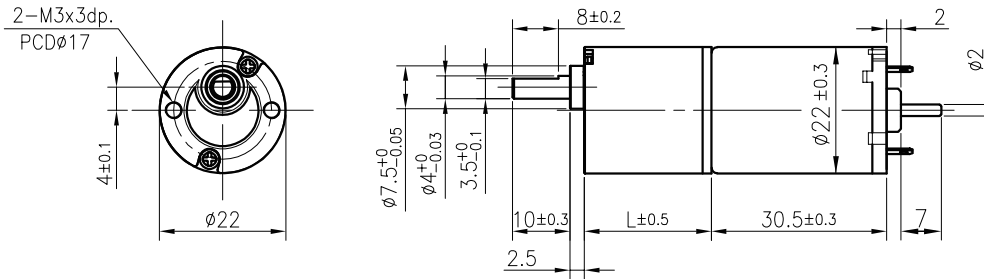


# RB-22GM

## 03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

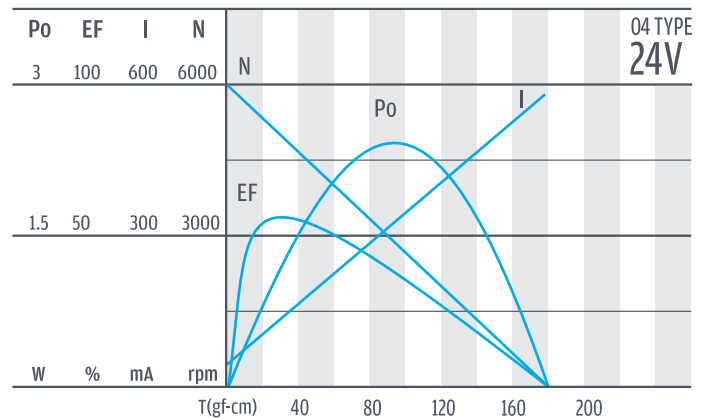
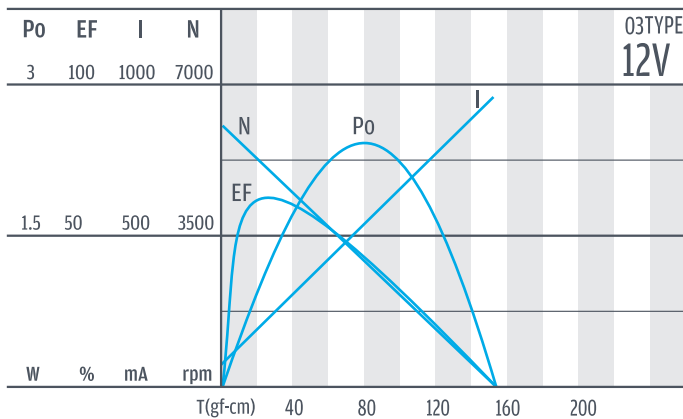
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/9	1/19	1/24	1/39	1/51	1/82	1/106	1/112	1/137	1/145		
12V	定格扭力 Rated torque (gf-cm)	200	385	495	715	930	1200	1200	1200	1500	1500			
	定格轉速 Rated speed (rpm)	530	255	195	122	94	58	44	42	34	32			
24V	定格扭力 Rated torque (gf-cm)	240	460	595	855	1100	1200	1200	1200	1500	1500			
	定格轉速 Rated speed (rpm)	520	250	190	120	92	57	43	41	33	31			
軸心迴轉方向 Rotation direction		ccw	cw		ccw		cw							
長度 Length (L)			17.7				22.1							

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	31	4790	≤ 240	6000	≤ 80	1.52	43
24	37	4710	≤ 145	6000	≤ 55	1.79	43

馬達單體特性/ Motor Characteristics



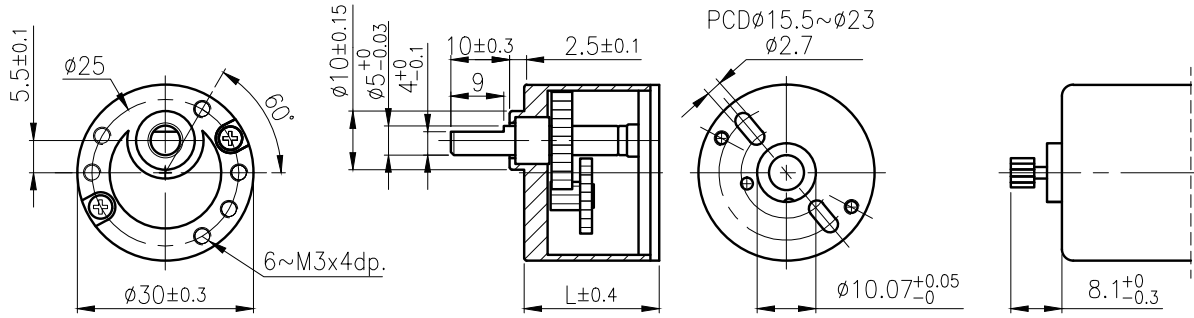
IG

# RB-30



Right Angle

## 外形尺寸 & 馬達齒銜尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	$\leq 0.8 \text{ kgf}$	$\leq 0.6 \text{ kgf}$	$\leq 10 \text{ kgf}$	$\leq 0.05 \text{ mm}$	$\leq 0.35 \text{ mm}$	$\leq 2^\circ$

RB

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.4	10	$20^\circ$	$\phi 1.98, \phi 2.28$	全種通用 Practicable

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/20	1/30, 1/36	1/50, 1/60	1/75, 1/90, 1/100	1/120, 1/150	1/180, 1/200	1/250, 1/300	1/400, 1/500, 1/600	1/810, 1/900, 1/1000
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	1.5	2	3	4	4.5	4.5	4.5	4.5
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	4.5	6	9	12	13.5	13.5	13.5	13.5
效率 Efficiency	66%				53%				
長度 Length (L)	23				28				
重量 Weight (g)	89				98				

PG

Encoder

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

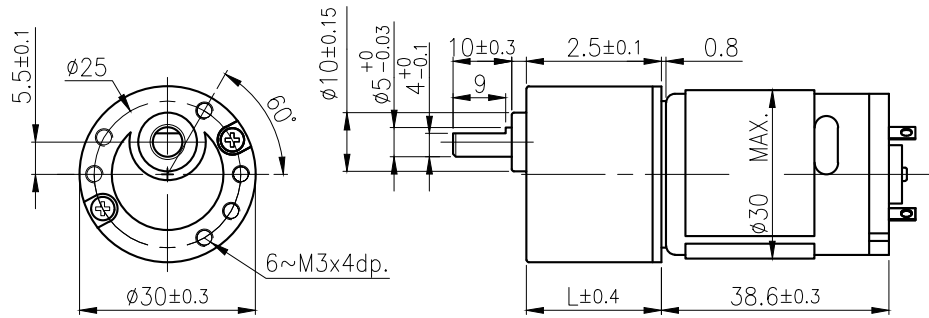
Driver

# RB-30GM

## 02 & 03 TYPE



### 外形尺寸/ Appearance Size



unit:mm

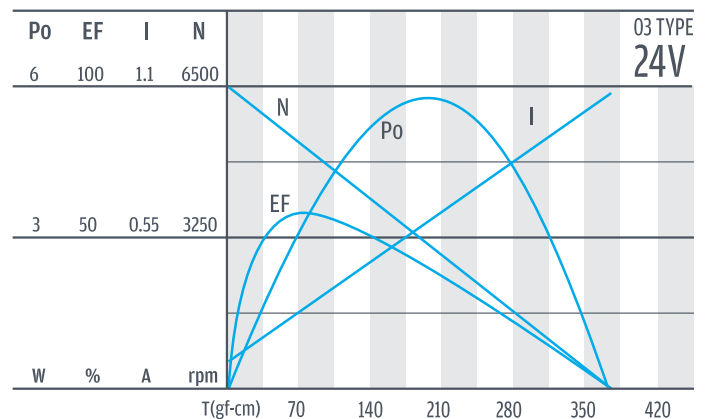
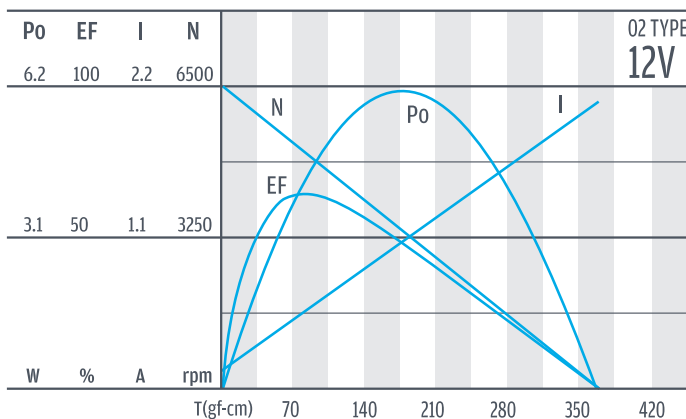
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/20	1/30	1/36	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/400	1/500	1/600	1/810	1/900	1/1000
12V	定格扭力 Rated torque (kgf-cm)		1	1.5	1.5	2	2	3	3	3	4	4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	定格轉速 Rated speed (rpm)		255	168	150	107	91	73	62	56	46.3	37.5	32	28.8	24	19.5	15.2	12.1	10.4	7.7	6.9	6.3
24V	定格扭力 Rated torque (kgf-cm)		1	1.5	1.5	2	2	3	3	3	4	4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	定格轉速 Rated speed (rpm)		258	168	150	107	91	73	62	56	46.3	37.4	31.8	28.7	24	19.5	15.1	12.1	10.3	7.7	6.9	6.3
軸心迴轉方向 Rotation direction		CCW																				
長度 Length (L)		23										28										

### 馬達單體型式/ Motor Data

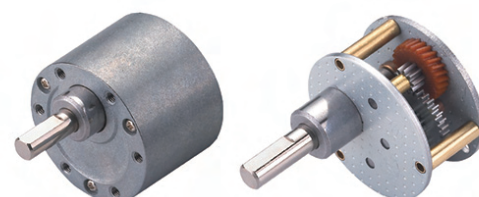
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	78	5290	≤ 0.53	6500	≤ 0.15	4.22	73
24	74	5250	≤ 0.25	6500	≤ 0.1	3.97	73

### 馬達單體特性/ Motor Characteristics



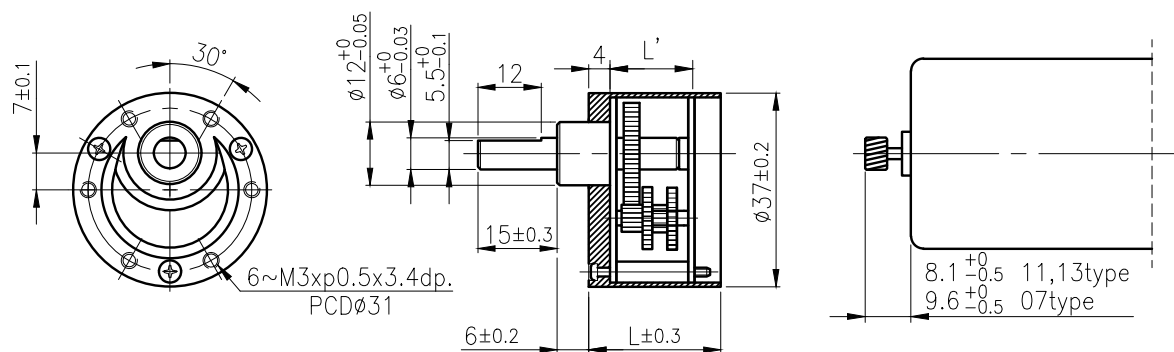
IG

# RB-35C



Right Angle

## 外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格/ Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 1 kgf	≤ 0.7 kgf	≤ 20 kgf	≤ 0.05 mm	≤ 0.35 mm	≤ 2°

WG

## 馬達齒輪型式/ Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	10	20°	— 18° (左, left)	ø 1.98, ø 2.28, ø 2.48, ø 2.98, ø 3.16	全種通用 Practicable

PG

## 標準減速比型式/ Gearboxes Specifications

減速比 Reduction ratio	1/6, 1/10	1/18	1/30	1/50, 1/60, 1/70	1/75, 1/90	1/100	1/120, 1/150, 1/180 1/200, 1/250, 1/300	1/350, 1/400, 1/450 1/500, 1/600, 1/700	1/750, 1/900, 1/1000	1/1500, 1/3000
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	1	2	3	4	6	6	6	6	6
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	3	6	9	12	18	18	18	18	18
效率 Efficiency	81%	73%			66%		59%		53%	48%
長度 Length (L)	12.5	15			17.5		20		22.5	25
長度 Length (L)	19.5	22			24.5		27		29.5	32
重量 Weight (g)	86	93			100		106		112	120

Encoder

- 使用相對溼度 : 20%~85%RH  
Operating relative humidity
- 使用溫度範圍 : -10°C~+60°C  
Operating temperature range

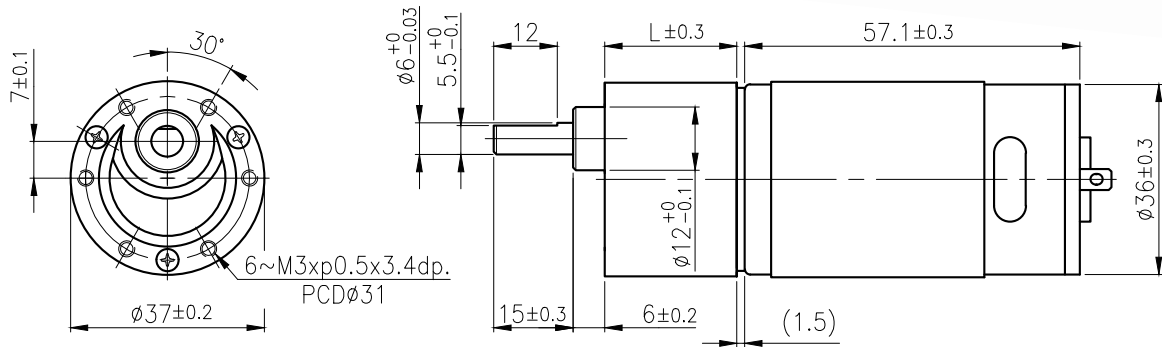
Driver

# RB-37GM

## 07 & 09 TYPE



### 外形尺寸/ Appearance Size



unit:mm

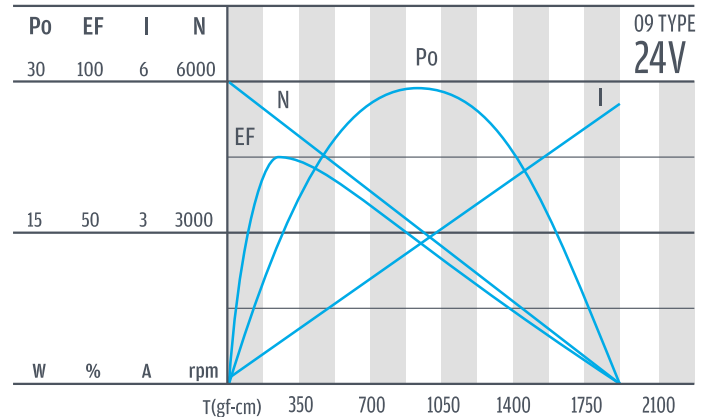
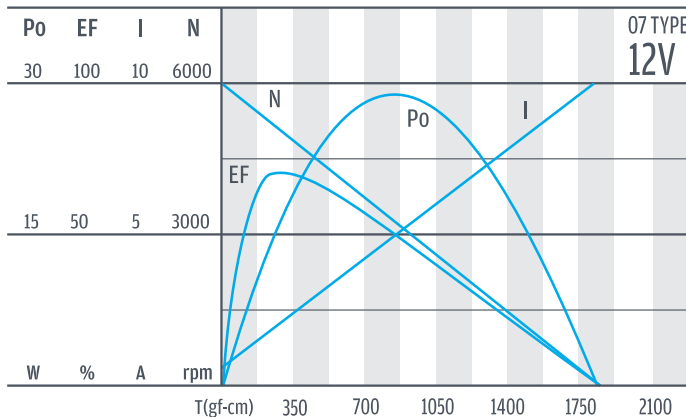
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/10	1/18	1/30	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/500	1/600	1/750	1/1000	1/1500	1/3000	
12V	減速比 Reduction ratio																					
	定格扭力 Rated torque (kgf-cm)	1	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	528	313	185	109	95	76	63	55	47	36	31.5	29	22.5	19.5	11.5	9.8	8	5.9	3.9	2	
24V	減速比 Reduction ratio																					
	定格扭力 Rated torque (kgf-cm)	1	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	532	315	186	111	96	77	64	55.5	48	36	32	29.5	23	20	11.8	9.9	8	6	4	2	
軸心迴轉方向 Rotation direction		CCW	CW				CCW					CW					CCW				CW	
長度 Length (L)		19.5	22				24.5					27					29.5				32	

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤1.6	6000	≤0.25	12.80	220
24	240	5150	≤0.75	6000	≤0.13	12.70	220

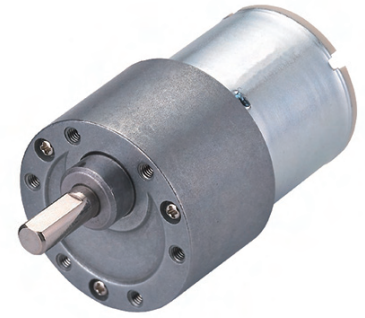
### 馬達單體特性/ Motor Characteristics



IG

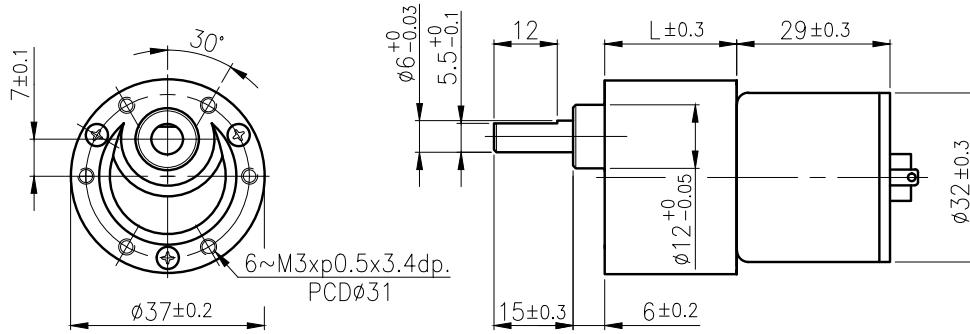
# RB-37GM

## 11 & 12 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

減速比 Reduction ratio	1/10	1/18	1/30	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/500	1/600	1/750	1/1000	1/1500	1/3000
12V 定格扭力 Rated torque (kgf-cm)	0.5	0.8	1.3	2	2.4	2.9	3.5	3.9	4.2	5.3	6	6	6	6	6	6	6	6	6	6
12V 定格轉速 Rated speed (rpm)	490	270	168	100	84	67	57	51	42.5	34	29	26	22	19	11.2	9.5	8	6	4.1	2
24V 定格扭力 Rated torque (kgf-cm)	0.5	0.8	1.4	2	2.4	3	3.6	4	4.4	5.4	6	6	6	6	6	6	6	6	6	6
24V 定格轉速 Rated speed (rpm)	480	250	160	98	83	65	56	50	41.5	33	28.5	26	22	19	11	9.3	7.9	5.9	4	2
軸心迴轉方向 Rotation direction	CW		CCW		CW				CCW				CW				CCW			
長度 Length (L)	19.5		22		24.5				27				29.5				32			

