

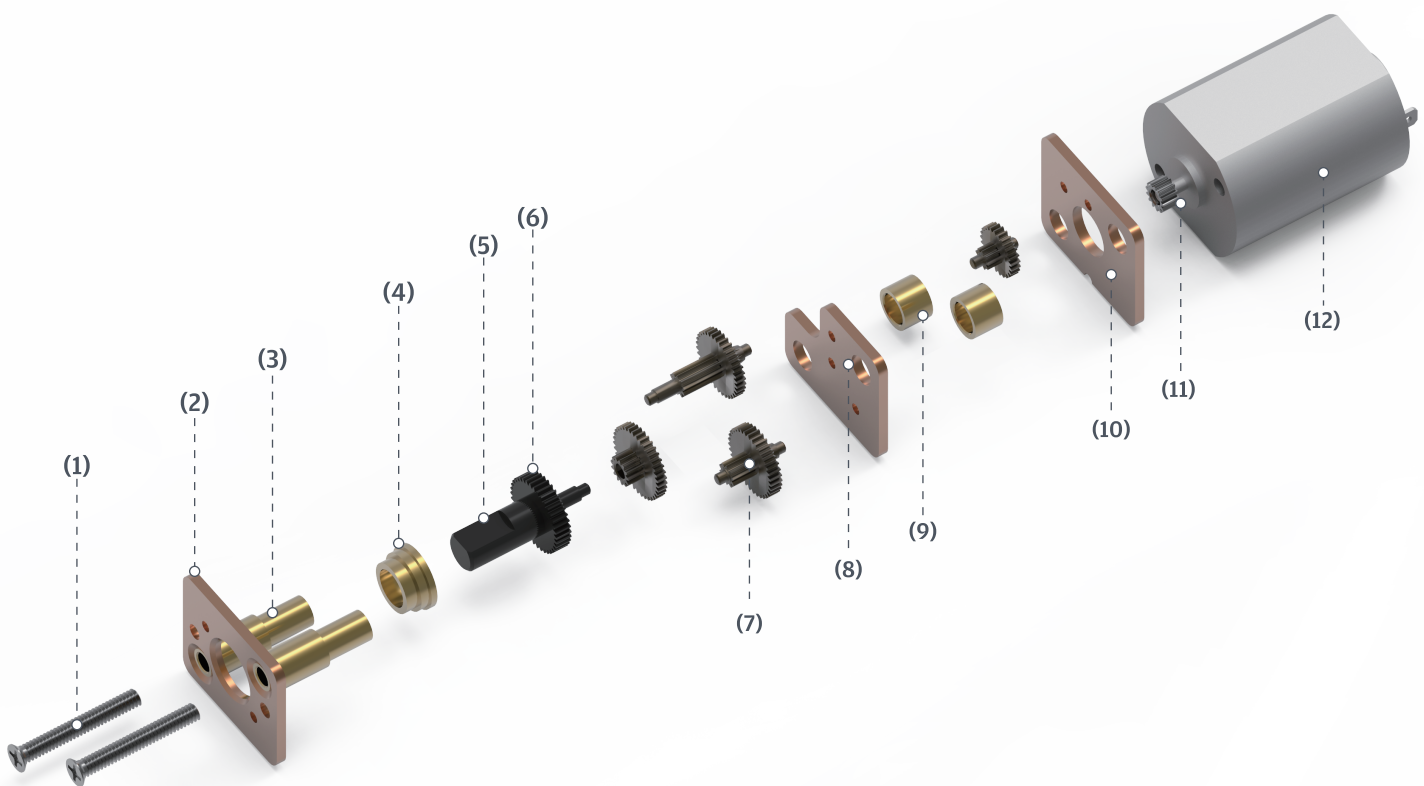


Spur Gearbox & Gear Motor

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

正齒齒輪箱 (中心出軸)

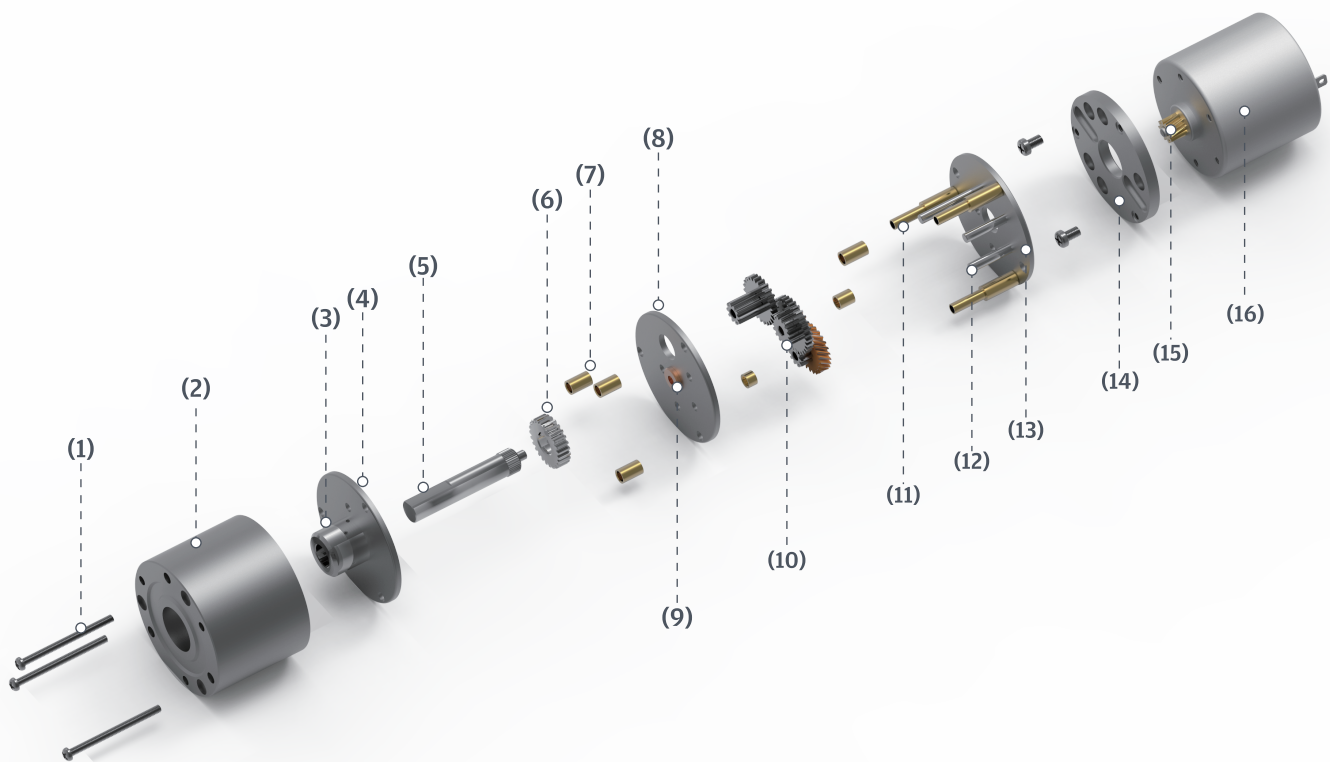
RA series (Center Output Shaft)



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

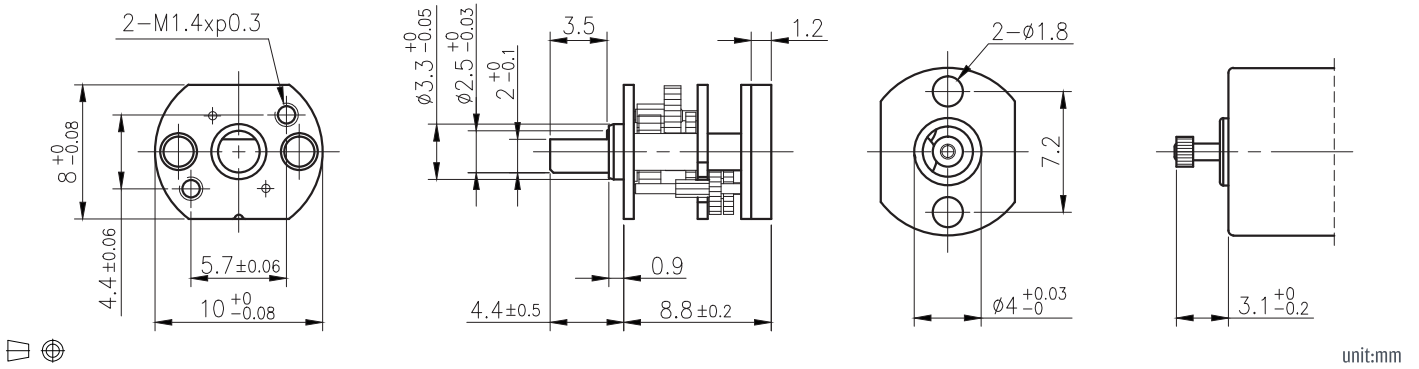
IG

RA-10W



Right Angle

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



RA

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	≤0.2kg	≤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

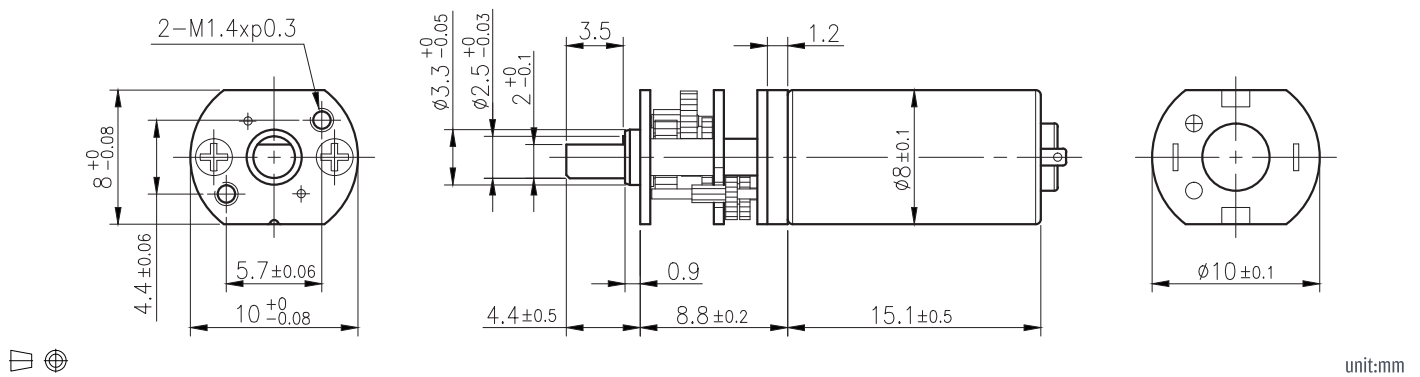
Driver

RA-10WGM

01 & 02 TYPE



外形尺寸/ Appearance Size



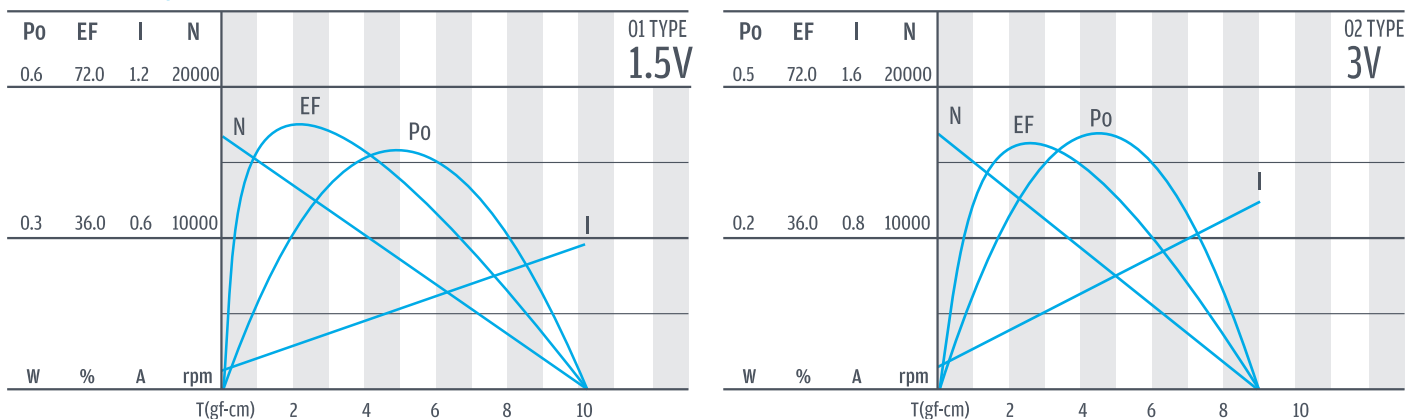
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	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



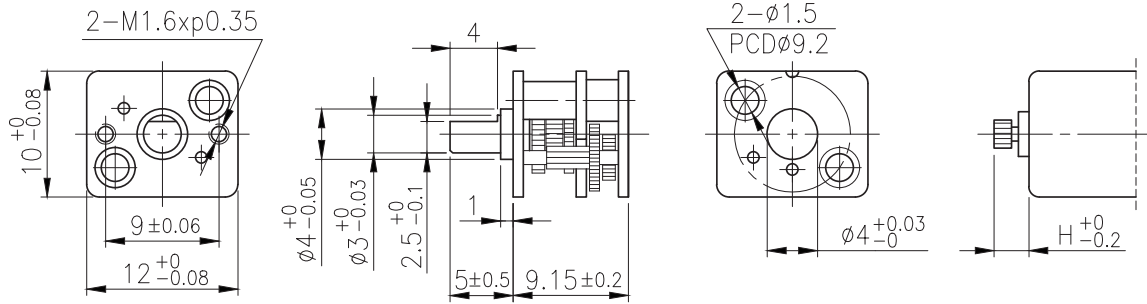
IG

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 (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

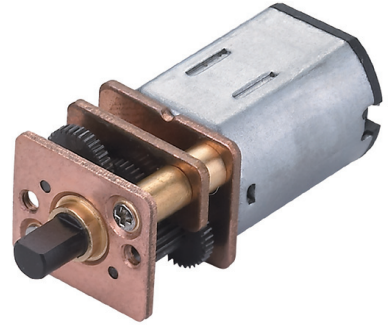
Encoder

Driver

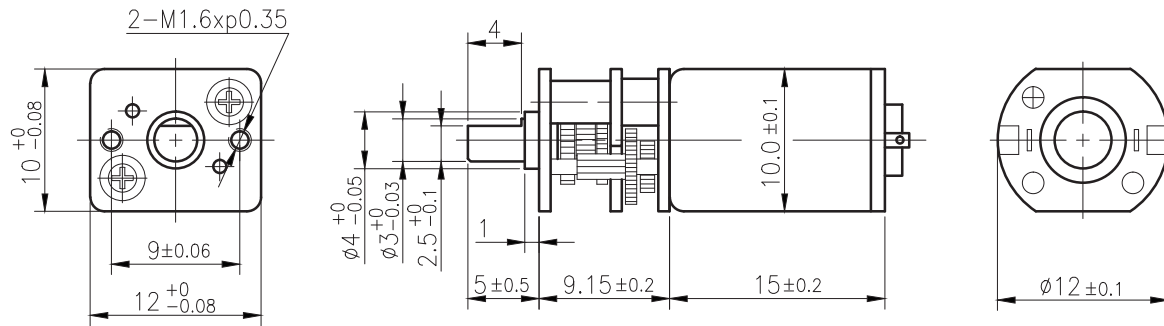
- 使用相對溼度：20%~85%RH
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C
Operating temperature range

RA-12WGM

01 & 02 TYPE



外形尺寸/ Appearance Size



unit:mm

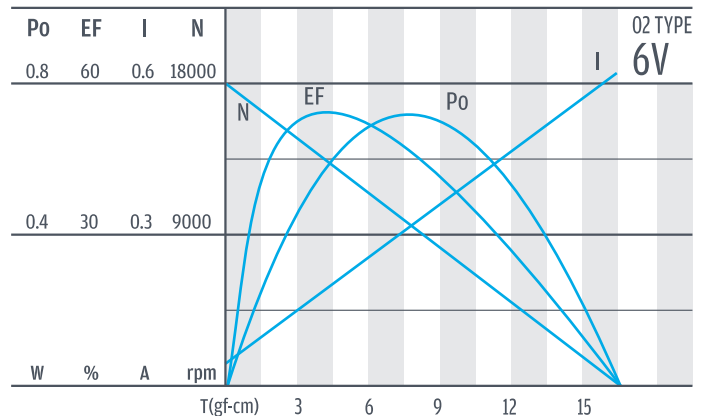
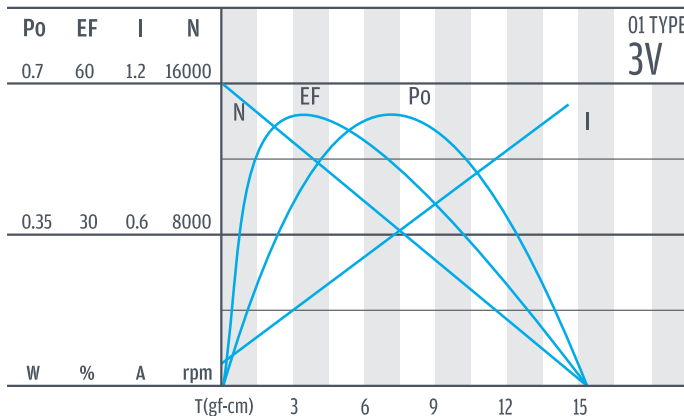
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