RB

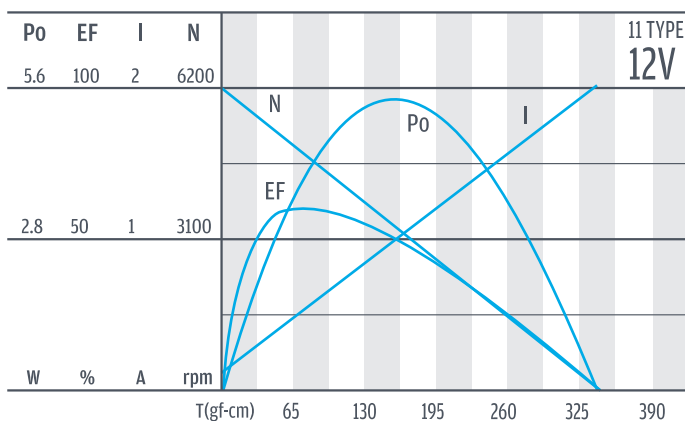
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	60	5100	$\leq 0.47$	6200	$\leq 0.12$	3.14	75
24	62	5000	$\leq 0.21$	6200	$\leq 0.06$	3.17	75

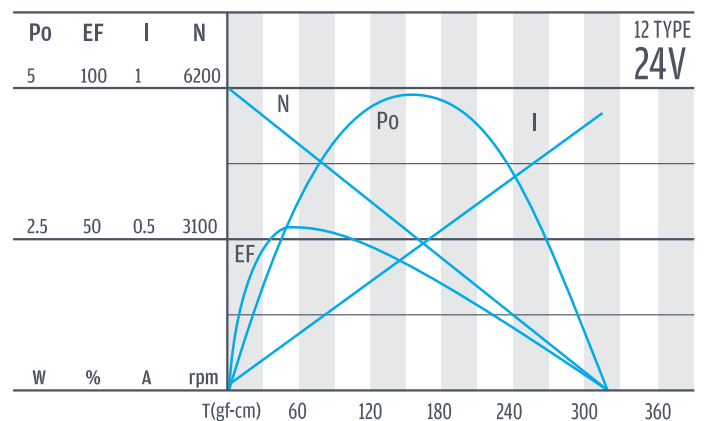
PG

### 馬達單體特性/ Motor Characteristics



Encoder

Driver

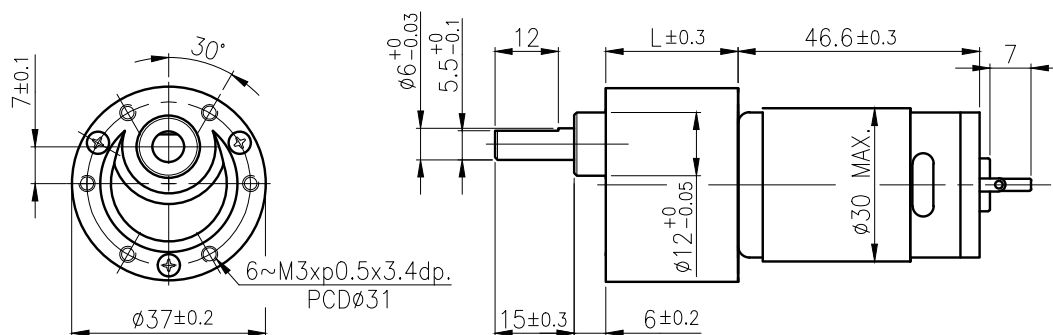


# RB-37GM

## 13 & 14 TYPE



### 外形尺寸/ Appearance Size



unit:mm

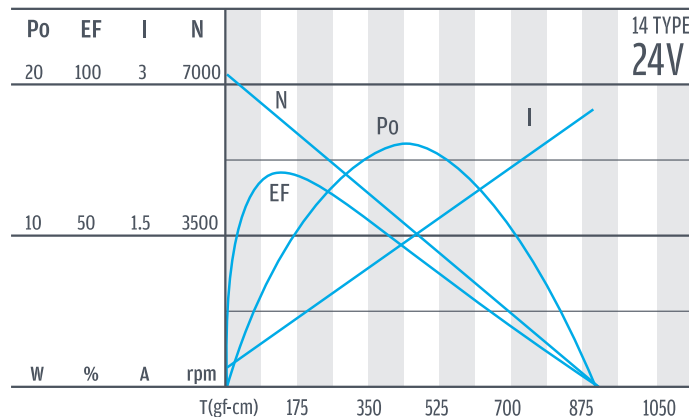
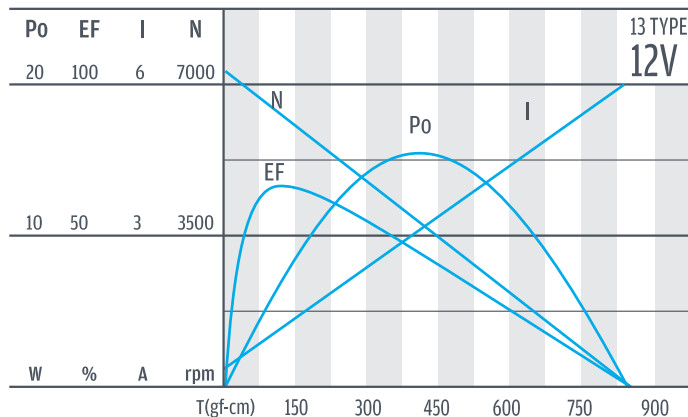
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/10	1/18	1/30	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/500	1/600	1/750	1/1000	1/1500	1/3000
12V	定格扭力 Rated torque (kgf-cm)	0.89	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	595	336	200	122	101	82	69	60	50	41	35	31	25	21	12.6	10.5	8.4	6.4	4.3	2.2
24V	定格扭力 Rated torque (kgf-cm)	1	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)	616	350	208	126	106	85	71	62	51	42	36	32	26	22	12.7	10.6	8.5	6.4	4.3	2.2
	軸心迴轉方向 Rotation direction	CCW	CW				CCW						CW					CCW			CW
	長度 Length (L)	19.5	22				24.5						27					29.5			32

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	110	5950	≤0.9	7200	≤0.15	7.0	110
24	130	6160	≤0.5	7200	≤0.12	8.5	110

### 馬達單體特性/ Motor Characteristics



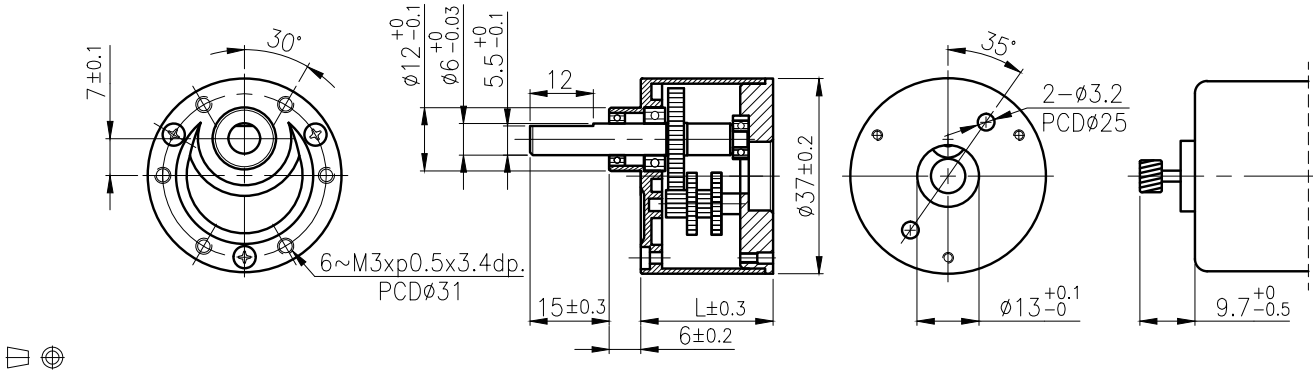
IG

# RB-37B



Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤ 2 kgf	≤ 0.7 kgf	≤ 20 kgf	≤ 0.04 mm	≤ 0.35 mm	≤ 2°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	10	20°	18° (左, left)	Ø 1.98, Ø 2.28, Ø 2.48, Ø 2.98, Ø 3.16	全種通用 Practicable

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/6, 1/10	1/18	1/30	1/50, 1/60, 1/70	1/75, 1/90	1/100	1/120, 1/150, 1/180 1/200, 1/250, 1/300	1/350, 1/400, 1/450 1/500, 1/600, 1/700	1/750, 1/900, 1/1000	1/1500, 1/3000
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	1	2	3	4	6	6	6	6	6
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	3	6	9	12	18	18	18	18	18
效率 Efficiency	81%	73%			66%		59%		53%	48%
長度 Length (L)	19.5	22			24.5		27		29.5	32
重量 Weight (g)	64	70			76		82		88	96

Encoder

- 使用相對溼度 : 20%~85%RH  
Operating relative humidity
- 使用溫度範圍 : -10°C~+60°C  
Operating temperature range

Driver

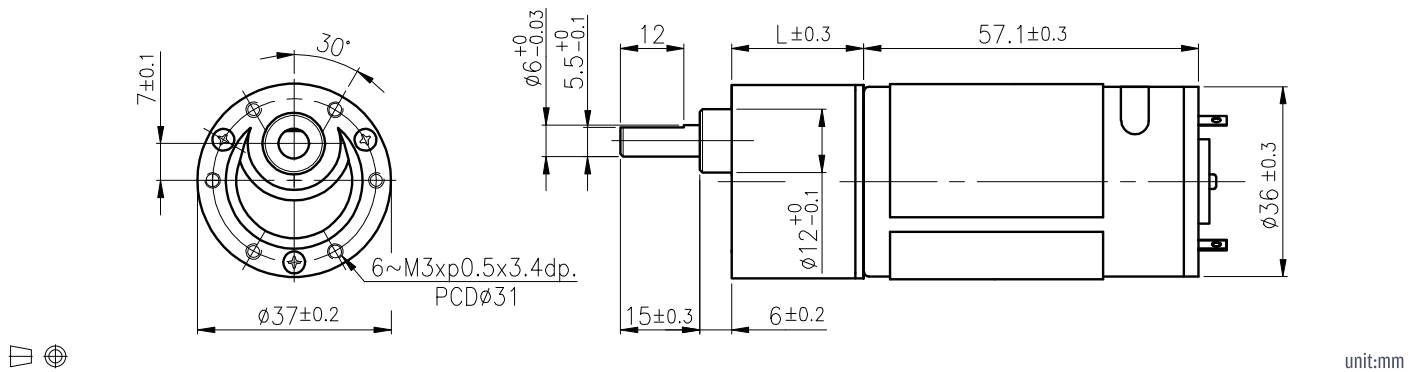


# RB-37BGM

## 07 & 09 TYPE



### 外形尺寸/ Appearance Size



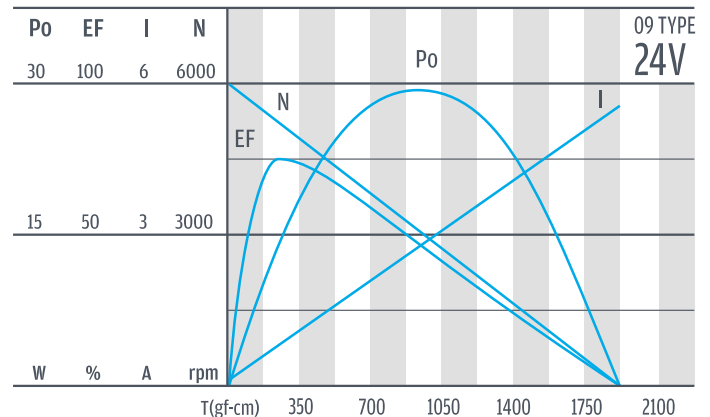
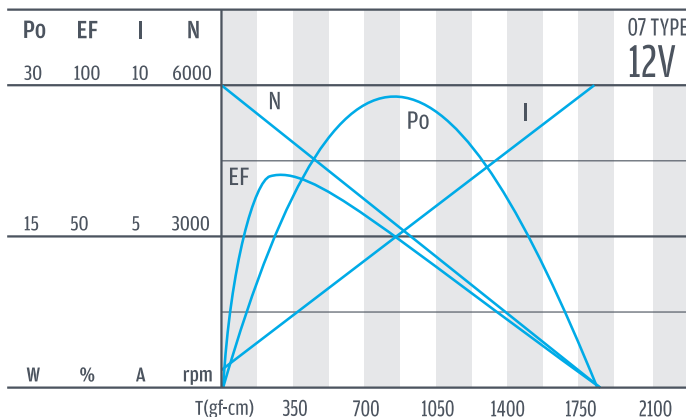
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		減速比 Reduction ratio	1/10	1/18	1/30	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/500	1/600	1/750	1/1000	1/1500	1/3000
12V	定格扭力 Rated torque (kgf-cm)		1	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)		528	313	185	109	95	76	63	55	47	36	31.5	29	22.5	19.5	11.5	9.8	8	5.9	3.9	2
24V	定格扭力 Rated torque (kgf-cm)		1	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	6	6	6
	定格轉速 Rated speed (rpm)		532	315	186	111	96	77	64	55.5	48	36	32	29.5	23	20	11.8	9.9	8	6	4	2
軸心迴轉方向 Rotation direction			CCW	CW				CCW					CW				CCW					CW
長度 Length (L)			19.5	22				24.5					27				29.5					32

### 馬達單體型式/ Motor Data

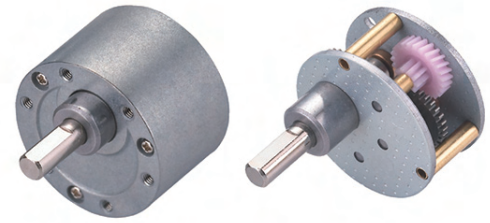
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤1.6	6000	≤0.25	12.80	220
24	240	5150	≤0.75	6000	≤0.13	12.70	220

### 馬達單體特性/ Motor Characteristics



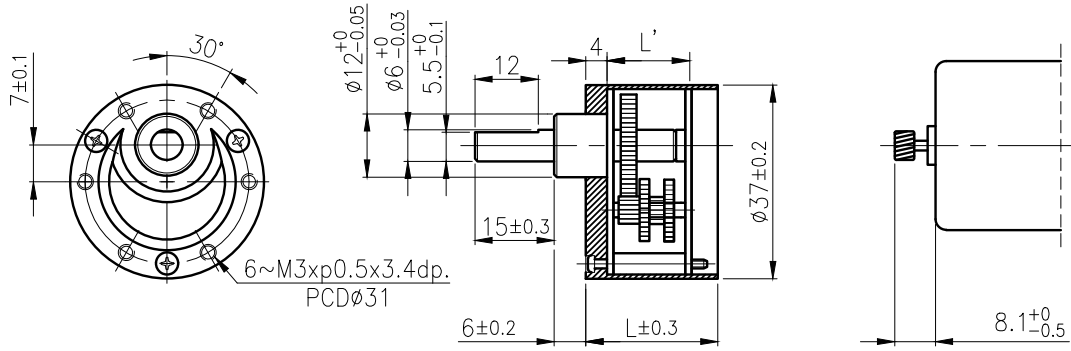
IG

# RB-35P



Right Angle

## 外形尺寸 & 馬達齒銜尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

RA

RB

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 1 kgf	≤ 0.7 kgf	≤ 20 kgf	≤ 0.05 mm	≤ 0.35 mm	≤ 2°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	10	20°	18° (左, left)	∅ 1.98, ∅ 2.28, ∅ 2.48, ∅ 2.98, ∅ 3.16	全種通用 Practicable

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/18	1/30	1/50, 1/60, 1/75	1/90, 1/100	1/120, 1/150, 1/180 1/200, 1/300	1/400, 1/450, 1/500 1/600	1/900, 1/1000	1/1500, 1/3000	
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	1.2	2	3	4	4	4	4	
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	3.6	6	9	12	12	12	12	
效率 Efficiency	73%		66%		59%		53%		48%
長度 Length (L)	15		17.5		20		22.5		25
長度 Length (L)	22		24.5		27		29.5		32
重量 Weight (g)	91		98		104		110		118

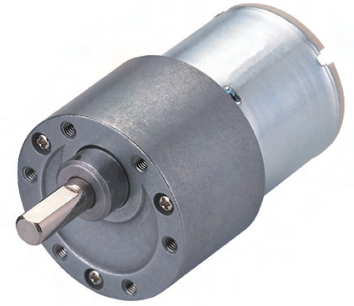
Encoder

Driver

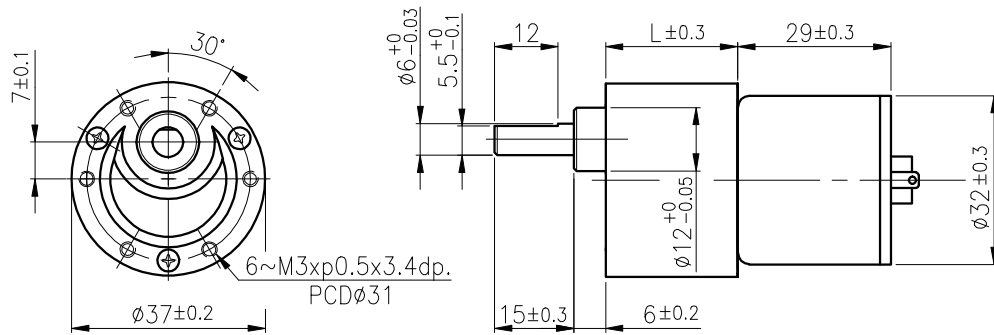
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RB-37PGM

## 11 & 12 TYPE



### 外形尺寸/ Appearance Size



unit:mm

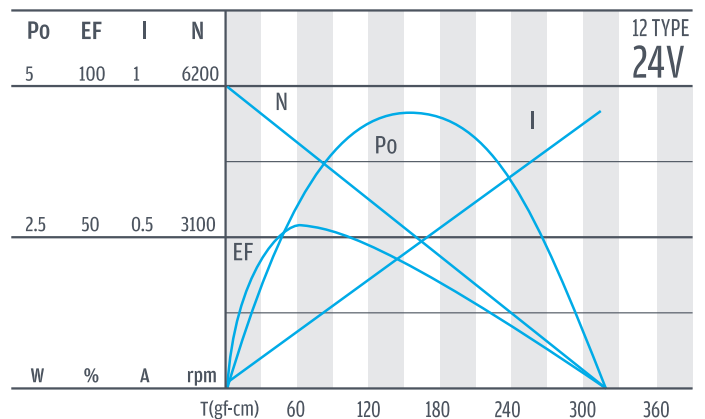
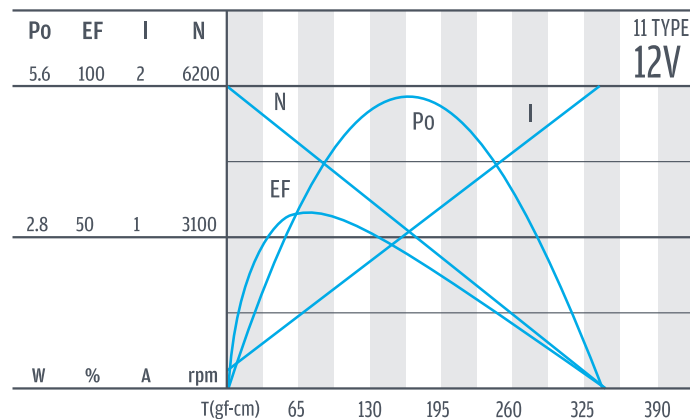
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/18	1/30	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/500	1/600	1/750	1/1000	1/1500	1/3000
12V	定格扭力 Rated torque (kgf-cm)	0.8	1.2	2	2	2.9	3	3	4	4	4	4	4	4	4	4	4	4	4	4
	定格轉速 Rated speed (rpm)	270	172	100	85	67	57.5	52	43	36	31	29	23	20.5	12	10	8	6.2	4.1	2.1
24V	定格扭力 Rated torque (kgf-cm)	0.8	1.2	2	2	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4
	定格轉速 Rated speed (rpm)	278	170	98	84	65	57	51	42	35	31	29	23	20	12	10	8	6.2	4.1	2.1
	軸心迴轉方向 Rotation direction	CCW			CW			CCW			CW			CCW						
	長度 Length (L)	22			24.5			27			29.5			32						

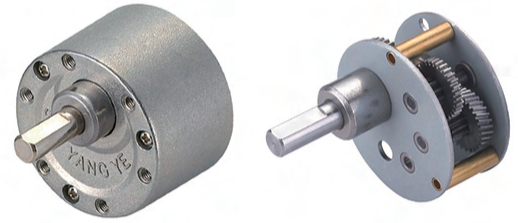
### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	60	5100	≤0.47	6200	≤0.12	3.14	75
24	62	5000	≤0.21	6200	≤0.06	3.17	75

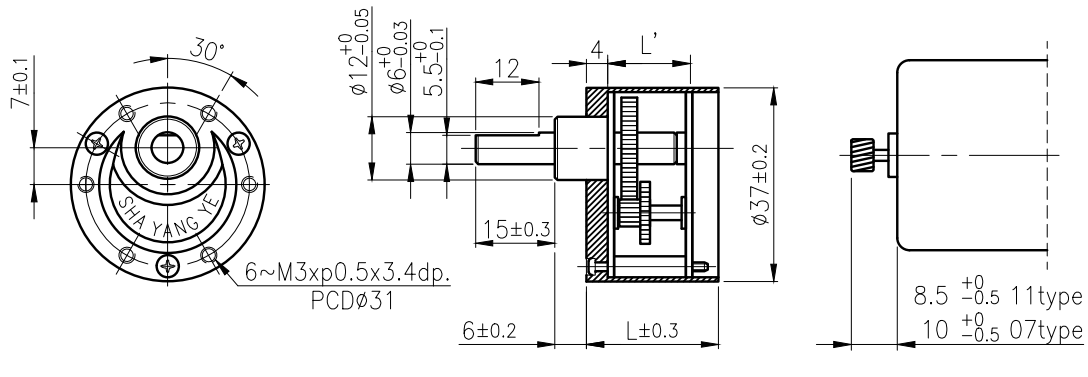
### 馬達單體特性/ Motor Characteristics



# RB-35A



## 外形尺寸 & 馬達齒鉋合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 1 kgf	≤ 0.7 kgf	≤ 20 kgf	≤ 0.05 mm	≤ 0.35 mm	≤ 2°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.4	12	20°	— 18° (左, left)	ø 1.98, ø 2.28, ø 2.48, ø 3.16	全種通用 Practicable

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/6, 1/10	1/18	1/25, 1/30	1/36, 1/50, 1/60	1/75	1/120, 1/150, 1/180 1/250
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	1	2	3	4	6
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	3	6	9	12	18
效率 Efficiency	81%	73%		66%		59%
長度 Length (L)	13.5	16		18.5		21
長度 Length (L)	19.5	22		24.5		27
重量 Weight (g)	91	98		105		111

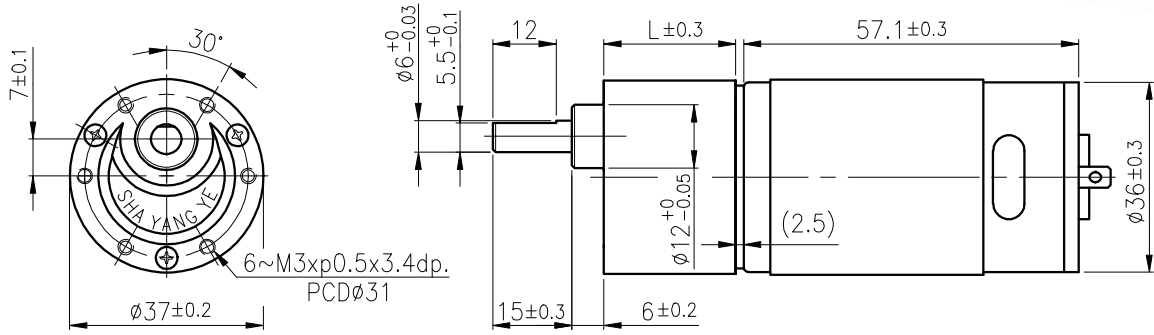
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RB-37AGM

## 07 & 09 TYPE



外形尺寸/ Appearance Size



unit:mm

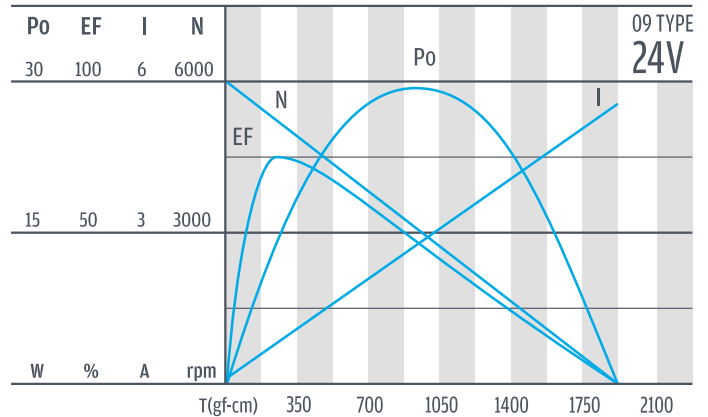
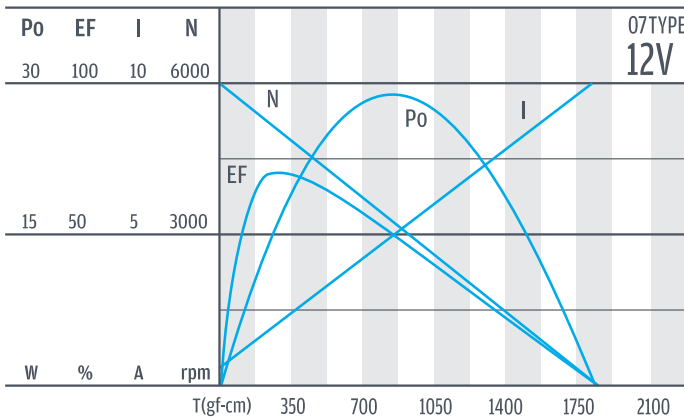
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/6	1/10	1/18	1/25	1/30	1/50	1/60	1/75	1/100	1/120	1/150	1/180	1/250			
12V	定格扭力 Rated torque (kgf-cm)	1	1	1	2	2	3	3	4	6	6	6	6	6			
	定格轉速 Rated speed (rpm)	900	528	313	210	185	109	95	76	55	47	36	31.5	21			
24V	定格扭力 Rated torque (kgf-cm)	1	1	1	2	2	3	3	4	6	6	6	6	6			
	定格轉速 Rated speed (rpm)	910	532	315	220	186	111	96	77	55.5	48	36	32	22			
	軸心迴轉方向 Rotation direction	CCW			CW			CCW			CW						
	長度 Length (L)	19.5			22			24.5			27						

馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤1.6	6000	≤0.25	12.80	220
24	240	5150	≤0.75	6000	≤0.13	12.70	220

馬達單體特性/ Motor Characteristics



IG

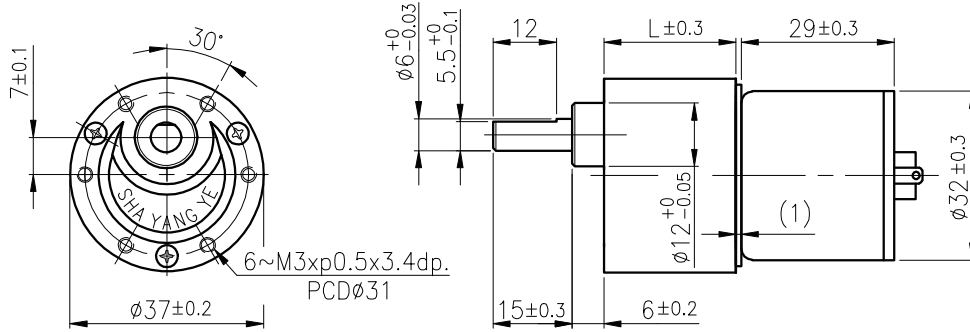
# RB-37AGM

## 11 & 12 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/6	1/10	1/18	1/25	1/30	1/50	1/60	1/75	1/100	1/120	1/150	1/180	1/250			
12V	定格扭力 Rated torque (kgf-cm)	0.3	0.5	0.8	1	1.3	2	2.4	2.9	3.9	4.2	5.3	6	6			
	定格轉速 Rated speed (rpm)	850	490	270	200	168	100	84	67	51	42.5	34	29	22			
24V	定格扭力 Rated torque (kgf-cm)	0.3	0.5	0.8	1	1.4	2	2.4	3	4	4.4	5.4	6	6			
	定格轉速 Rated speed (rpm)	833	480	250	200	160	98	83	65	50	41.5	33	28.5	22			
	軸心迴轉方向 Rotation direction	CCW			CW			CCW			CW						
	長度 Length (L)	19.5			22			24.5			27						

RB

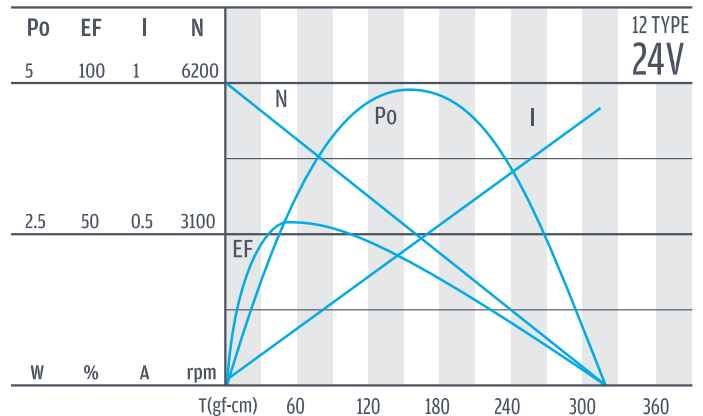
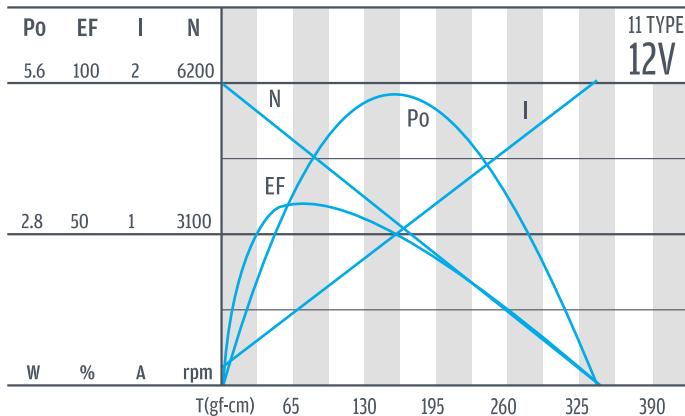
WG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	60	5100	$\leq 0.47$	6200	$\leq 0.12$	3.14	75
24	62	5000	$\leq 0.21$	6200	$\leq 0.06$	3.17	75

PG

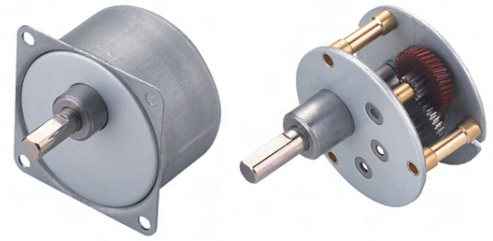
### 馬達單體特性/ Motor Characteristics



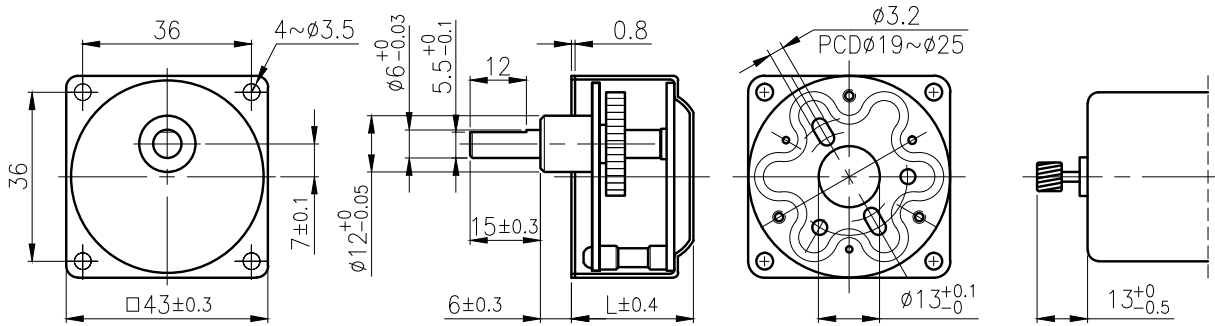
Encoder

Driver

# RB-40



## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸最大承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 1 kgf	≤ 0.7 kgf	≤ 20 kgf	≤ 0.05 mm	≤ 0.35 mm	≤ 2°

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	10	20°	--	ø2.28, ø3.16	全種通用 Practicable
0.4	12	20°	18 (Left, 左)	ø3.16	全種通用 Practicable

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/10	1/15, 1/18	1/25, 1/30, 1/36	1/50, 1/60, 1/75	1/90, 1/100, 1/120, 1/150	1/180, 1/200, 1/250, 1/300	1/360, 1/400, 1/500
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1	3	4	5	7	7	7
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	3	9	12	15	21	21	21
效率 Efficiency	81%	73%			66%		59%
長度 Length (L)	23.9	26.4			28.9		31.4
重量 Weight (g)	110	116			125		130

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

IG

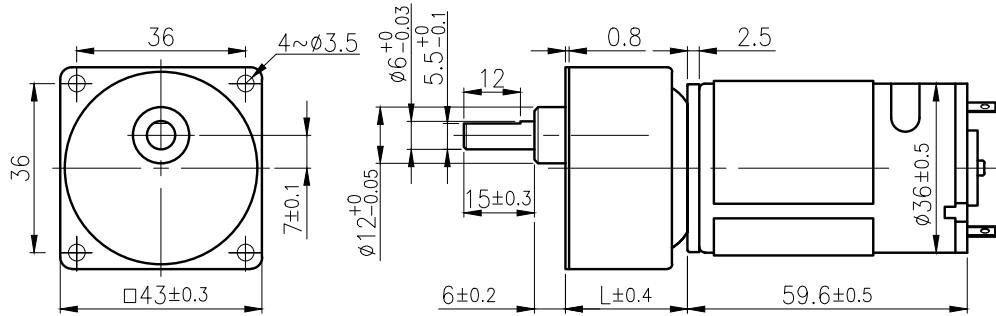
# RB-40GM

## 03 & 04 TYPE



Right Angle

### 外形尺寸/ Appearance Size



unit:mm

RA

RB

### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/10	1/15	1/18	1/25	1/30	1/36	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180	1/200	1/250	1/300	1/360	1/400	1/500
12V	定格扭力 Rated torque (kgf-cm)	1	2.7	3	4	4	4	5	5	5	7	7	7	7	7	7	7	7	7	7	7
	定格轉速 Rated speed (rpm)	519	321	275	198	172	145	103	91	72.5	61	54	46	37	31	28.2	22.5	19.2	16	14.5	11.8
24V	定格扭力 Rated torque (kgf-cm)	1	2.6	3	4	4	4	5	5	5	7	7	7	7	7	7	7	7	7	7	7
	定格轉速 Rated speed (rpm)	530	340	283	207	176	149	107	92	73	61	54	46	37	31	28.5	23	19.1	16.2	14.5	11.8
	軸心迴轉方向 Rotation direction	CCW				CW				CCW				CW							
	長度 Length (L)	23.9				26.4				28.9				31.4							

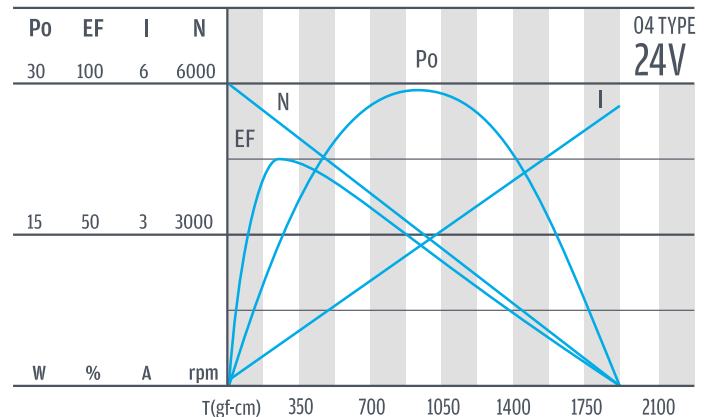
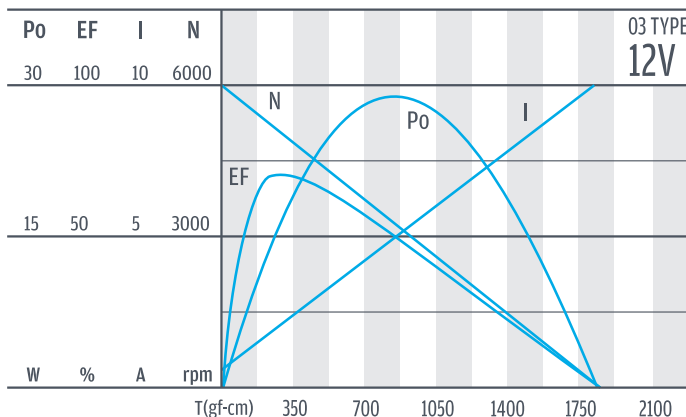
WG

PG

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤ 1.6	6000	≤ 0.25	12.80	220
24	240	5150	≤ 0.75	6000	≤ 0.13	12.70	220

### 馬達單體特性/ Motor Characteristics

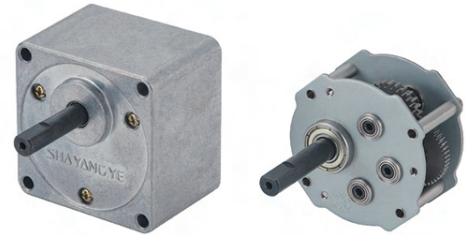


Encoder

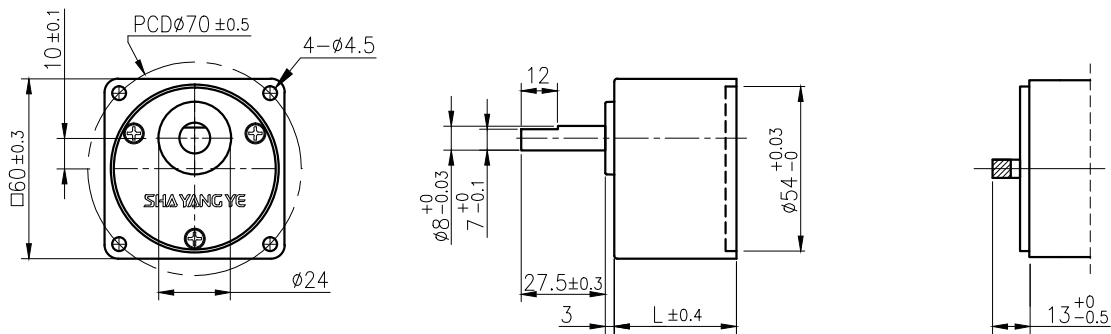
Driver



# RB-60W



外形尺寸 & 馬達齒鉤合尺寸 / Appearance Size & Pinion Assembly Dimension



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (5mm from flange)	軸向負荷 Shaft axial load	主軸承受壓力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	$\leq 3$ kgf	$\leq 5$ kgf	$\leq 30$ kgf	$\leq 10$ mm	$\leq 0.35$ mm	$\leq 3'$