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

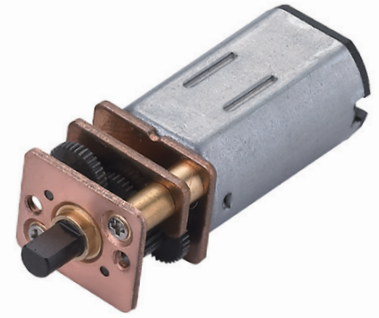
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
3	2	14000	≤0.25	16000	≤0.08	0.287	5.5
6	3	14900	≤0.17	18000	≤0.05	0.46	5.5

馬達單體特性/ Motor Characteristics

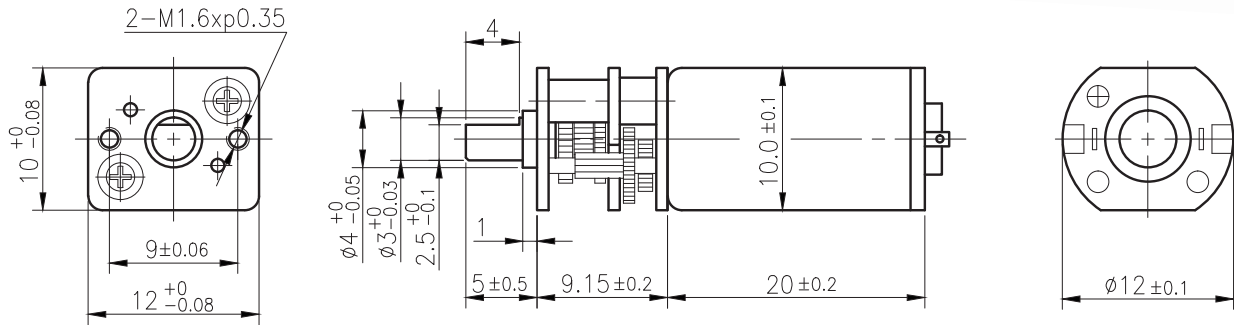


RA-12WGM

03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

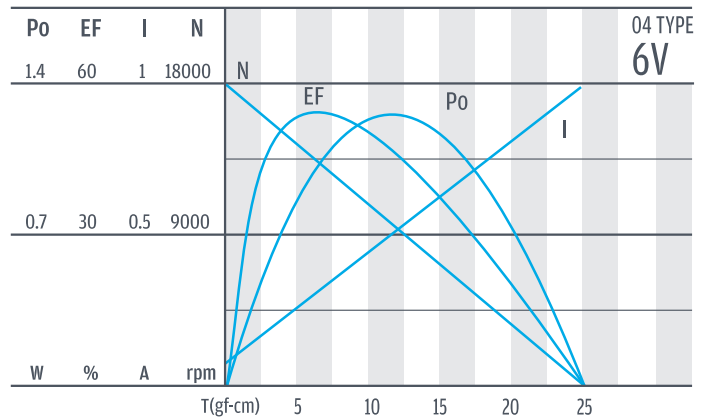
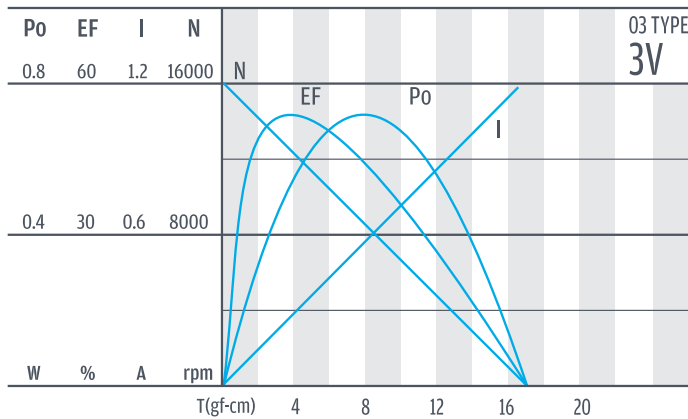
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		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		

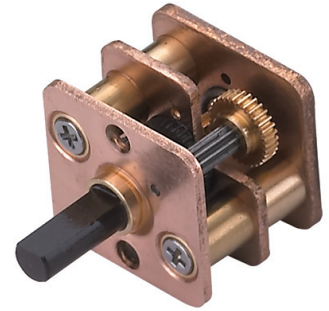
馬達單體型式/ Motor Data

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

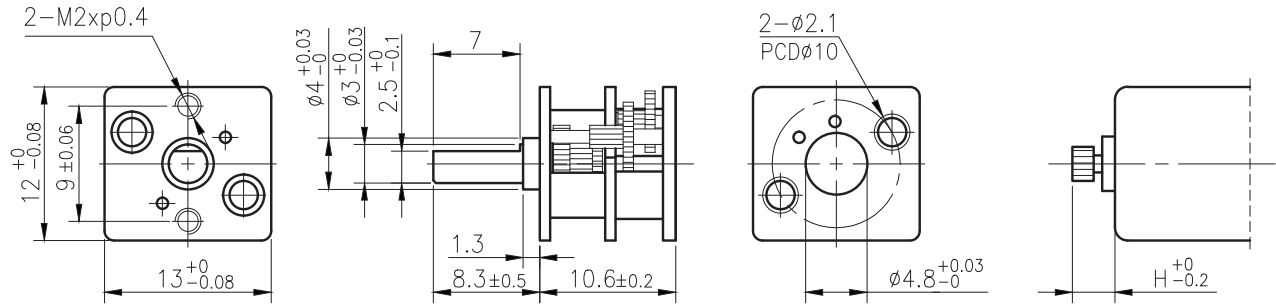
馬達單體特性/ Motor Characteristics



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

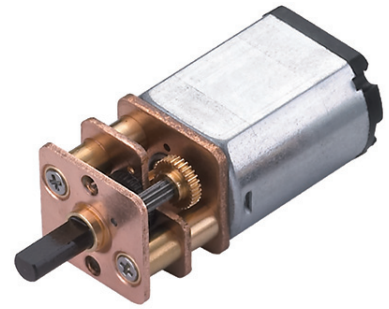
減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.3	0.5	0.5	0.8	0.8	1	1	1	1
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	0.9	1.5	1.5	2.4	2.4	3	3	3	3
效率 Efficiency	81%	73%	73%	66%	66%	66%	59%	59%	59%	59%	59%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

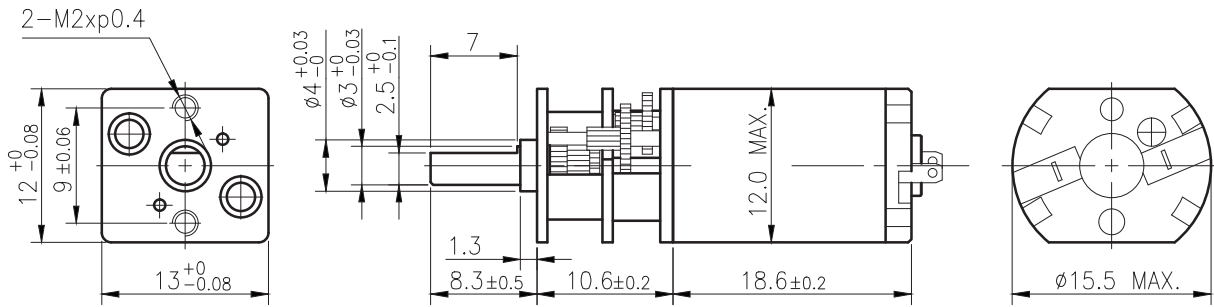
RA-13WGM

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

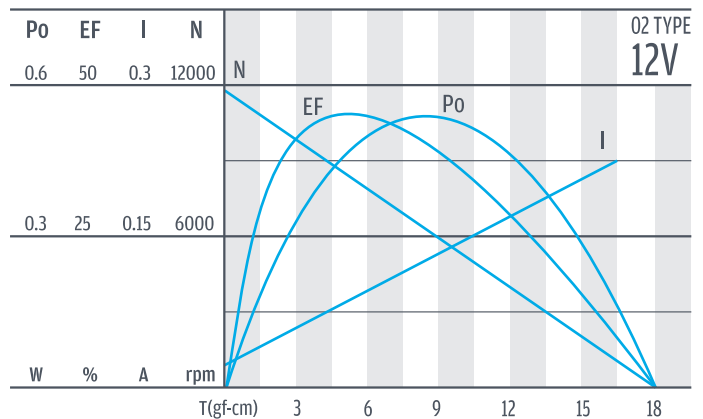
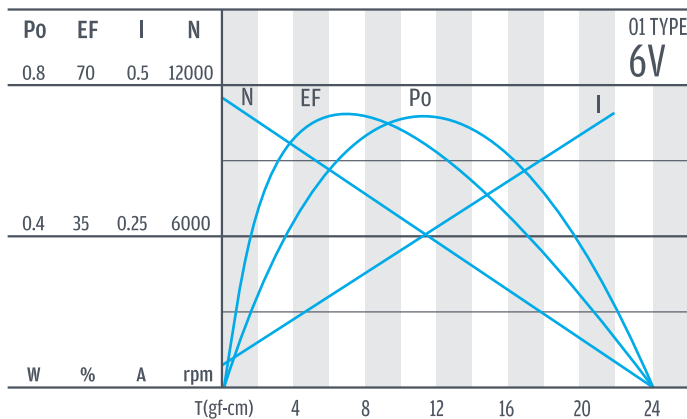
PG