## 標準減速比型式 / Gearboxes Specifications

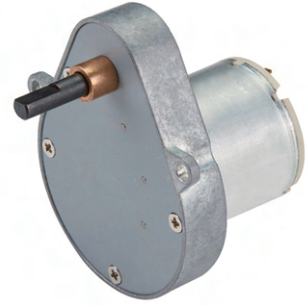
減速比 Reduction ratio	1/6	1/7.5	1/9	1/18	1/25	1/30	1/36	1/50	1/60	1/75	1/90	1/100	1/120	1/150	1/180			
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	2.5	3	6	7.5	9	11	14	16	20	24	27	30	30	30			
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	6	7.5	9	18	22.5	27	33	42	48	60	72	81	90	90	90			
效率 Efficiency	81%			73%			66%											
長度 Length (L)	30			35			40											
重量 Weight (g)	400			400			400											

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

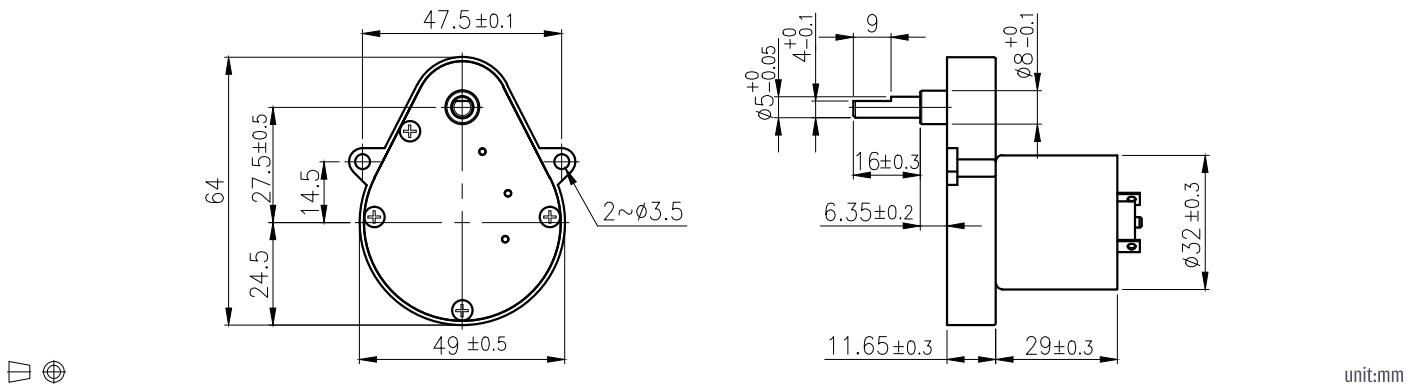


# RB-64GM

## 11 & 12 TYPE



### 外形尺寸/ Appearance Size



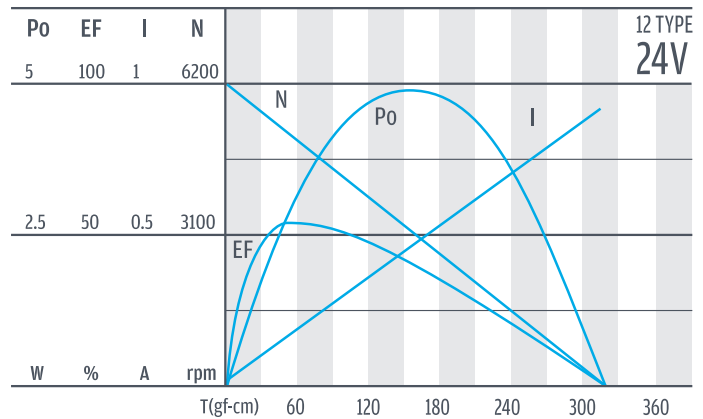
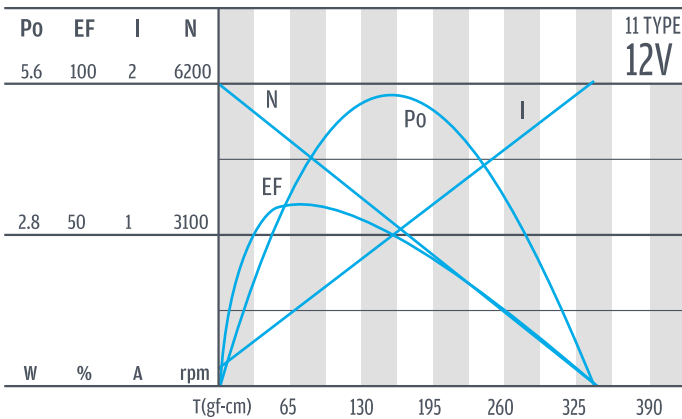
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		1/30	1/45	1/60	1/90	1/120	1/150	1/225	1/340
12V	減速比 Reduction ratio	1/30	1/45	1/60	1/90	1/120	1/150	1/225	1/340
	定格扭力 Rated torque (kgf-cm)	1.2	1.8	2.3	3	3	3	3	3
24V	定格轉速 Rated speed (rpm)	170	113	84	57	45	37	25	17
	定格扭力 Rated torque (kgf-cm)	1.3	1.9	2.6	3	3	3	3	3
定格轉速 Rated speed (rpm)		162	109	81	57	45	37	25	17
軸心迴轉方向 Rotation direction		CW							

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	60	5100	≤470	6200	≤120	3.14	75
24	62	5000	≤210	6200	≤60	3.17	75

### 馬達單體特性/ Motor Characteristics

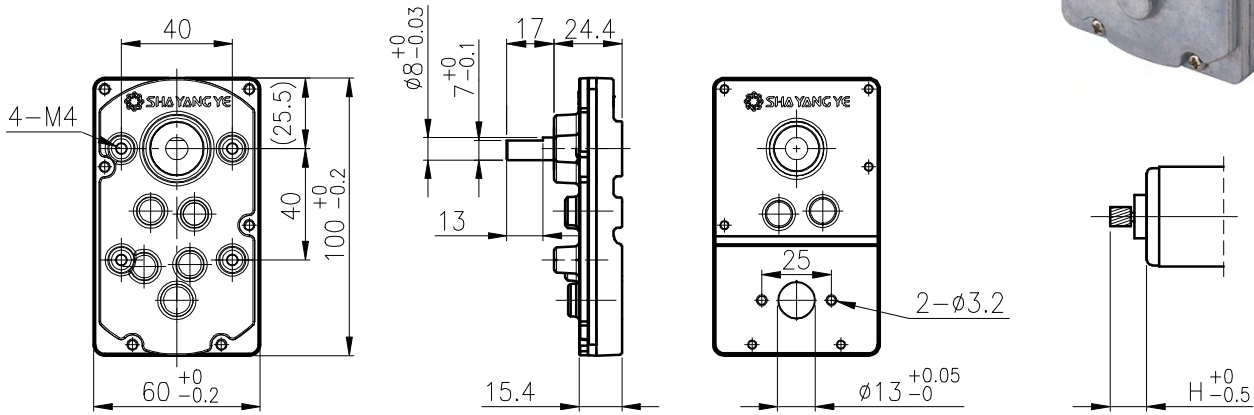


IG

# RB-99W

Right Angle

## 外形尺寸 & 馬達齒鉚合尺寸 / Appearance Size & Pinion Assembly Dimension



RA

RB



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearing	≤ 3 kgf	≤ 5 kgf	≤ 30 kgf	≤ 0.10 mm	≤ 0.35 mm	≤ 3°

WG

## 馬達齒輪型式 / Pinion Specifications

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	螺旋角 Helix angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	11	20°	18° (左, left)	Ø 3.16	1/30, 1/100, 1/147, 1/305, 1/459
0.5	13	20°	18° (左, left)	Ø 3.16	1/24, 1/54, 1/81, 1/246

PG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/24, 1/30	1/54	1/81, 1/100	1/147	1/246, 1/305	1/459
定格容許扭力 (kgf-cm max.) Rated tolerance torque	3	6	8	8	10	10
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	9	18	24	24	30	30
效率 Efficiency			73%			66%
馬達齒高度 Pinion Height (H)			10.6			7
重量 Weight (g)			325			340

Encoder

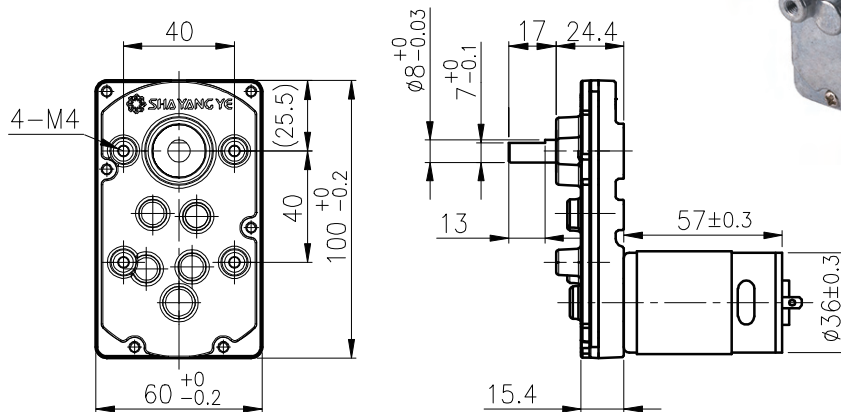
Driver

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range

# RB-99WGM

## 01 & 02 TYPE

### 外形尺寸/ Appearance Size



unit:mm

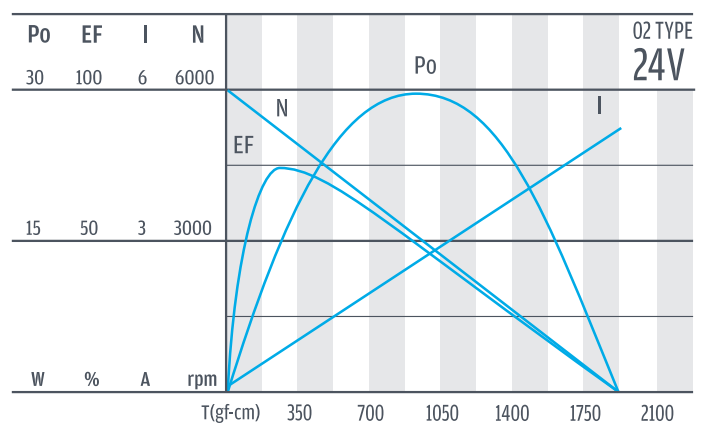
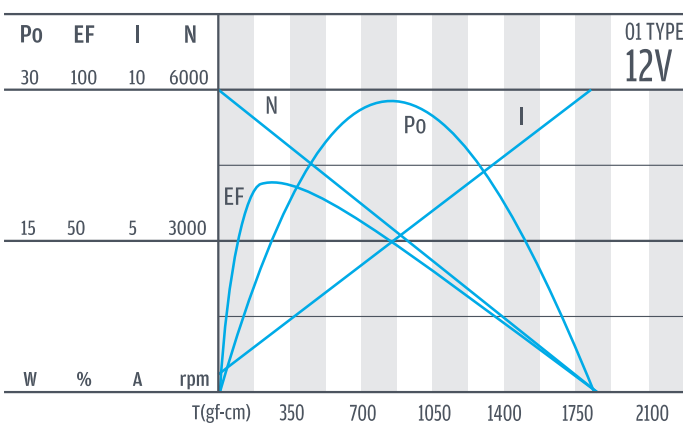
### 齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

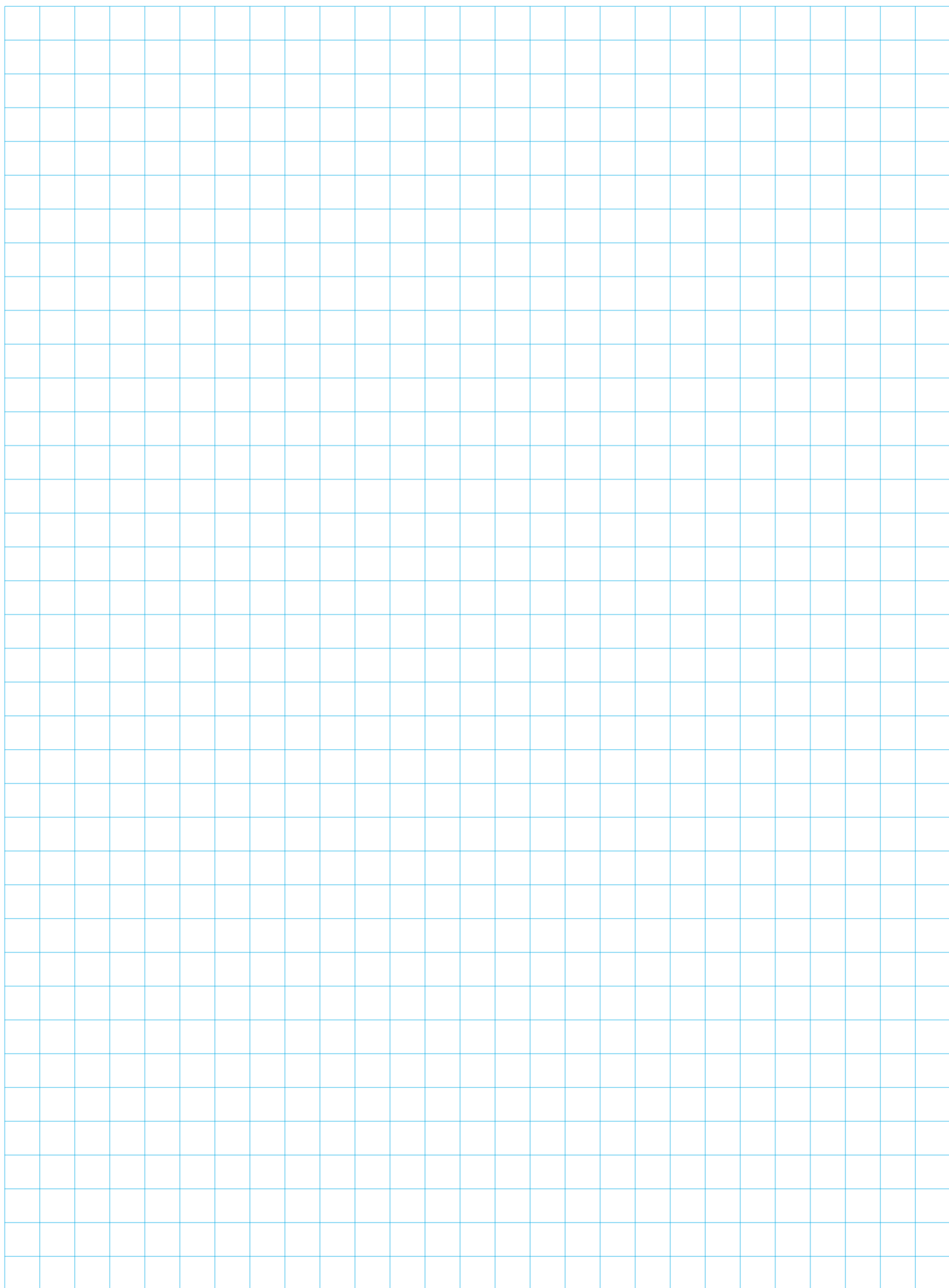
		1/24	1/30	1/54	1/81	1/100	1/147	1/246	1/305	1/459	
減速比 Reduction ratio		1/24	1/30	1/54	1/81	1/100	1/147	1/246	1/305	1/459	
12V	定格扭力 Rated torque (kgf-cm)	3	3	6	8	8	8	10	10	10	
	定格轉速 Rated speed (rpm)	210	170	93	63	52	35	22	17	12	
24V	定格扭力 Rated torque (kgf-cm)	3	3	6	8	8	8	10	10	10	
	定格轉速 Rated speed (rpm)	210	170	93	63	52	35	22	17	12	
軸心迴轉方向 Rotation direction		CW					CCW				

### 馬達單體型式/ Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	250	4930	≤ 1.6	6000	≤ 0.25	12.80	220
24	240	5150	≤ 0.75	6000	≤ 0.13	12.70	220

### 馬達單體特性/ Motor Characteristics





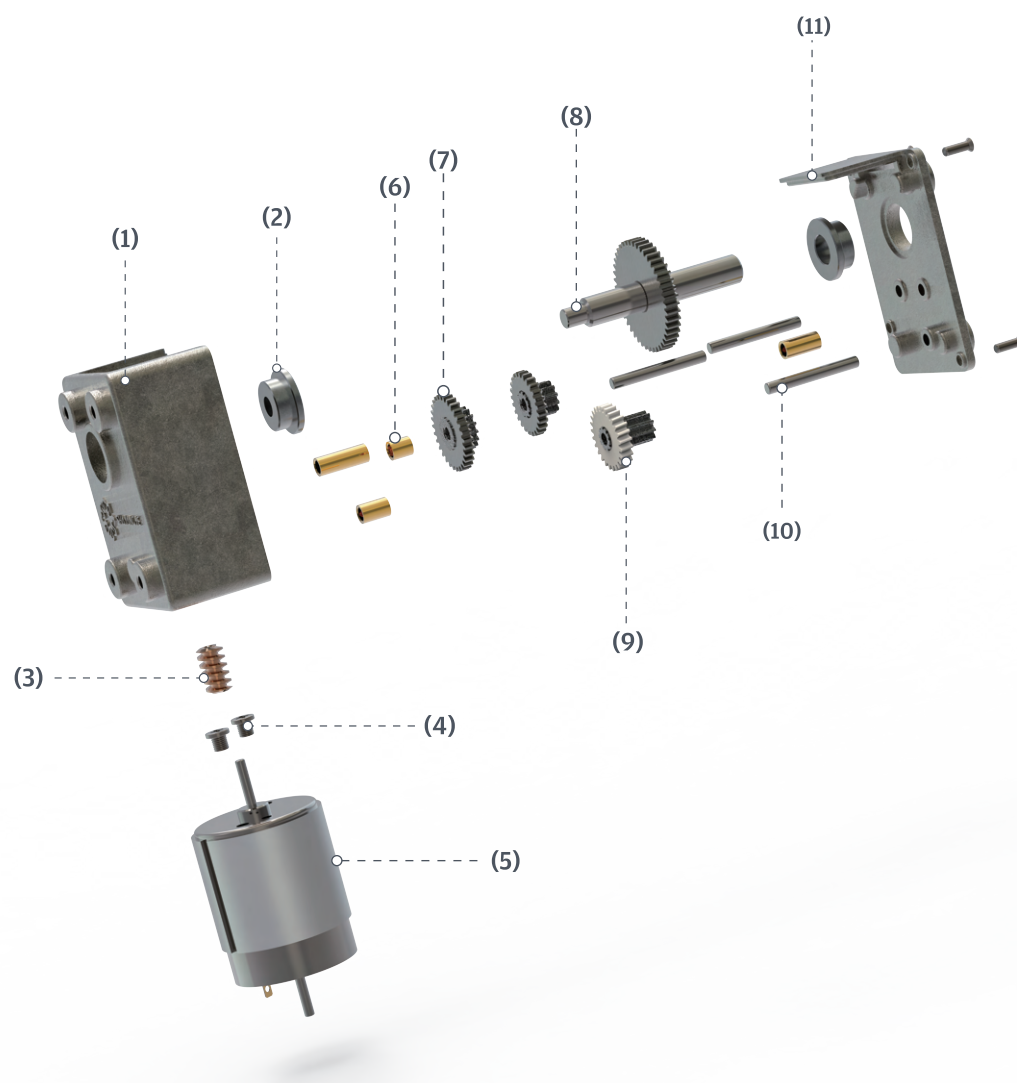


# Worm Gear Motor

Worm Gear series

# 蝸桿蝸輪齒輪箱馬達

## Worm Gear Motor



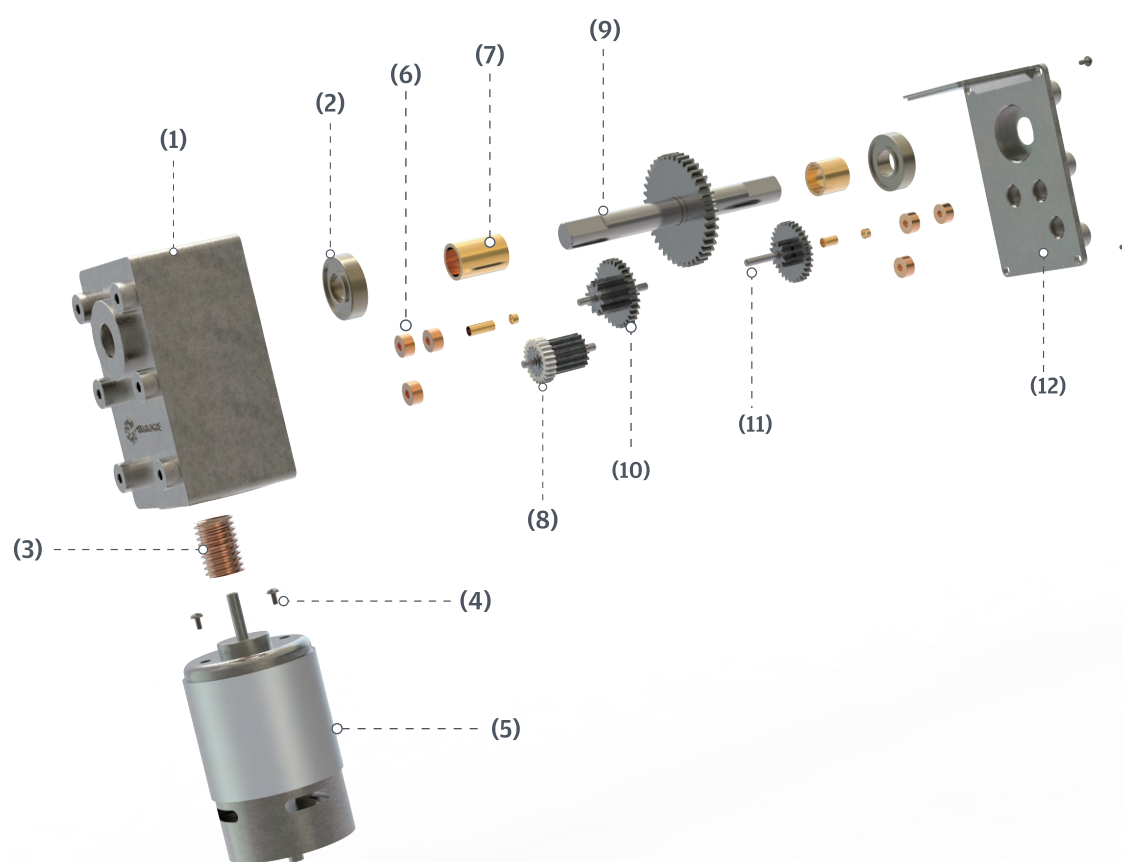
1	外殼	Housing
2	襯套	Bushing
3	蝸桿	Worms
4	螺絲	Screw
5	馬達	Motor
6	間隔套	Spacer sleeve
7	塔輪	Gear wheel

8	主軸	Output shaft
9	蝸輪	Worm gear
10	梢	Pin
11	外殼	Housing



# 蝸桿蝸輪齒輪箱馬達

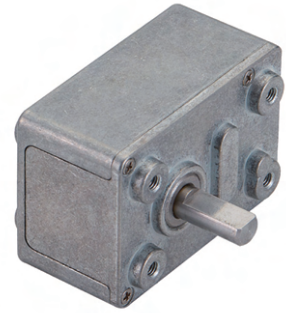
## Worm Gear Motor



1	外殼	Housing
2	滾珠軸承	Ball bearing
3	蝸桿	Worms
4	螺絲	Screw
5	馬達	Motor
6	襯套	Bushing
7	間隔套	Spacer sleeve

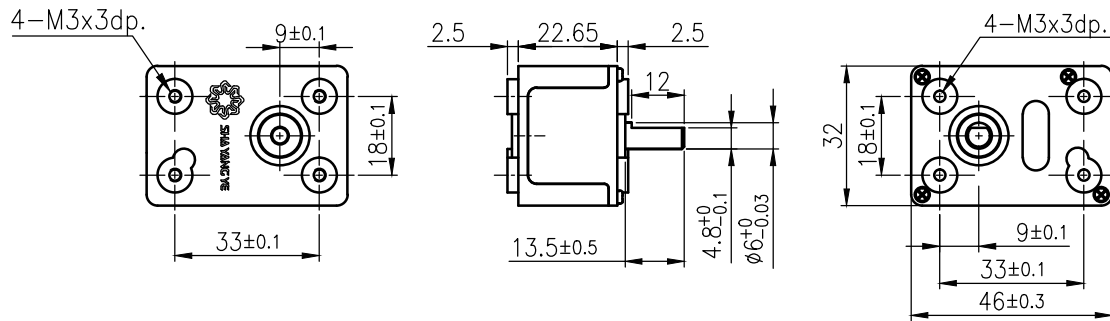
8	蝸輪	Worm gear
9	主軸	Output shaft
10	塔輪	Gear wheel
11	梢	Pin
12	外殼	Housing

# WG-32



## 外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	含油軸承 Sleeve bearings	≤1kgf	≤0.7 kgf	≤5 kgf	≤0.05 mm	≤0.35 mm	≤3°

## 馬達齒輪型式 / Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	1	20°	∅1.98	全機種通用 Practicable

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/75	1/100	1/200	1/300	1/500	1/700	1/900	1/1012						
定格容許扭力 (kgf-cm max.) Rated tolerance torque	1.4	1.9	3.8	5.5	6	6	6	6						
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	2.8	3.8	7.6	11.1	12	12	12	12						
效率 Efficiency	34%	34%	34%	34%	28%	28%	28%	28%						
重量 Weight (g)	117	117	117	117	120	120	120	120						

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range
- WG系列只搭配馬達販售  
WG series are only sold with motors.

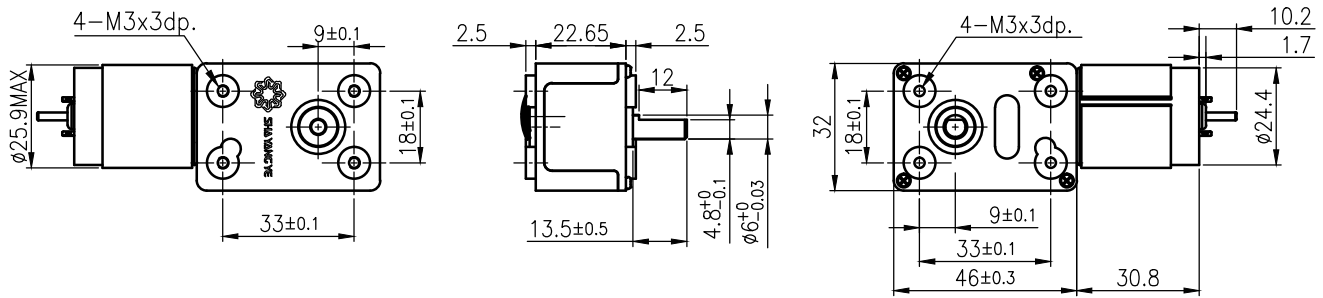
# WG-32GM

## 01 & 02 TYPE



外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

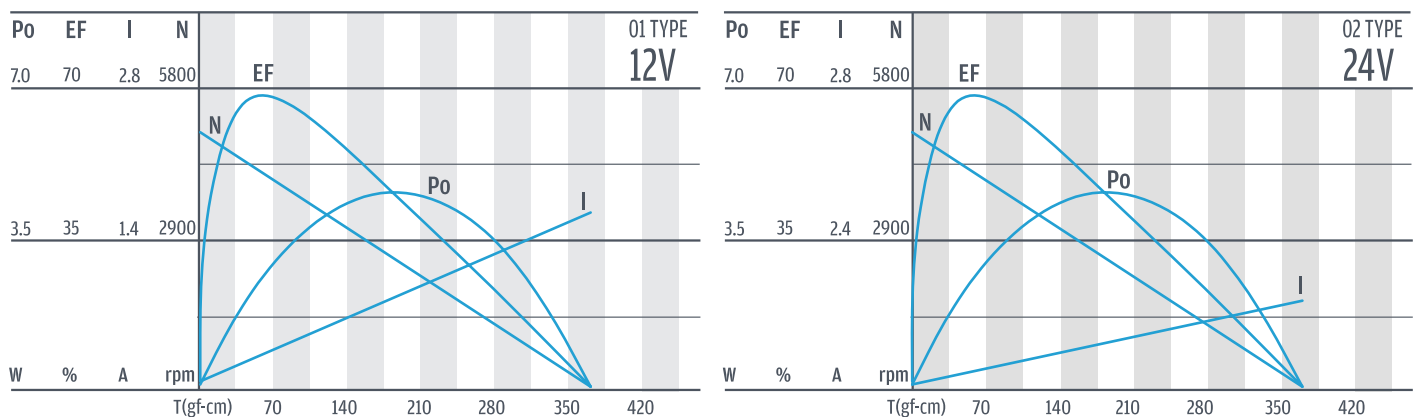
### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

		減速比 Reduction ratio	1/75	1/100	1/200	1/300	1/500	1/700	1/900	1/1012	
12V	定格扭力 Rated torque (kgf-cm)	1.4	1.9	3.8	5.5	6	6	6	6	6	
	定格轉速 Rated speed (rpm)	55.5	42	20.5	14	8.8	6.5	5.1	4.6		
24V	定格扭力 Rated torque (kgf-cm)	1.4	1.9	3.8	5.5	6	6	6	6	6	
	定格轉速 Rated speed (rpm)	55.5	42	20.5	14	8.8	6.5	5.1	4.6		
軸心迴轉方向 Rotation direction			CW			CCW					

### 馬達單體型式 / Motor Data

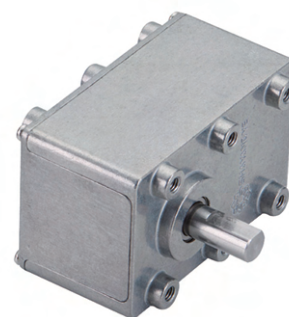
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	55.3	4160	≤ 240	4900	≤ 60	2.37	60
24	55.3	4160	≤ 140	4900	≤ 30	2.37	60

### 馬達單體特性 / Motor Characteristics



IG

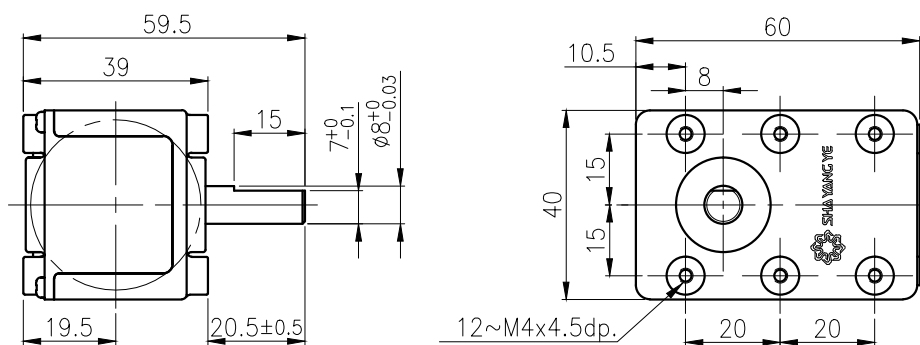
# WG-40



Right Angle

## 外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

RA

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤8kgf	≤3kgf	≤15kgf	≤0.05mm	≤0.5mm	≤3°

RB

## 馬達齒輪型式 / Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.5	1	20°	∅3.16	全機種通用 Practicable

WG

## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/50	1/75	1/100	1/150	1/200	1/350	1/600	1/700	1/1050
定格容許扭力 (kgf-cm max.) Rated tolerance torque	2	3	4	6	8	10	20	20	20
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	4	6	8	12	16	20	40	40	40
效率 Efficiency	34%	34%	34%	34%	34%	34%	28%	28%	28%
重量 Weight (g)	215	215	215	215	215	215	220	220	220

PG

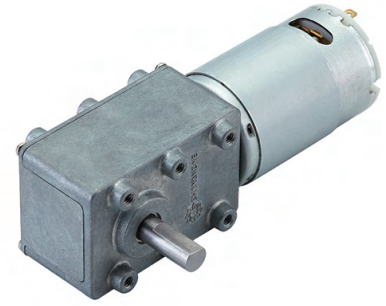
- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range
- WG系列只搭配馬達販售  
WG series are only sold with motors.

Encoder

Driver

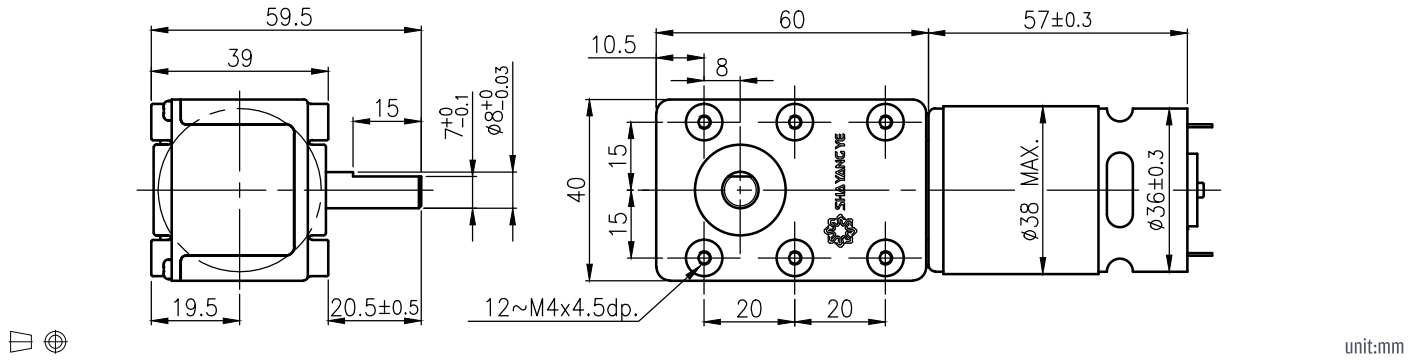
# WG-40GM

## 01 & 02 TYPE



外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



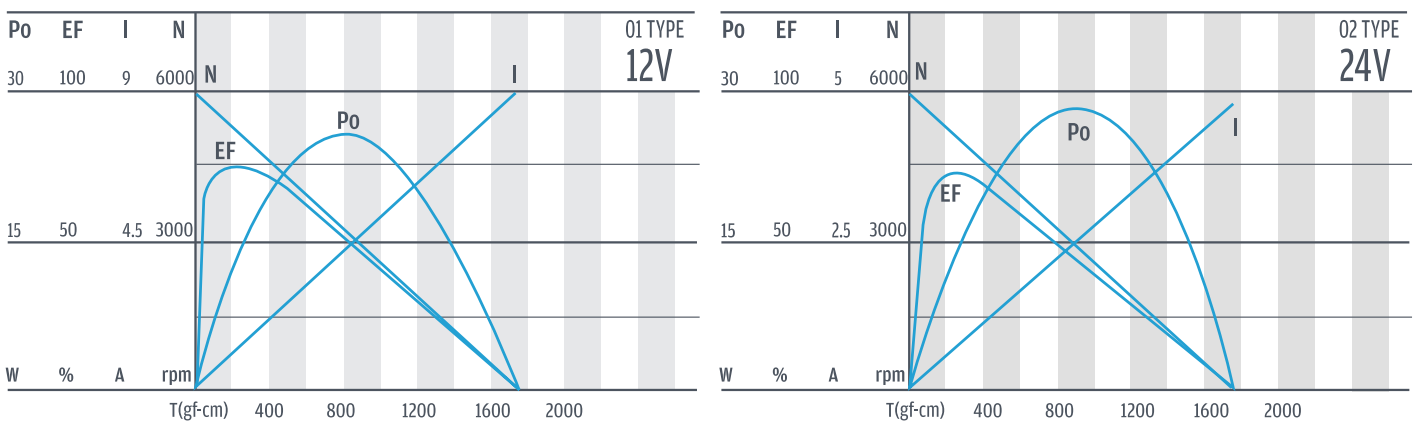
齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

		1/50	1/75	1/100	1/150	1/200	1/350	1/600	1/700	1/1050	
12V	減速比 Reduction ratio	1/50	1/75	1/100	1/150	1/200	1/350	1/600	1/700	1/1050	
	定格扭力 Rated torque (kgf-cm)	2	3	4	6	8	10	20	20	20	
24V	定格轉速 Rated speed (rpm)	104	69.3	52	34.6	26	14.8	8.6	7.4	4.9	
	定格扭力 Rated torque (kgf-cm)	2.85	4.2	5.7	8.5	10	10	20	20	20	
軸心迴轉方向 Rotation direction		CW					CCW				

馬達單體型式 / Motor Data

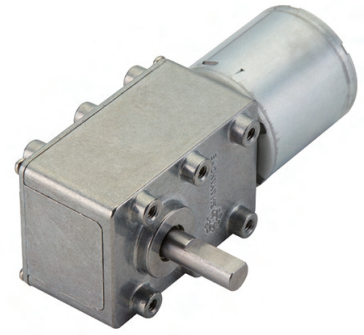
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	200	5200	≤1.6	6000	≤0.30	10.5	220
24	285	5100	≤1.2	6000	≤0.16	15	220

馬達單體特性 / Motor Characteristics



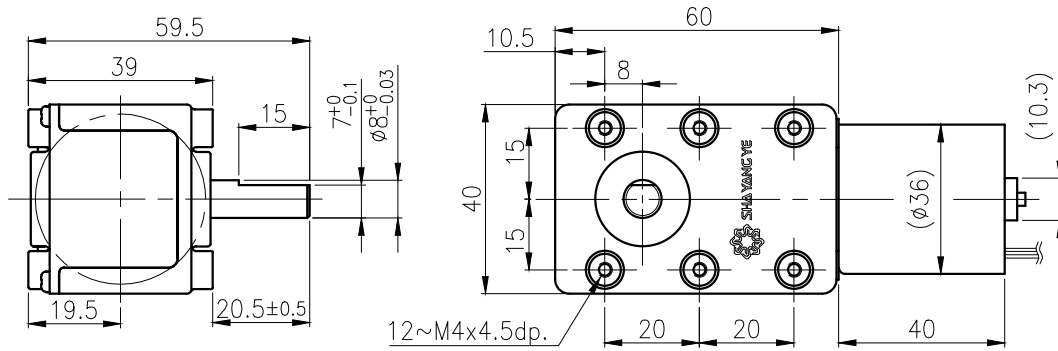
# WG-40GM

## 41 & 42 TYPE



外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

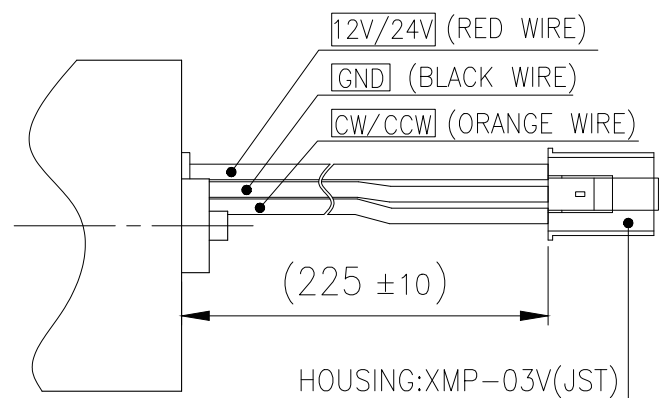
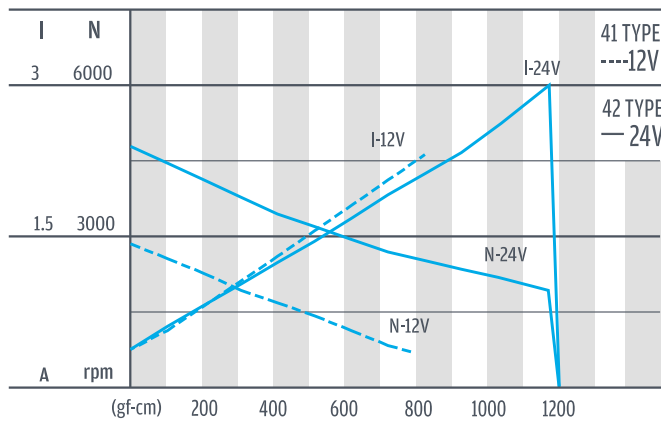
齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