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)
6	4	9600	≤0.14	11500	≤0.05	0.39	10
12	4.5	8750	≤0.1	11700	≤0.03	0.4	10

Encoder

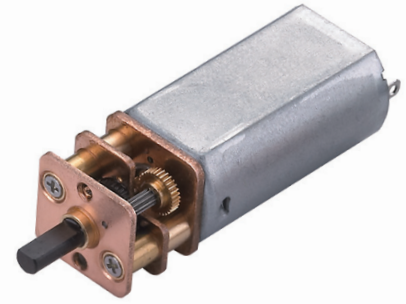
馬達單體特性/ Motor Characteristics



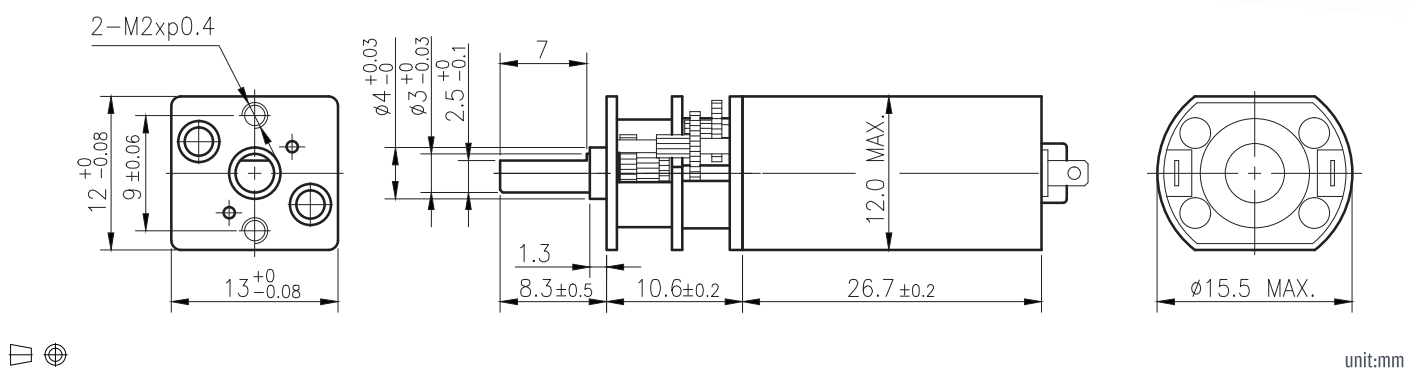
Driver

RA-13WGM

03 & 04 TYPE



外形尺寸/ Appearance Size



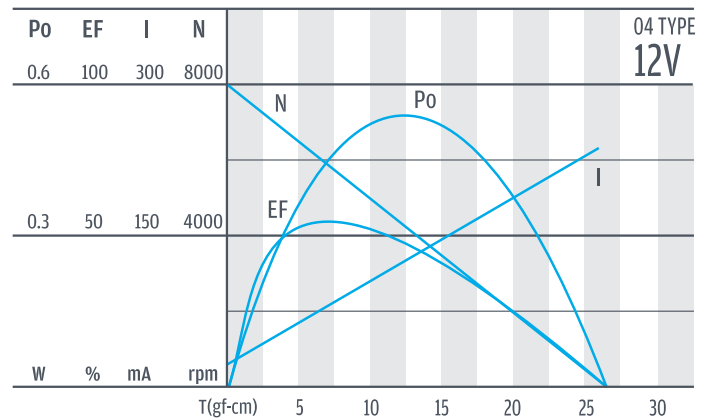
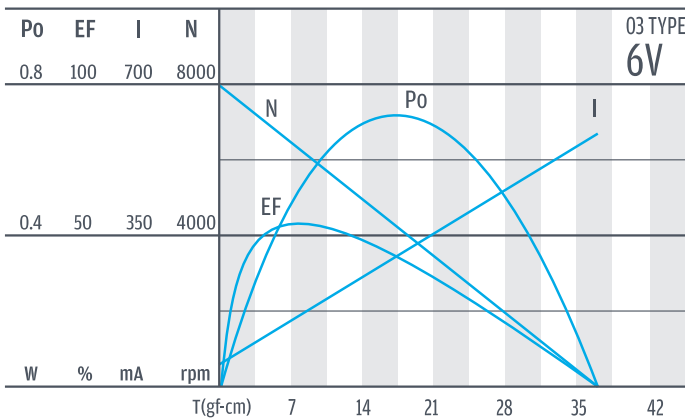
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/10	1/21	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



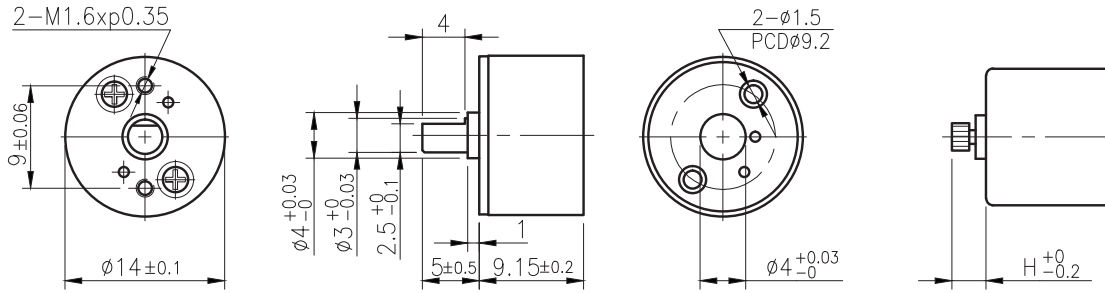
IG

RA-14



Right Angle

外形尺寸 & 馬達齒鉋合尺寸 / 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

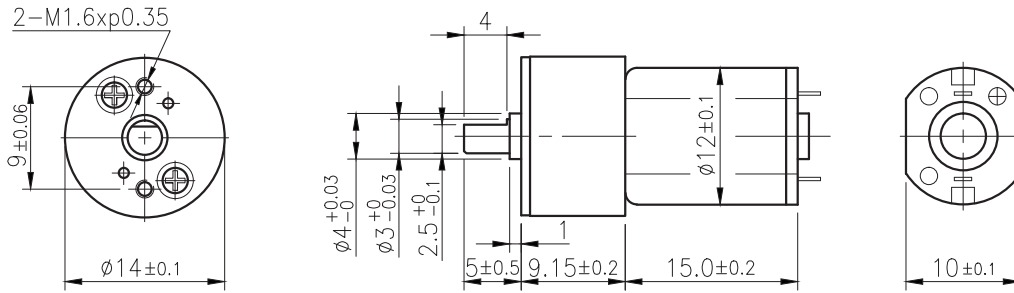
- 使用相對溼度：20%~85%RH
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C
Operating temperature range

RA-14GM

01 & 02 TYPE



外形尺寸/ Appearance Size



unit:mm

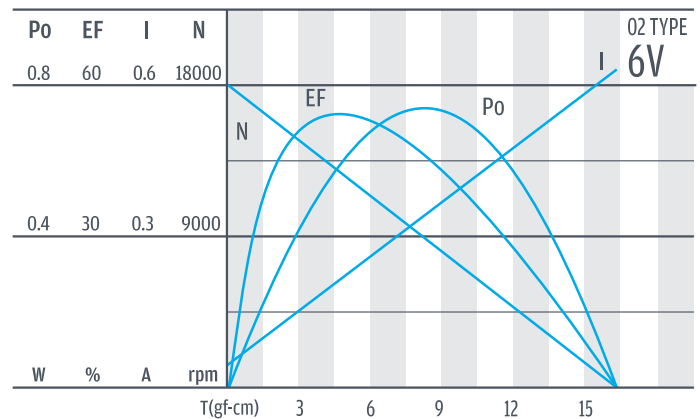
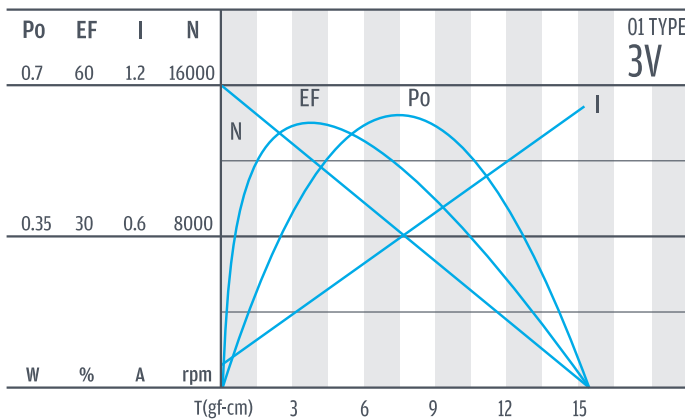
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

		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)	15	25	40	75	100	120	155	230	275	350			
6V	定格轉速 Rated speed (rpm)	1400	720	480	230	180	135	100	70	59	46			
	定格扭力 Rated torque (gf-cm)	24	40	60	115	150	200	235	345	410	520			
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

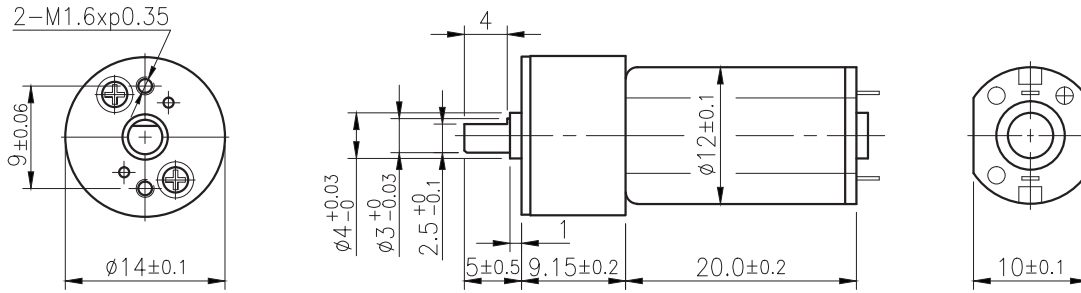
RA-14GM

03 & 04 TYPE



Right Angle

外形尺寸/ Appearance Size



unit:mm

RA

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								

RB

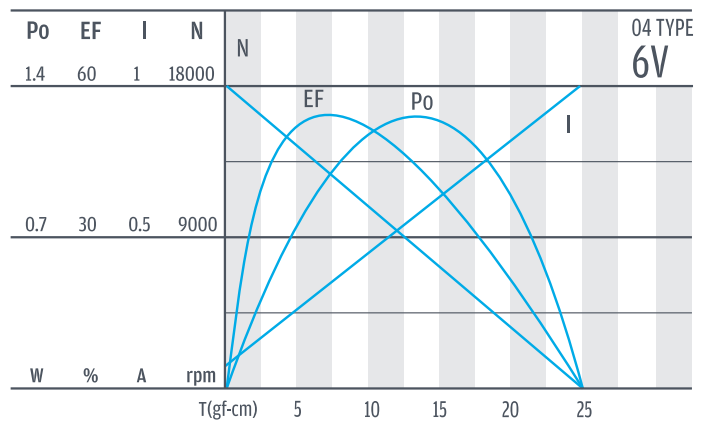
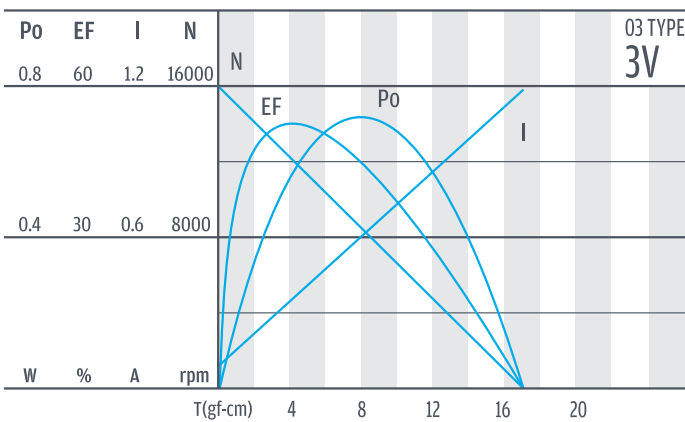
WG

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)
3	3	13500	≤ 0.31	16000	≤ 0.09	0.41	7.5
6	4	15000	≤ 0.25	18000	≤ 0.065	0.61	7.5

PG

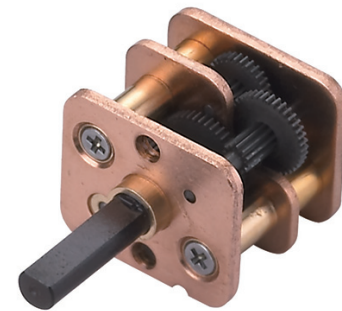
馬達單體特性/ Motor Characteristics



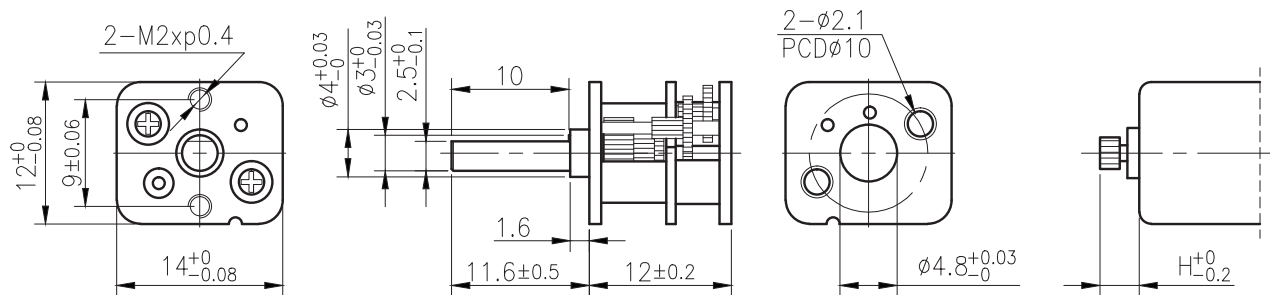
Encoder

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

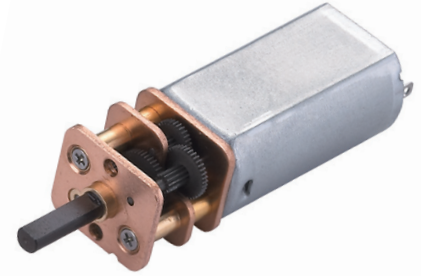
減速比 Reduction ratio	1/6	1/36	1/62	1/123	1/209									
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.5	0.8	1									
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	1.5	2.4	3									
效率 Efficiency	81%	66%	66%	59%	59%									
高度 Height (H)	4.1	4.1	4.1	2.9	2.9									
重量 Weight (g)	6.2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

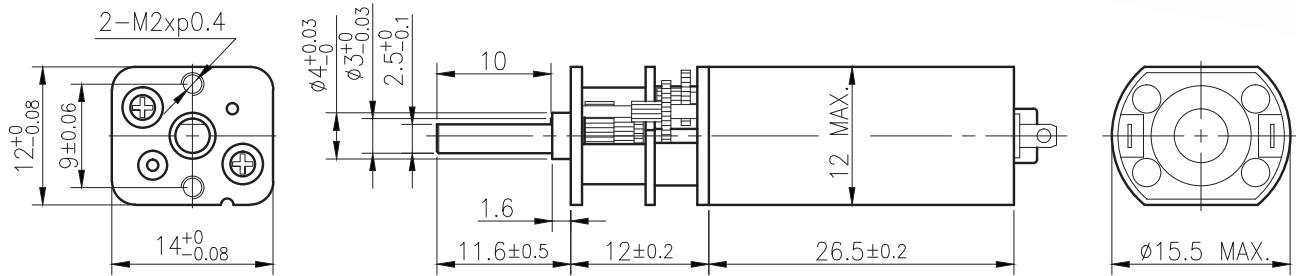
RA-14WGM

03 & 04 TYPE



Right Angle

外形尺寸/ Appearance Size



unit:mm

RA

R3

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				

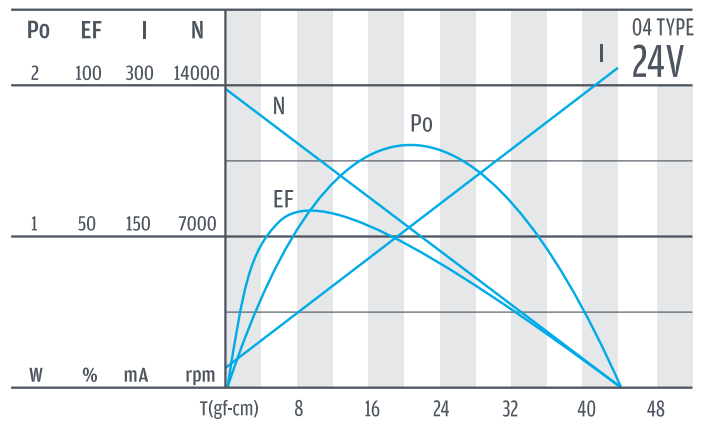
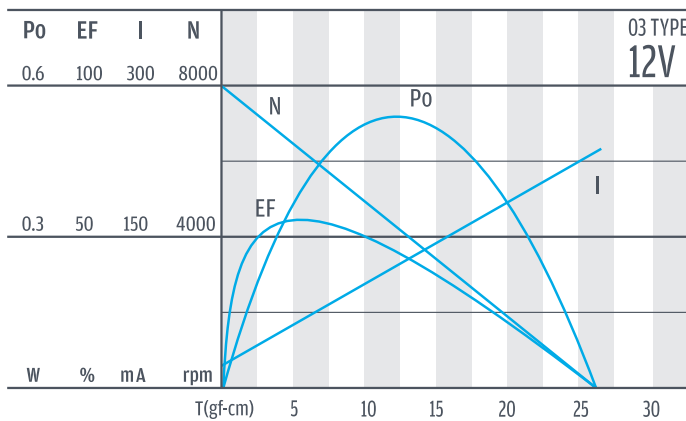
WG