	減速比 Reduction ratio	1/50	1/75	1/100	1/150	1/200	1/350	1/600	1/700	1/1050
12V	定格扭力 Rated torque (kgf-cm)	2	3	4	6	8	10	20	20	20
	定格轉速 Rated speed (rpm)	40	26.7	20	13.3	10	5.7	3.3	2.8	1.9
24V	定格扭力 Rated torque (kgf-cm)	2.5	3.7	5	7.5	10	10	20	20	20
	定格轉速 Rated speed (rpm)	78	52	39	26	19.5	11.1	6.5	5.6	3.7

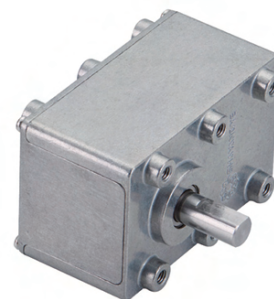
馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	200	2000	≤1.0	2800	≤0.35	4.1	145
24	250	3900	≤1.23	5000	≤0.4	10	145

馬達單體特性 / Motor Characteristics

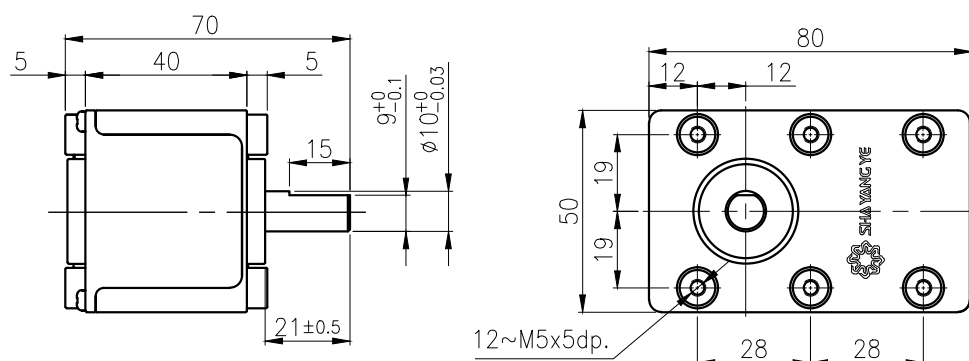


# WG-50



## 外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

## 產品規格 / Product Specifications

外殼材質 Housing material	輸出軸承型式 Output shaft bearing	徑向負荷 Radial load (10mm from flange)	軸向負荷 Shaft axial load	主軸承受壓入力 Shaft press fit force	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙 (無負荷時) Backlash, at no-load
金屬 Metal	滾珠軸承 Ball bearings	≤20kgf	≤10kgf	≤30kgf	≤0.05mm	≤0.5mm	≤3°

## 馬達齒輪型式 / Pinion Specification

模數 Module	齒數 No. of teeth	壓力角 Pressure angle	孔徑 (mm) Hole diameter	減速比 Reduction ratio
0.6	1	20°	∅3.98	全機種通用 Practicable

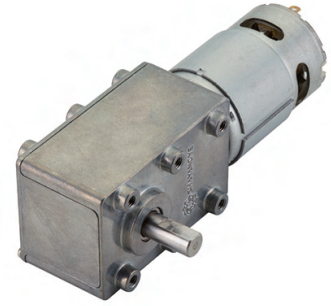
## 標準減速比型式 / Gearboxes Specifications

減速比 Reduction ratio	1/50	1/75	1/100	1/120	1/200	1/350	1/600	1/700	1/1050
定格容許扭力 (kgf-cm max.) Rated tolerance torque	7	10	13	15	25	30	40	40	40
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	14	20	26	30	50	60	80	80	80
效率 Efficiency	34%	34%	34%	34%	34%	34%	28%	28%	28%
重量 Weight (g)	450	450	450	450	450	450	480	480	480

- 使用相對溼度：20%~85%RH  
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C  
Operating temperature range
- WG系列只搭配馬達販售  
WG series are only sold with motors.

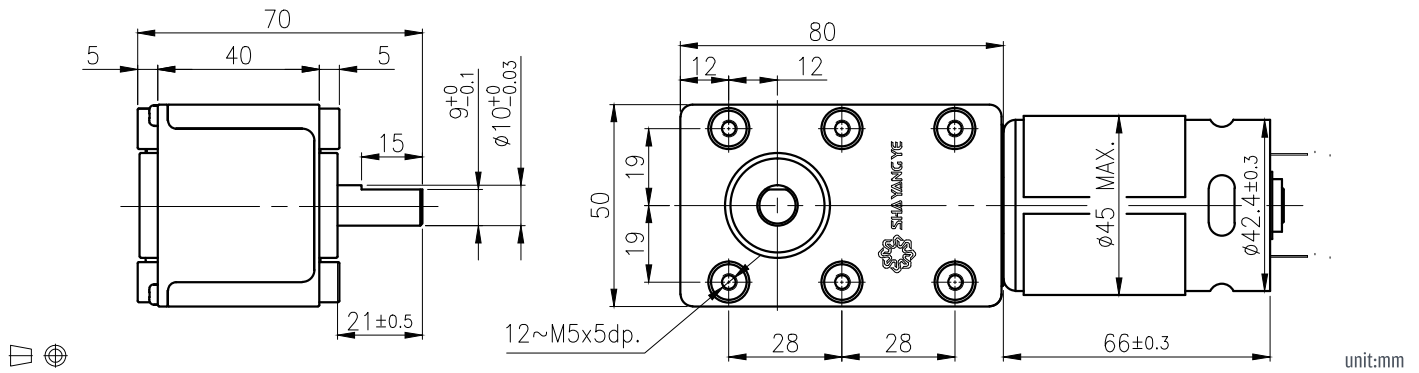
# WG-50GM

## 01 & 02 TYPE



外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



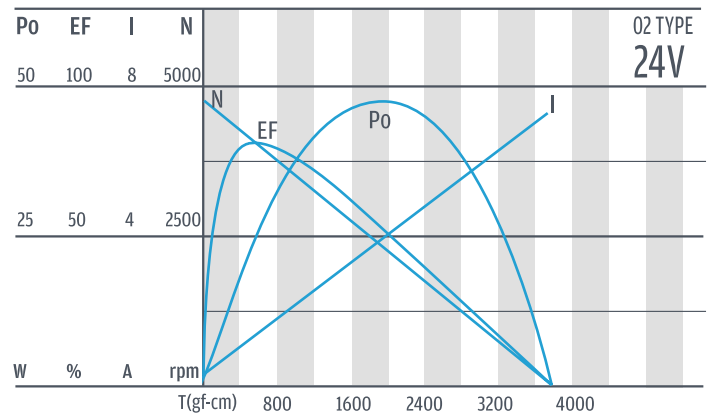
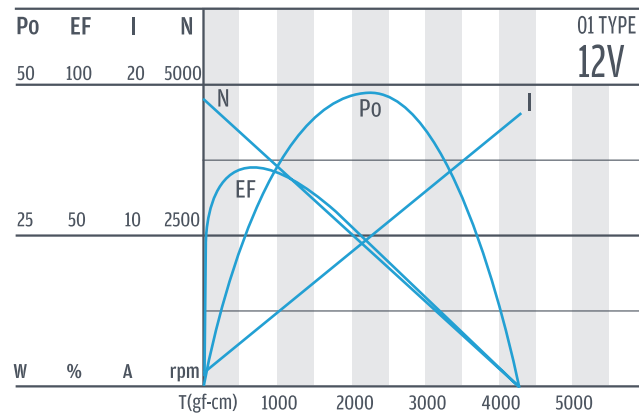
齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

		減速比 Reduction ratio	1/50	1/75	1/100	1/120	1/200	1/350	1/600	1/700	1/1050
12V	定格扭力 Rated torque (kgf-cm)		6.1	9.1	12.2	14.6	24.4	30	40	40	40
	定格轉速 Rated speed (rpm)		77	51.3	38.5	32	19.3	11	6.4	5.5	3.7
24V	定格扭力 Rated torque (kgf-cm)		5.6	8.4	11.2	13.4	22.4	30	40	40	40
	定格轉速 Rated speed (rpm)		77.8	51.9	38.9	32.4	19.5	11.1	6.5	5.6	3.7
軸心迴轉方向 Rotation direction			CCW				CW				

馬達單體型式 / Motor Data

定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	610	3850	≤2.8	4600	≤0.65	24.2	360
24	560	3890	≤1.3	4600	≤0.3	22.3	360

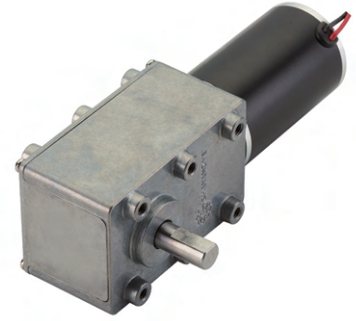
馬達單體特性 / Motor Characteristics





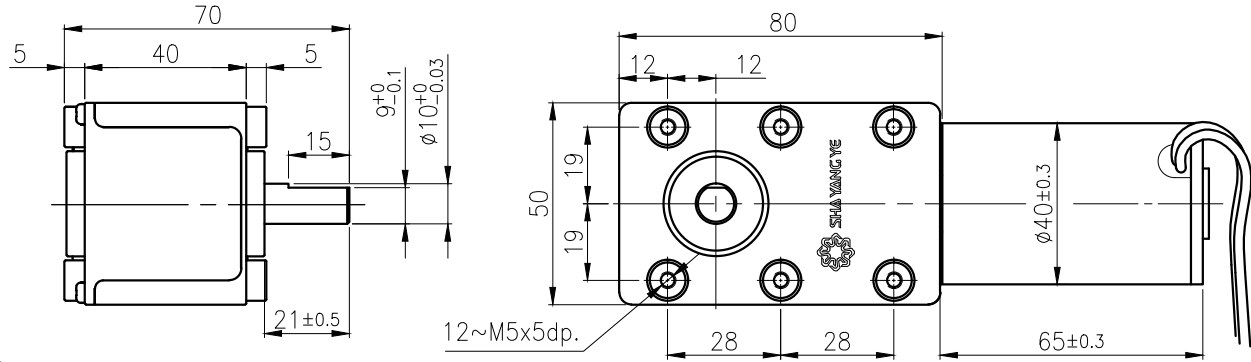
# WG-50GM

## 03 & 04 TYPE



外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

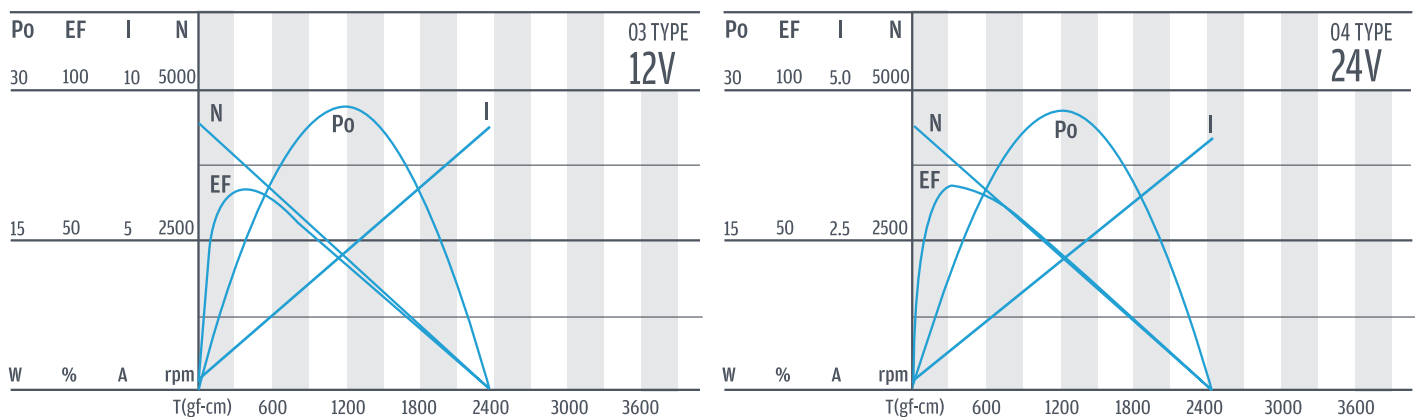
齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

	減速比 Reduction ratio	1/50	1/75	1/100	1/120	1/200	1/350	1/600	1/700	1/1050						
12V	定格扭力 Rated torque (kgf-cm)	4.3	6.4	8.6	10.3	17.2	30	40	40	40						
	定格轉速 Rated speed (rpm)	75	50	37.5	31.3	18.8	10.7	6.3	5.4	3.6						
24V	定格扭力 Rated torque (kgf-cm)	3.5	5.2	7	8.4	14	24.5	40	40	40						
	定格轉速 Rated speed (rpm)	76	50.7	38	31.7	19	10.9	6.3	5.4	3.6						
	軸心迴轉方向 Rotation direction	CW					CCW									

馬達單體型式 / Motor Data

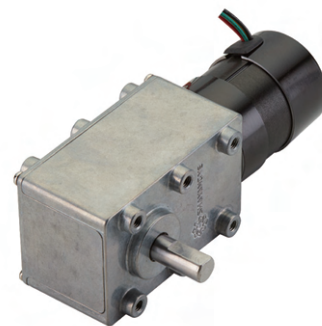
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	430	3750	≤2.0	4500	≤0.5	16.56	310
24	350	3800	≤0.82	4500	≤0.22	13.65	310

馬達單體特性 / Motor Characteristics



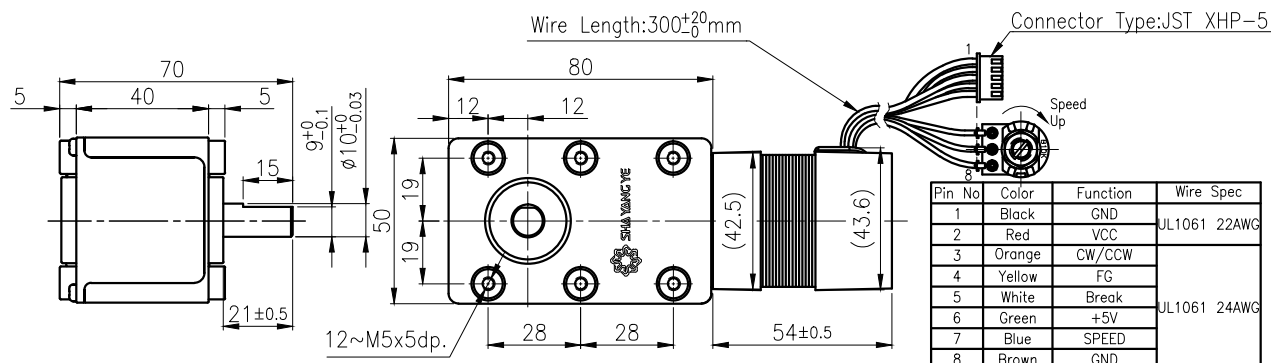
# WG-50GM

## 41 & 42 TYPE



### 外形尺寸 / Appearance Size

可選擇單出軸或者雙出軸 / Single or dual output shaft are both available



unit:mm

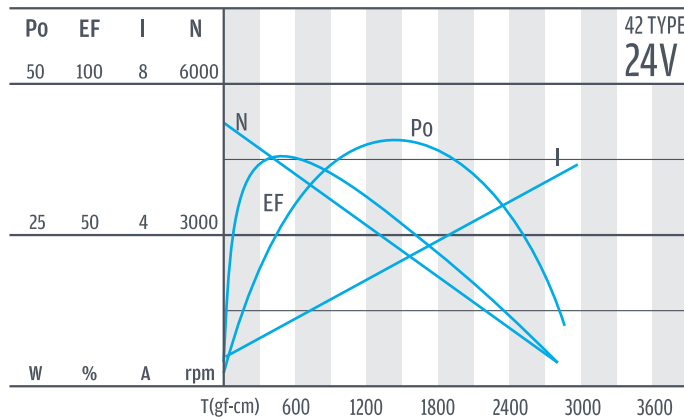
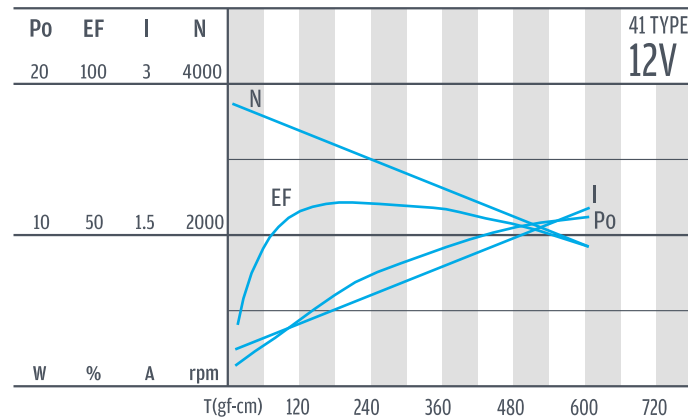
### 齒輪箱馬達轉矩 & 速度 / Gear Motor Torque & Speed

	減速比 Reduction ratio	1/50 1/75 1/100 1/120 1/200 1/350 1/600 1/700 1/1050								
		12V	2.0	3.0	4.0	4.8	8.0	14	24	28
	定額轉速 Rated speed (rpm)	60	40	30	25	15	8.6	5	4.3	2.9
24V	定額轉速 Rated speed (rpm)	88	58.7	44	36.7	22	12.6	7.3	6.3	4.2

### 馬達單體型式 / Motor Data

定額電壓 Rated volt (V)	定額扭力 Rated torque (gf-cm)	定額轉速 Rated speed (rpm)	定額電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定額出力 Rated output (W)	重量 Weight (g)
12	200	3000	≤0.8	3700	≤0.16	6.16	260
24	370	4400	≤1.0	5000	≤0.25	16.7	260