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

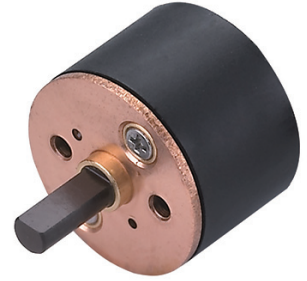
馬達單體特性/ Motor Characteristics



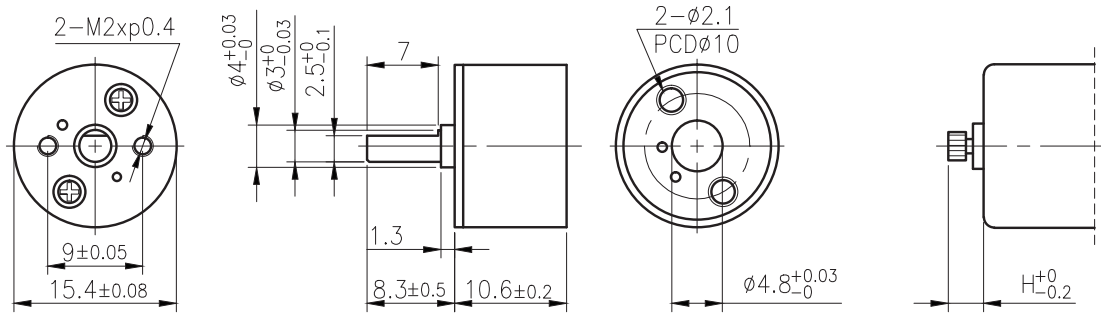
Encoder

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°	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

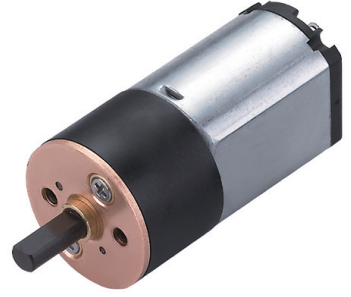
減速比 Reduction ratio	1/10	1/21	1/34	1/59	1/75	1/105	1/146	1/203	1/257	1/294	1/360						
定格容許扭力 (kgf-cm max.) Rated tolerance torque	0.2	0.3	0.3	0.5	0.5	0.8	0.8	1	1	1	1						
瞬間容許扭力 (kgf-cm) Max momentary tolerance torque	0.6	0.9	0.9	1.5	1.5	2.4	2.4	3	3	3	3						
效率 Efficiency	81%	73%	73%	66%	66%	66%	59%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

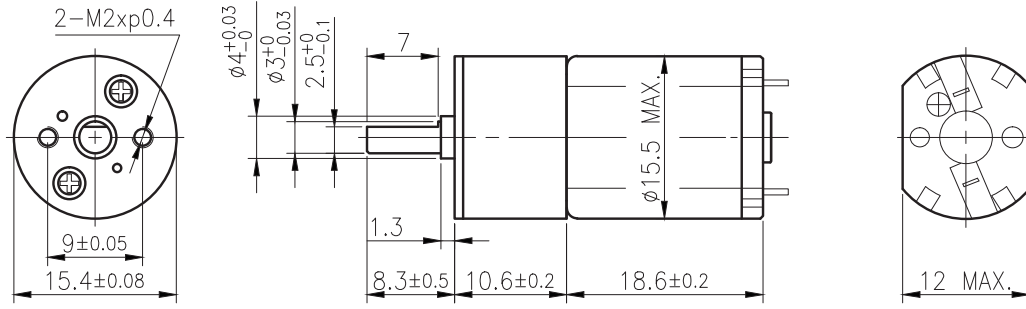
RA-15GM

01 & 02 TYPE



Right Angle

外形尺寸/ Appearance Size



unit:mm

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						

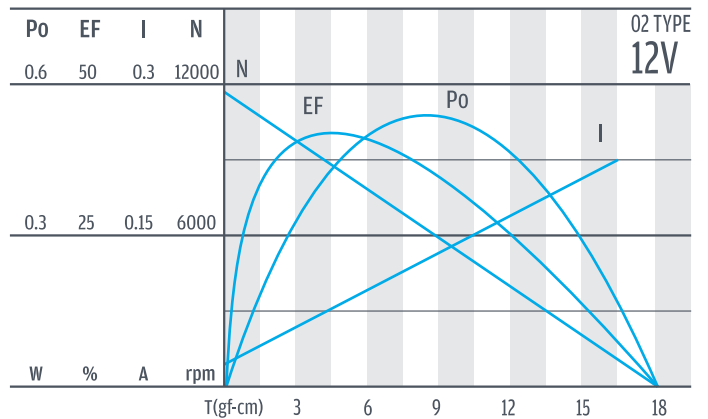
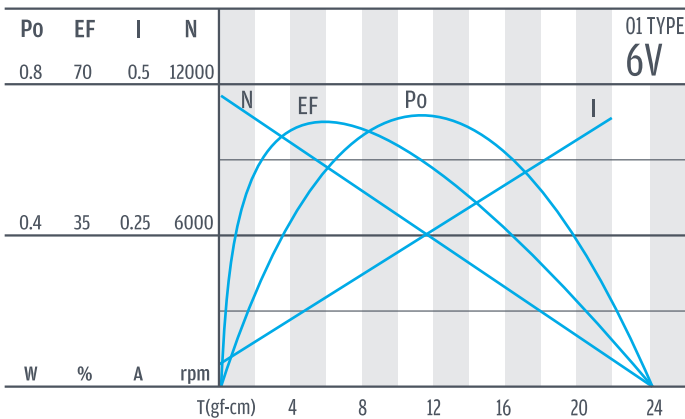
WG

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

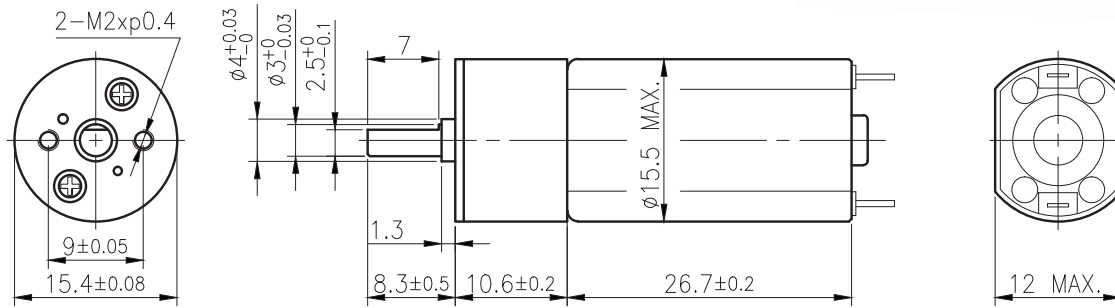
Driver

RA-15GM

03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

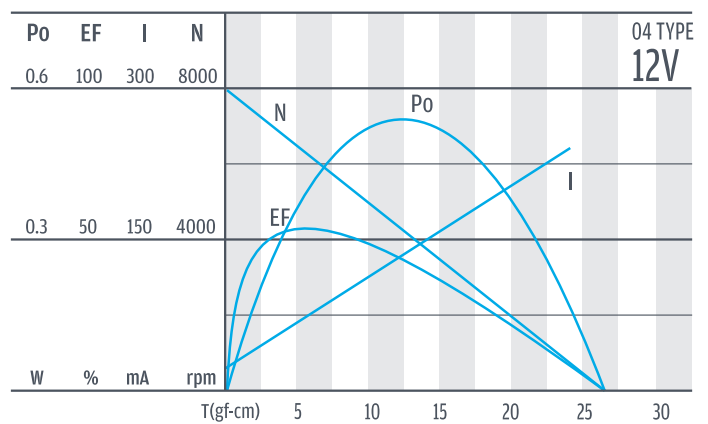
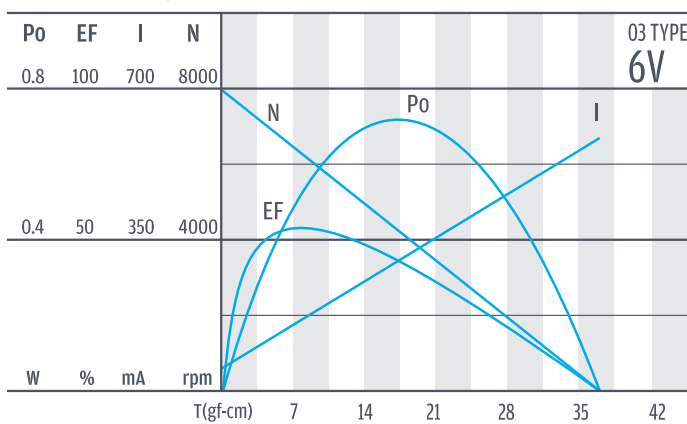
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