### 馬達單體特性 / Motor Characteristics





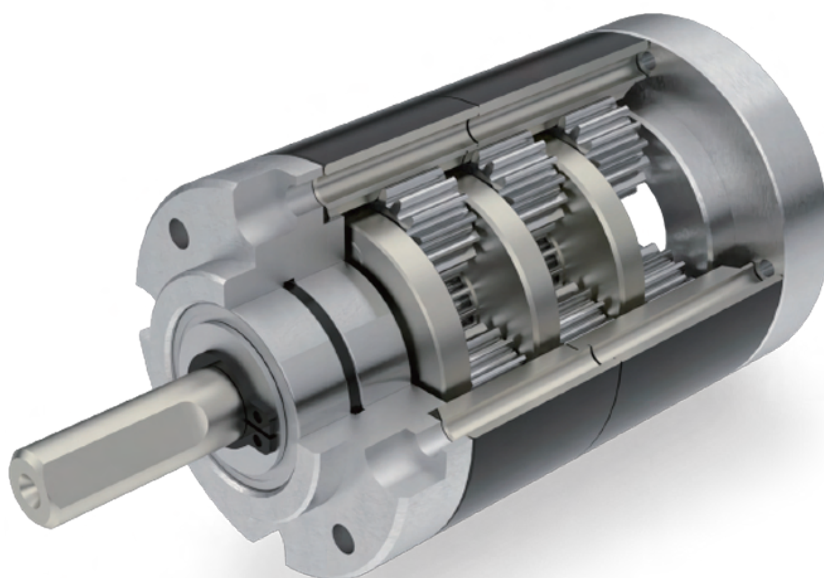
# Precision Planetary gearbox

PG series

## 精密型行星式齒輪箱 Precision Planetary Gearbox

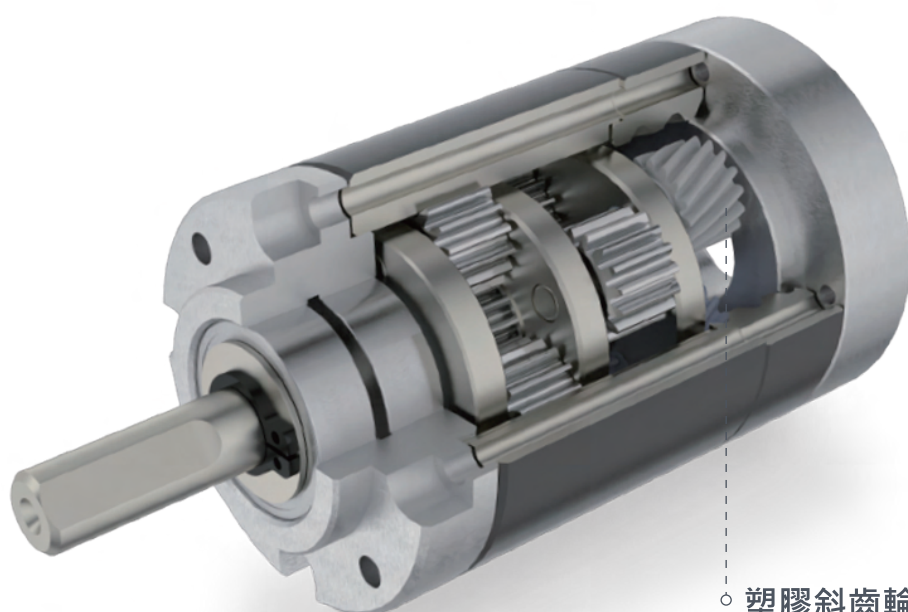
### 標準精密型行星式齒輪箱 Standard Precision Planetary Gearbox

- 可承受扭力大  
High Torque
- 效率高  
High Efficiency
- 背隙小  
Low Backlash



### 低噪音精密型行星式齒輪箱 Low Noise Precision Planetary Gearbox

- 低噪音  
Low Noise
- 可承受扭力大  
High Torque
- 效率高  
High Efficiency
- 背隙小  
Low Backlash

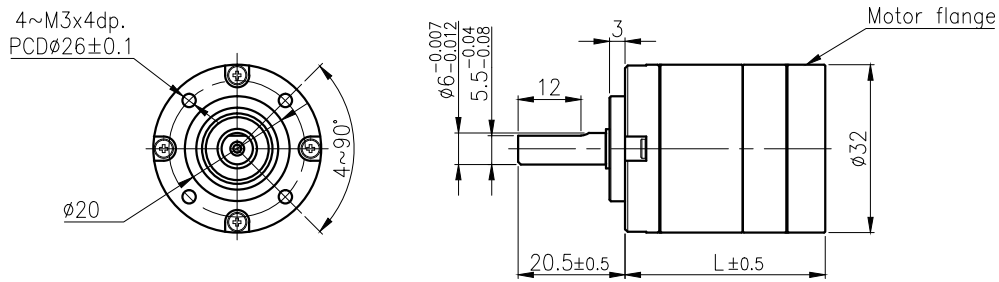


○ 塑膠斜齒輪可降低噪音  
Plastic helical gear for low noise

# PG-32



## 外形尺寸 / Appearance Size



unit:mm

## 產品規格 / Product Specifications

版本 Version	級數 Number of stages	外殼材質 Housing material	輸出軸承型式 Bearing at output	徑向負荷 Radial load (10mm from flange)	軸向負載 Shaft axial load	主軸最大承受壓力 Shaft press fit force, max.	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
PG-32 標準版/Standard	1	金屬 Metal	滾珠軸承 Ball bearings	≤ 4 kgf	≤1 kgf	≤ 10 kgf	≤0.05 mm	≤ 0.3mm	≤1.45°
	2	金屬 Metal	滾珠軸承 Ball bearings	≤ 7 kgf	≤2 kgf	≤ 10 kgf	≤0.05 mm	≤ 0.3 mm	≤1.50°
	3	金屬 Metal	滾珠軸承 Ball bearings	≤10 kgf	≤3 kgf	≤ 10 kgf	≤0.05 mm	≤ 0.3 mm	≤1.55°

## 標準減速比型式 / Gearboxes Specifications

級數 Number of stages	1	2	3
減速比 Reduction ratio	1/4(3.71), 1/4(4.29), 5, 7	1/14, 1/16, 1/18, 1/19, 1/22, 1/25, 1/27, 1/29, 1/35, 1/46	1/51, 1/59, 1/68, 1/71, 1/79, 1/93, 1/95, 1/100, 1/107, 1/115, 1/124, 1/130, 1/139, 1/150, 1/169, 1/181, 1/195, 1/236, 1/308
定格容許扭力(kgf-cm Max.) Rated tolerance torque	6.75	20	40
瞬間容許扭力(kgf-cm) Max Momentary tolerance torque	10	30	60
效率(%) Efficiency	80	75	70
長度(mm) * 1 Length(L)	26	35.8	45.5
重量 * 2 Weight(g)	150	200	250

• 使用相對溼度:20%-85%RH      • 使用溫度範圍: -30°C~+100°C  
 Operating relative humidity      Operating temperature range

\* 1 參考值 · 我們會依選用的馬達而進行下蓋尺寸的優化設計  
 Reference. The flange size will be optimized according to the selected motor.

\* 2 參考值 · 重量會因部分零件的材質與尺寸不同而有所差異  
 Reference. The weight will vary due to the material and size of some parts.

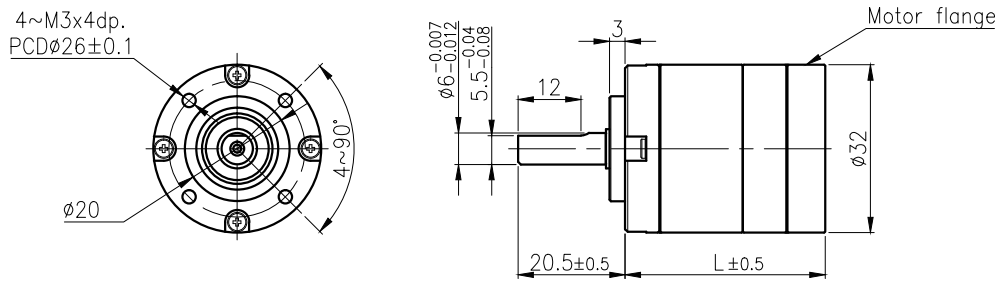
IG

# PG-32LN



Right Angle

## 外形尺寸 / Appearance Size



unit:mm

RA

RB

## 產品規格 / Product Specifications

版本 Version	級數 Number of stages	外殼材質 Housing material	輸出軸承型式 Bearing at output	徑向負荷 Radial load (10mm from flange)	軸向負載 Shaft axial load	主軸最大承受壓入力 Shaft press fit force, max.	徑向間隙 Radial play of shaft	軸向間隙 Thrust play of shaft	背隙(無負荷時) Backlash, at no-load
PG-32LN	2	金屬 Metal	滾珠軸承 Ball bearings	≤ 7 kgf	≤ 2 kgf	≤ 10 kgf	≤ 0.05 mm	≤ 0.3mm	≤ 1.50°
低噪版/Noise Reduced	3	金屬 Metal	滾珠軸承 Ball bearings	≤ 10 kgf	≤ 3 kgf	≤ 10 kgf	≤ 0.05 mm	≤ 0.3 mm	≤ 1.55°

WG

## 標準減速比型式 / Gearboxes Specifications

級數 Number of stages	2	3
減速比 Reduction ratio	1/14, 1/16, 1/18, 1/19, 1/22, 1/25, 1/27, 1/29, 1/35, 1/46	1/51, 1/59, 1/68, 1/71, 1/79, 1/93, 1/95, 1/100, 1/107, 1/115, 1/124, 1/130, 1/139, 1/150, 1/169, 1/181, 1/195, 1/236, 1/308
定格容許扭力(kgf-cm Max.) Rated tolerance torque	20	40
瞬間容許扭力(kgf-cm) Max Momentary tolerance torque	30	60
效率(%) Efficiency	75	70
長度(mm) * 1 Length(L)	35.8	45.5
重量 * 2 Weight(g)	200	250

• 使用相對溼度:20%-85%RH      • 使用溫度範圍: -30°C~+100°C  
Operating relative humidity      Operating temprature range

\* 1 參考值 · 我們會依選用的馬達而進行下蓋尺寸的優化設計  
Reference. The flange size will be optimized according to the selected motor.

\* 2 參考值 · 重量會因部分零件的材質與尺寸不同而有所差異  
Reference. The weight will vary due to the material and size of some parts.

Encoder

Driver

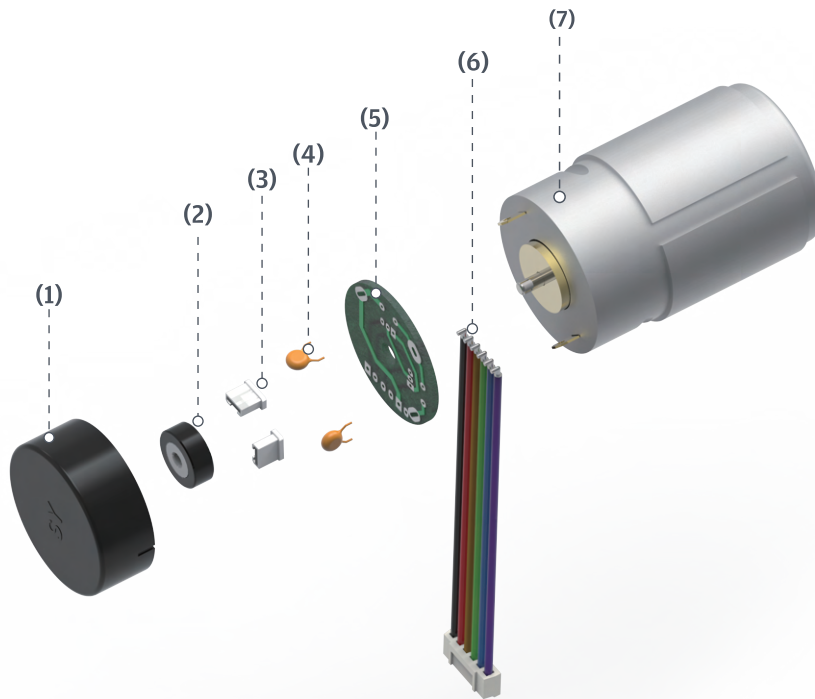


# Others

Encoder  
Driver

# 磁性式編碼器

## MAGNETIC ENCODER



1	上蓋	Cap
2	磁石	Magnet
3	霍爾組	Hall sensor
4	電容器	Capacitor
5	電路板	PCB
6	電線組	Wire harness
7	馬達	Motor

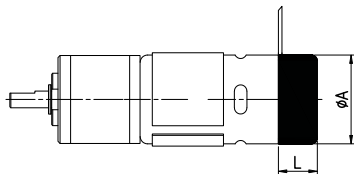


# Magnetic Encoders

Two Channel Hall Effect Encoder 雙向霍爾作用編碼器  
 One Channel Hall Effect Encoder 單向霍爾作用編碼器

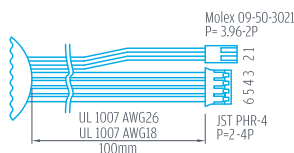
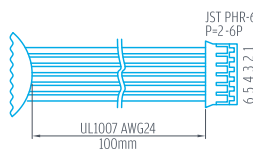
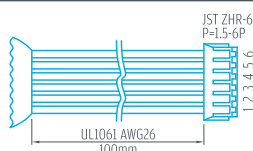


馬達外徑 & 長度/



★ WITHOUT CAP

Motor (φA)	Cap (L)	Counts poles of per turn (PPR)	
		Current	limit.
∅ 12	★ 6.5	2, 6 (1, 3)	6 (3)
∅ 15.4	★ 6.5	2, 6 (1, 3)	6 (3)
∅ 20.3	★ 8.5	2, 6 (1, 3)	6 (3)
∅ 22	12.6	2, 6 (1, 3)	6 (3)
∅ 30	12.1	2, 6, 14 (1, 3, 7)	14 (7)
∅ 32	14.3	14 (7)	14 (7)
∅ 36	13.5	14 (7)	14 (7)
∅ 42.5	15.5	2, 10 (1, 5)	10 (5)
∅ 52 & ∅ 54	18	2, 10 (1, 5)	10 (5)



**Two Channel Encoder Connections**

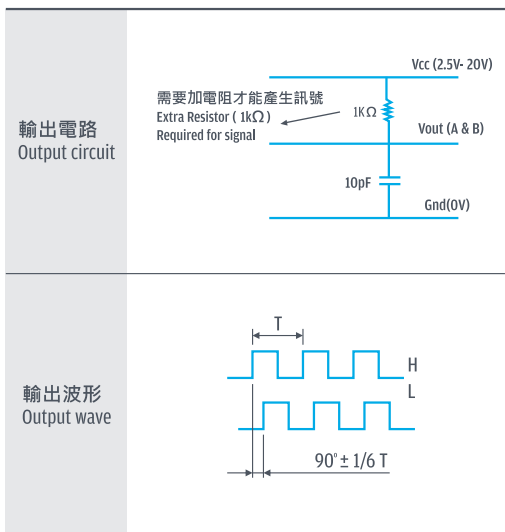
1. Black : - Motor
2. Red : + Motor
3. Brown : Hall Sensor Vcc
4. Green : Hall Sensor GND
5. Blue : Hall Sensor A Vout
6. Purple : Hall Sensor B Vout

**One Channel Encoder Connections**

1. Black : - Motor
2. Red : + Motor
3. Brown : Hall Sensor Vcc
4. Green : Hall Sensor GND
5. Blue : Hall Sensor A Vout
6. Purple : EMPTY

電氣特性/ Electrical Characteristics

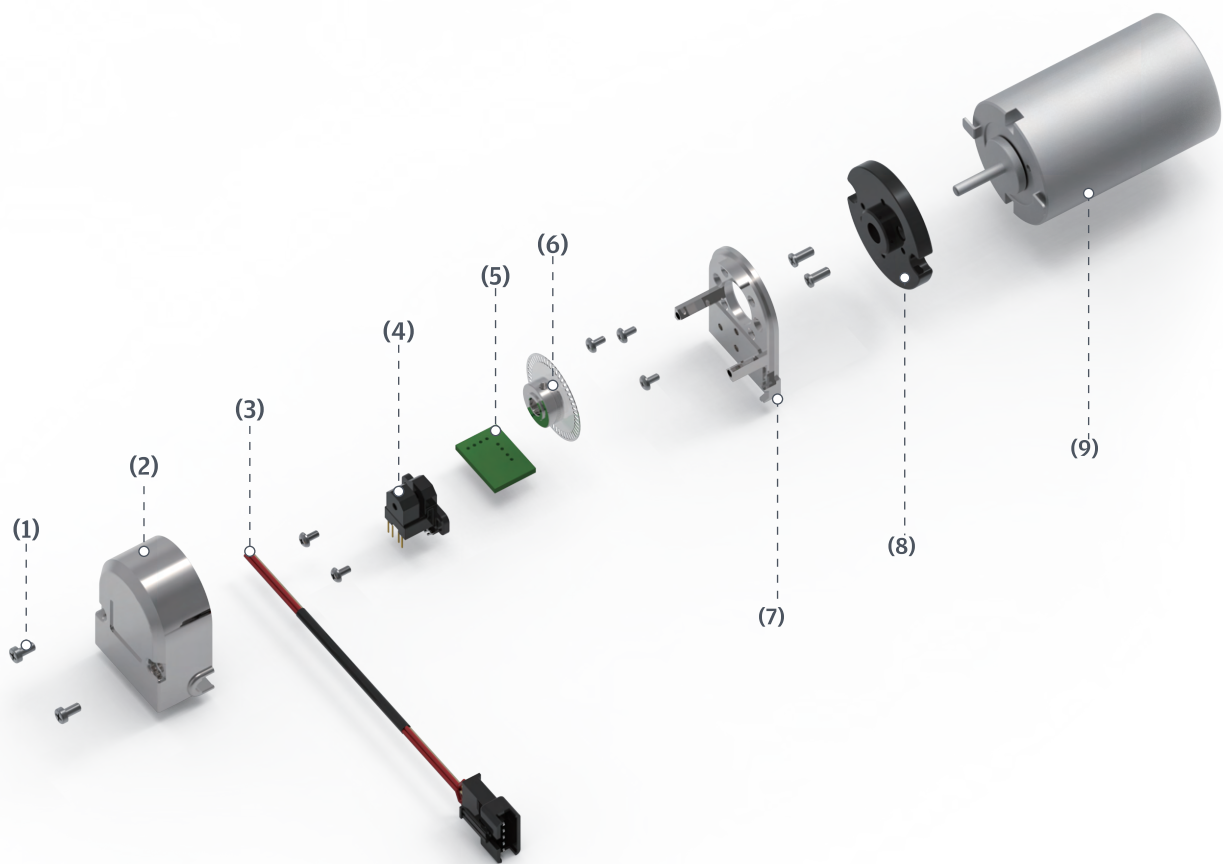
規格特性 Characteristics	代號 Symbol	測試條件 Test conditions	極小 Min.	基準 Ref.	最大 Max.	單位 Units
輸入電壓 Supply voltage	Vcc	--	2.5	-	20	V
輸出飽和電壓 Output saturation voltage	Vce (sat)	Vcc = 14V ; IC = 20mA	-	300	700	mV
輸出漏電流 Output leakage current	Icex	Vcc = 14V ; Vcc = 14V	-	< 0.1	10	μA
輸入電流 Supply current	Ice	Vcc = 20V Output open	-	5	10	mA
輸出上升時間 Output rise time	tr	Vcc = 14V ; RL = 820 Ω ; CL = 20pF	-	0.3	1.5	μS
輸出下降時間 Output fall time	tr	Vcc = 14V ; RL = 820 Ω ; CL = 20pF	-	0.3	1.5	μS



- 使用相對溼度 : 20%~85%RH  
Operating relative humidity
- 使用溫度範圍 : -10°C~+60°C  
Operating temperature range

IG  
Right Angle  
RA  
RB  
WG  
PG  
Encoder  
Driver

# 光學式編碼器 OPTICAL ENCODER



1	螺絲	Screw
2	上蓋	Cap
3	電線組	Wire harness
4	編碼器	Encoder
5	電路板	PCB

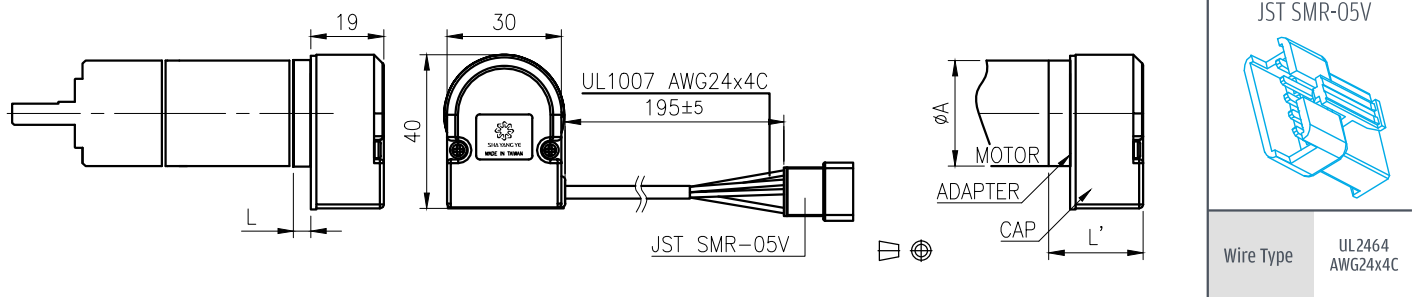
6	碼盤	Hub-Disc
7	下蓋	Base plate
8	連接板	Adaptor
9	馬達	Motor

# OPTICAL Encoders

Two Channel Optical Encoders 雙向光學式編碼器



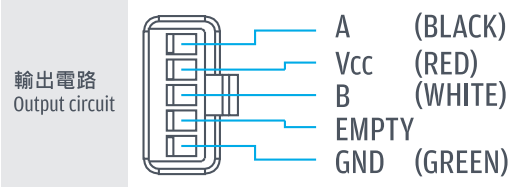
馬達外徑 & 長度/



## 電氣特性/ Electrical Characteristics

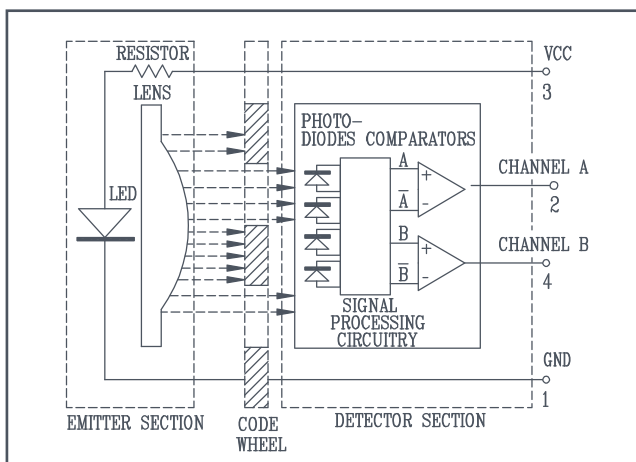
規格特性 Characteristics	規格 SPECIFICATION
輸入電壓 Supply Voltage Vcc	5V ± 10%
相位差 Phase shift	90°e ± 45°e
訊號上升時間 Signal rise time (typically, at CL=25pF, RL=11k, 25°C)	6 ns
訊號下降時間 Signal fall time (typically, at CL=25pF, RL=11k, 25°C)	6 ns
讀取頻率 Count frequency	20~80 kHz
負載端電容 Load Capaitance	100pf
通道輸出電流 Output current per channel	± 20mA

Motor	Overall Length (L')		Resolution
	Adapter (L)	Cap	
∅ 28	4.5 ± 0.5 mm	19 mm	100/200/256 360/400/500
∅ 36	4.5 ± 0.5 mm	19 mm	
∅ 40	None	19 mm	
∅ 42	10 ± 0.5 mm	19 mm	

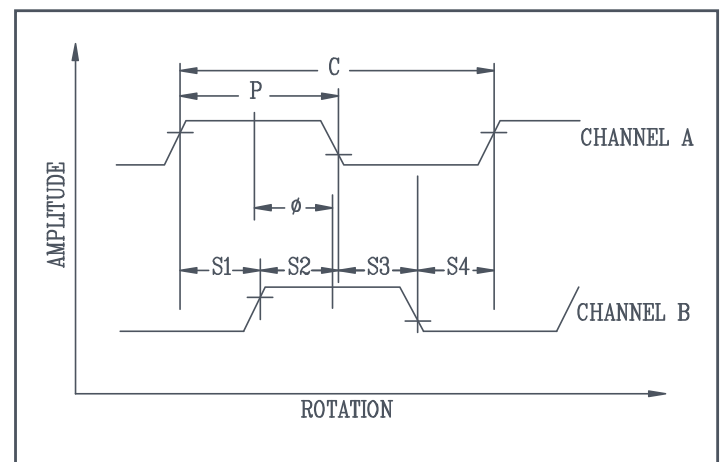


● 使用相對溼度：20%~85%RH ● 使用溫度範圍：-10°C~+60°C  
Operating relative humidity Operating temperature range

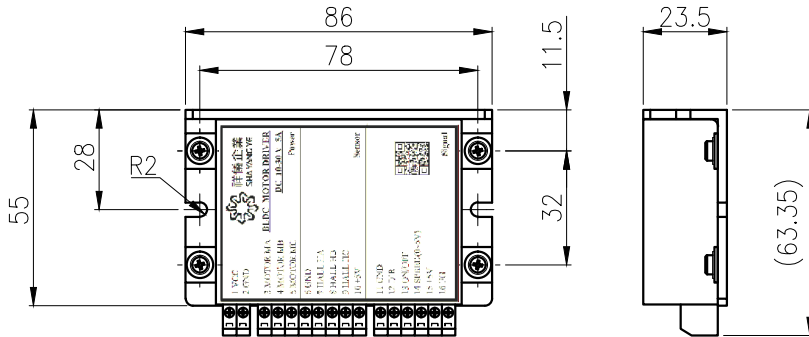
## 方塊示意圖 / Block Diagram



## 輸出波型 / Output Waveform



# BLDC Motor Driver

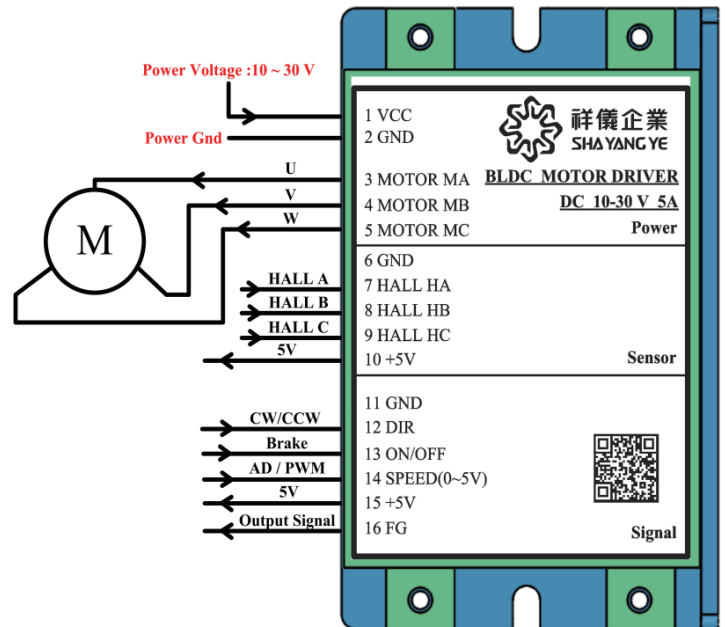


unit:mm

## 基本技術資訊 Basic technical information

1	輸入電壓 Operation input voltage	10-30	V
2	最大輸出電流 Maximum output current	5	A
3	輔助輸出電壓 Auxiliary output voltage	5	V
4	輔助輸出電流 Auxiliary output current	80	mA
5	速度緩上升時間 Slow rise time speed	100	ms
6	速度緩下降時間 Slow fall time speed	100	ms
7	速度控制訊號 Speed control signal	Analog voltage / PWM	V
8	正反轉 clockwise/counterclockwise	Yes	
9	馬達煞車功能 Motor brake function	Yes	
10	過載保護 Overload protection	Yes	
11	輸出轉速訊號 Output speed signal	Yes	

## 接線資訊 External connection information



## 接線功能表 Wiring function list

MOTOR MA	連接馬達輸入 U 相位置 Connect motor input U phase
MOTOR MB	連接馬達輸入 V 相位置 Connect motor input V phase
MOTOR MC	連接馬達輸入 W 相位置 Connect motor input W phase
HALL HA	連接馬達輸出霍爾訊號 A Motor output Hall signal A
HALL HB	連接馬達輸出霍爾訊號 B Motor output Hall signal B
HALL HC	連接馬達輸出霍爾訊號 C Motor output Hall signal C
DIR	切換馬達正反轉方向 Switch motor rotation direction
ON / OFF	可調整馬達煞車功能 Motor brake function
SPEED	可調整馬達旋轉速度 Motor speed adjustment
FG	可提供馬達輸出轉速訊號 Motor output speed signal

IG

Right Angle

RA

RB

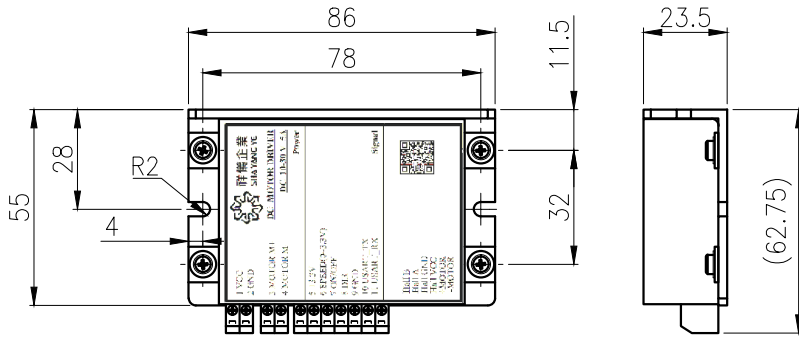
WG

PG

Encoder

Driver

# BLDC Sensorless Motor Driver

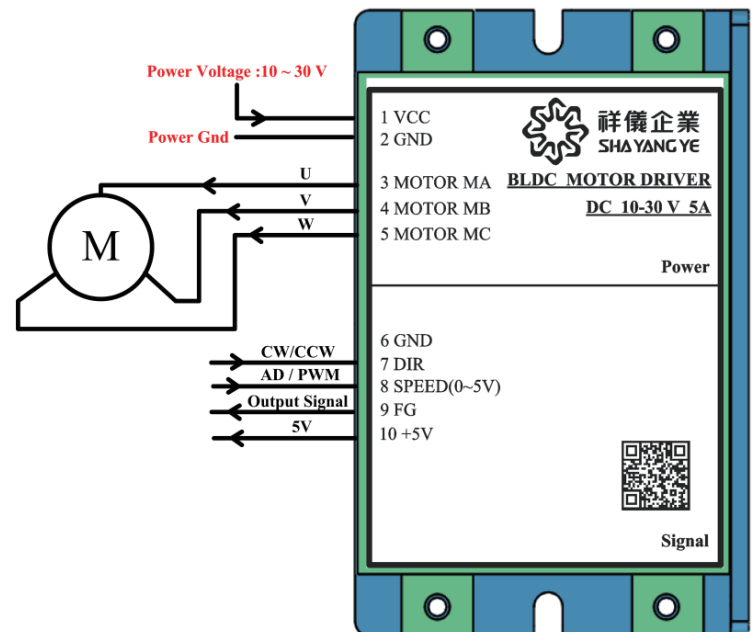


unit:mm

## 基本技術資訊 Basic technical information

1	輸入電壓 Operation input voltage	10~30	V
2	最大輸出電流 Maximum output current	5	A
3	輔助輸出電壓 Auxiliary output voltage	5	V
4	輔助輸出電流 Auxiliary output current	80	mA
5	速度緩上升時間 Slow rise time speed	3	S
6	速度緩下降時間 Slow fall time speed	3	S
7	速度控制訊號 Speed control signal	Analog voltage / PWM	V
8	正反轉 clockwise/counterclockwise	Yes	
9	馬達煞車功能 Motor brake function	No	
10	過載保護 Overload protection	Yes	
11	輸出轉速訊號 Output speed signal	Yes	

## 接線資訊 External connection information



## 接線功能表 Wiring function list

MOTOR MA	連接馬達輸入 U相位置 Connect motor input U phase
MOTOR MB	連接馬達輸入 V相位置 Connect motor input V phase
MOTOR MC	連接馬達輸入 W相位置 Connect motor input W phase
DIR	切換馬達正反轉方向 Switch motor rotation direction
SPEED	可調整馬達旋轉速度 Motor speed adjustment
FG	可提供馬達輸出轉速訊號 Motor output speed signal

IG

Right Angle

RA

RB

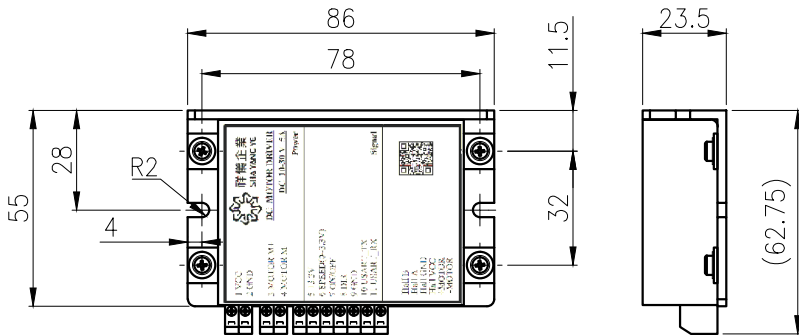
WG

PG

Encoder

Driver

# DC Motor Driver



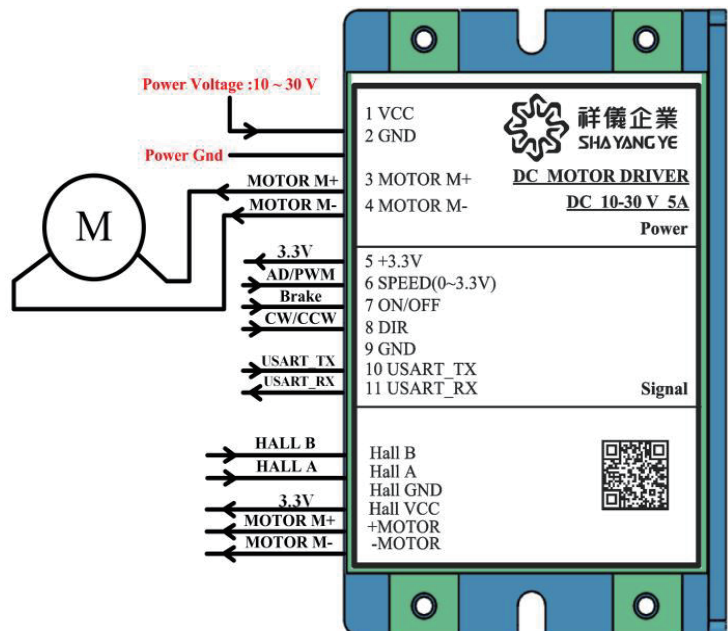
unit:mm



## 基本技術資訊 Basic technical information

1	輸入電壓 Operation input voltage	10-30	V
2	最大輸出電流 Maximum output current	5	A
3	輔助輸出電壓 Auxiliary output voltage	3.3	V
4	輔助輸出電流 Auxiliary output current	200	mA
5	速度緩上升時間 Slow rise time speed	200	ms
6	速度緩下降時間 Slow fall time speed	200	ms
7	速度控制訊號 Speed control signal	Analog voltage / PWM	V
8	正反轉 clockwise/counterclockwise	Yes	
9	馬達煞車功能 Motor brake function	Yes	
10	過載保護 Overload protection	Yes	
11	輸出轉速訊號 Output speed signal	Yes	

## 接線資訊 External connection information



## 接線功能表 Wiring function list

MOTOR M +	連接馬達正電位置 Motor positive voltage
MOTOR M -	連接馬達負電位置 Motor Negative voltage
DIR	切換馬達正反轉方向 Switch motor rotation direction
ON / OFF	可調整馬達煞車功能 Motor brake function
SPEED	可調整馬達旋轉速度 Motor speed adjustment
USART_TX	傳輸訊號與數據的發送 Signal and data transmission
USART_RX	傳輸訊號與數據的接收 Signal and data reception

## 祥儀標準品規格接線表 Sha Yang Ye specification Wiring list

- MOTOR	連接馬達負電位置 Motor negative voltage
+ MOTOR	連接馬達正電位置 Motor positive voltage
Hall A	連接輸出編碼器A相訊號 Connect output encoder A signal
Hall B	連接輸出編碼器B相訊號 Connect output encoder B signal

IG

Right Angle

RA

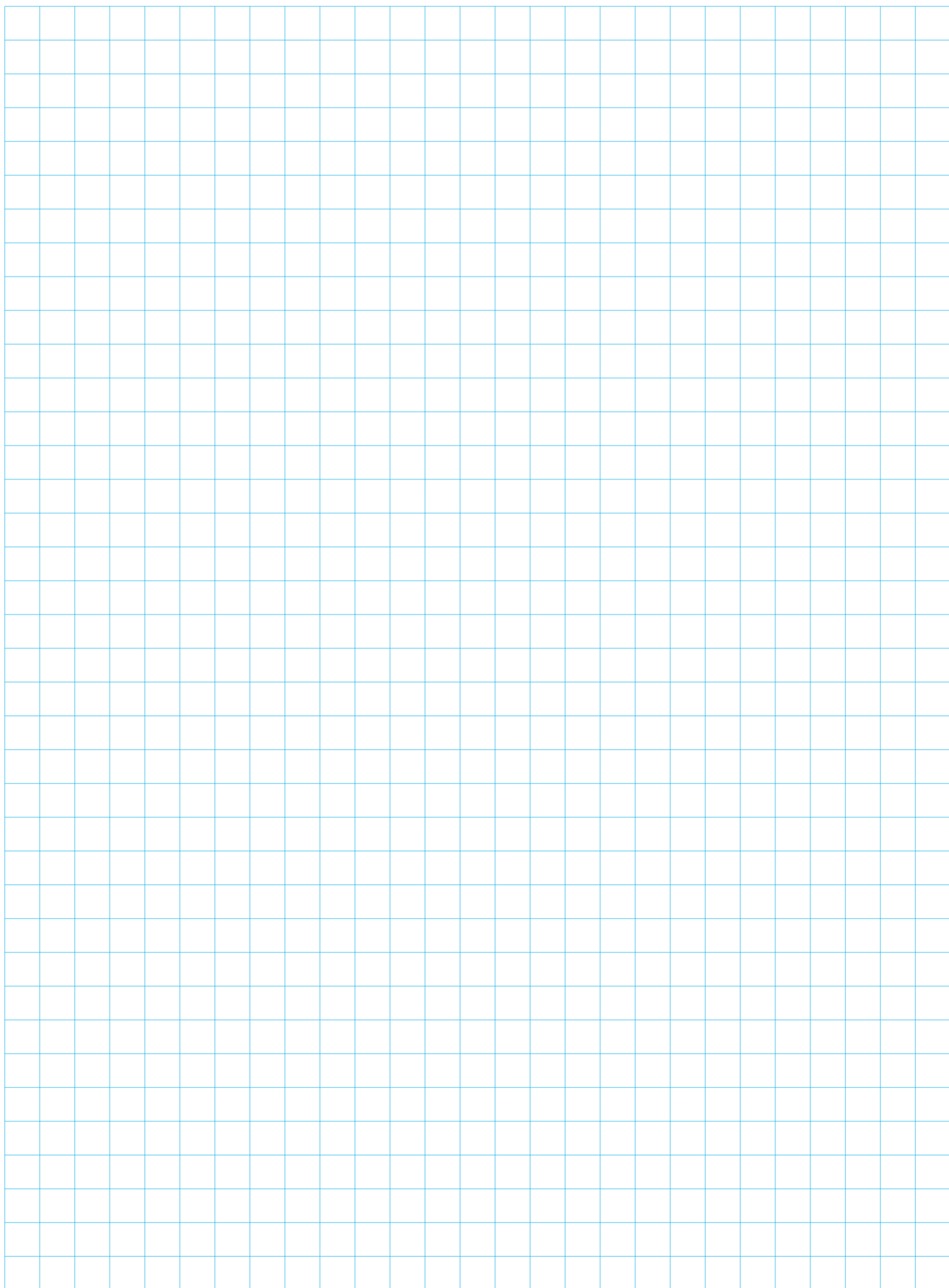
RB

WG

PG

Encoder

Driver



Drive Motion Drive Passion