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	55	110	180	285	365	510	635	880	1000	1000	1000						
12V	45	90	150	235	300	420	520	730	920	1000	1000						
軸心迴轉方向 Rotation direction	CW	CCW			CW				CCW								

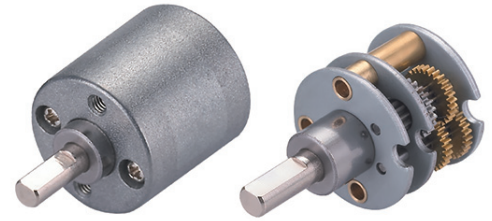
馬達單體型式/ Motor Data

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

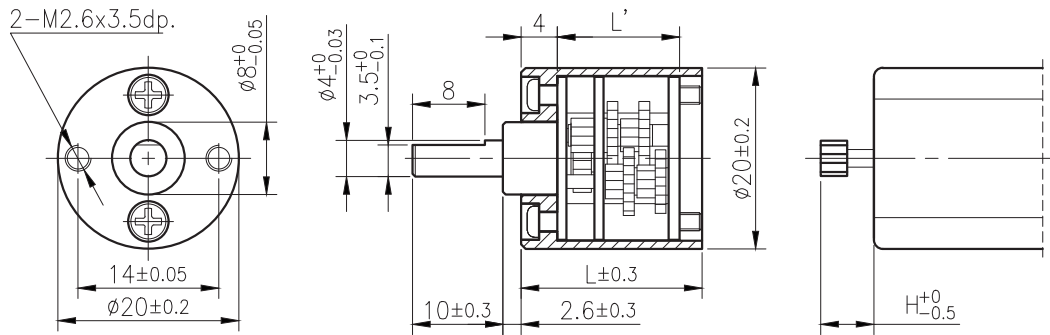
馬達單體特性/ Motor Characteristics



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

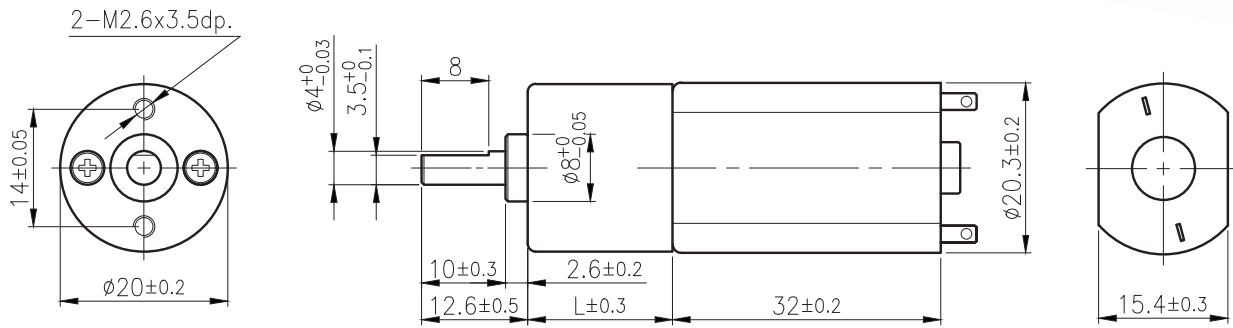
- 使用相對溼度：20%~85%RH
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C
Operating temperature range

RA-20GM

03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

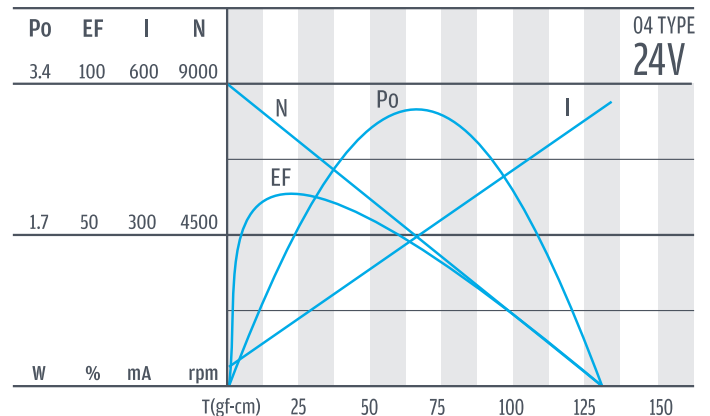
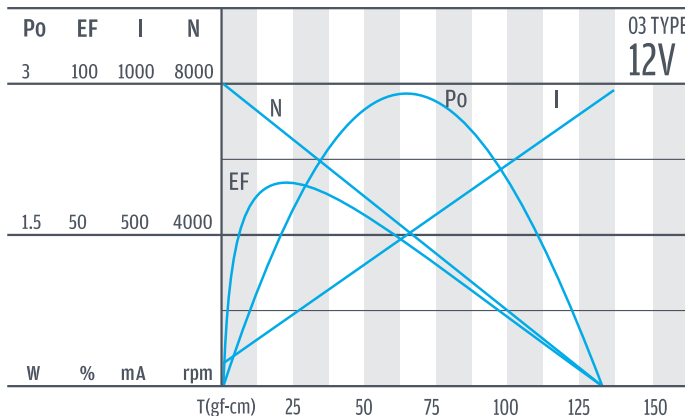
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

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

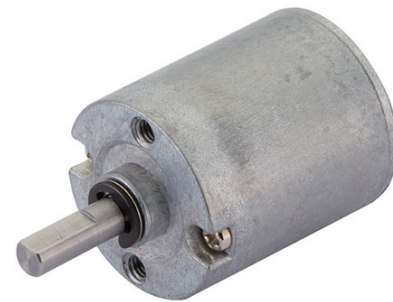
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	22	6700	≤0.2	8000	≤0.05	1.5	32
24	22	7400	≤0.11	9000	≤0.03	1.7	32

馬達單體特性/ Motor Characteristics



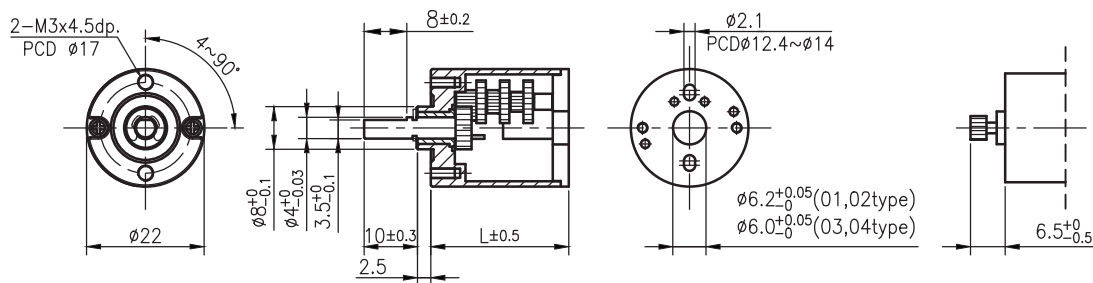
IG

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	≤ 0.4 kgf	≤ 0.2 kgf	≤ 2 kgf	≤ 0.05 mm	≤ 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°	$\phi 1.98$	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

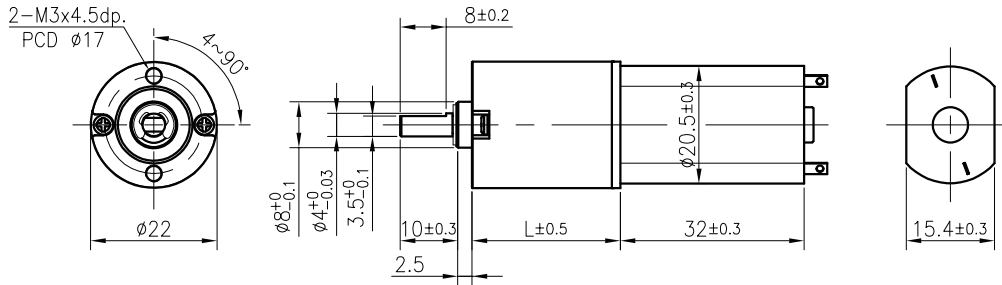
Driver

RA-22GM

01 & 02 TYPE



外形尺寸/ Appearance Size



unit:mm

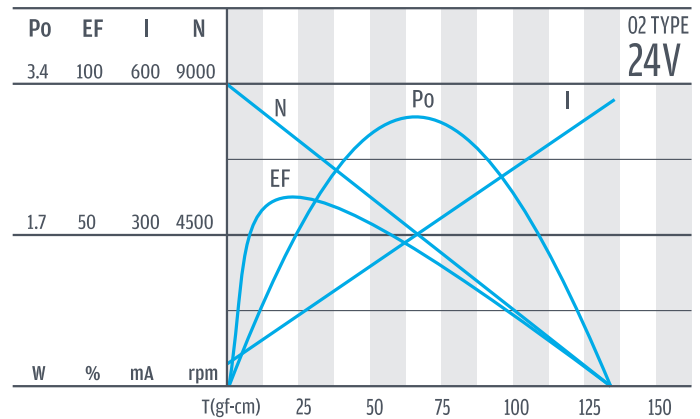
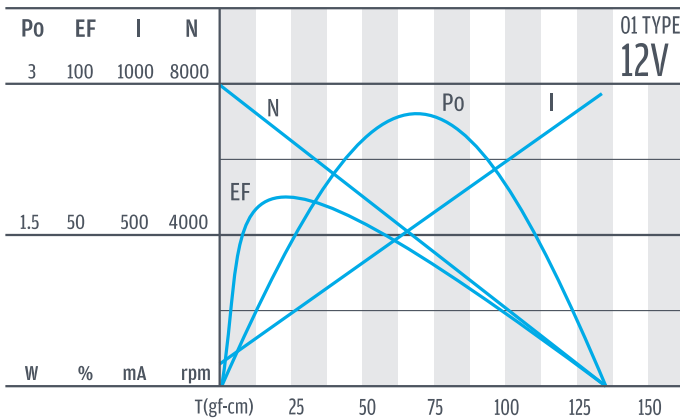
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	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

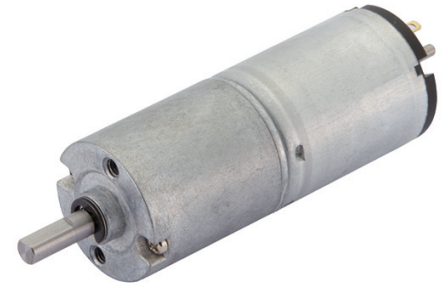
馬達單體特性/ Motor Characteristics



IG

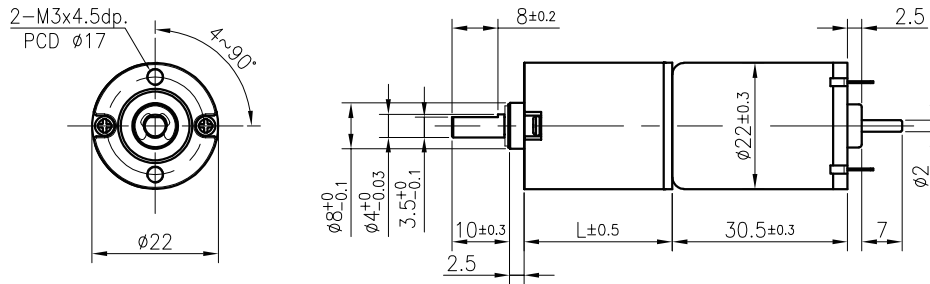
RA-22GM

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

	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)	200	375	490	665	865	1000	1200	1200	1200	1500	1800	1800	1800	1800	1800	1800
	定格轉速 Rated speed (rpm)	530	255	195	120	95	69	58	44	42	34	32	25	19	15	11	8
24V	定格扭力 Rated torque (gf-cm)	240	450	585	795	1000	1000	1200	1200	1200	1500	1500	1800	1800	1800	1800	1800
	定格轉速 Rated speed (rpm)	520	250	190	120	92	68	56	43	41	33	31	25	19	15	11	8
	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

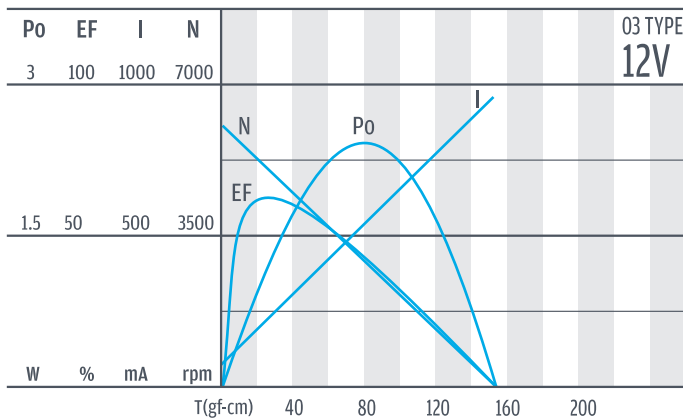
WG

馬達單體型式/ Motor Data

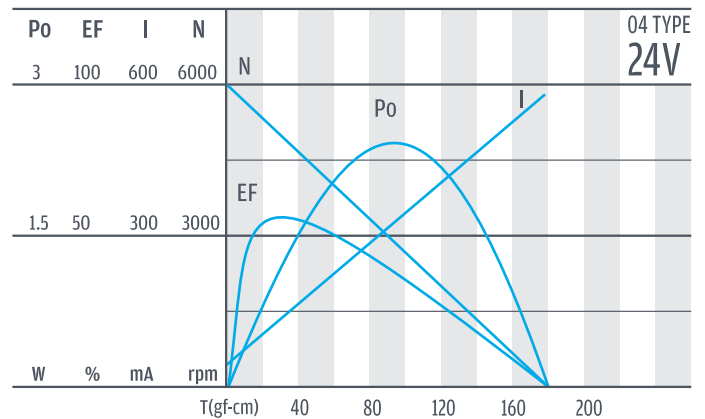
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (mA)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (mA)	定格出力 Rated output (W)	重量 Weight (g)
12	31	4790	≤240	6000	≤80	1.52	43
24	37	4710	<145	6000	<55	1.79	43

PG

馬達單體特性/ Motor Characteristics

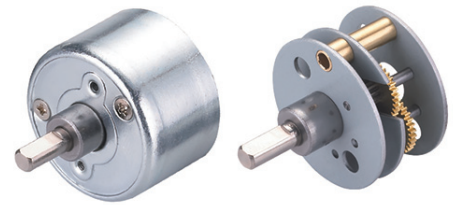


Encoder

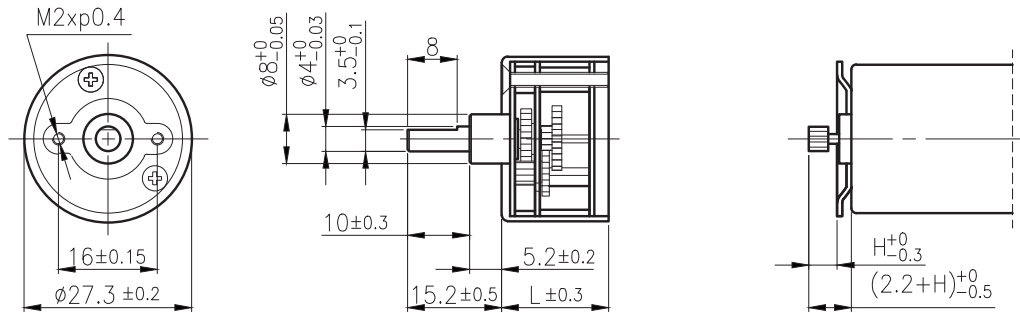


Driver

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	$\leq 2^\circ$

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	12	20°	$\phi 1.98$	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°	$\phi 1.98$	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

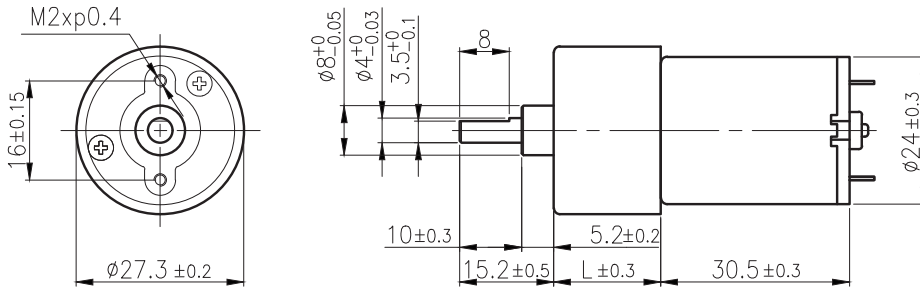
- 使用相對溼度：20%~85%RH
Operating relative humidity
- 使用溫度範圍：-10°C~+60°C
Operating temperature range

RA-27GM

02 & 03 TYPE



外形尺寸/ Appearance Size



unit:mm

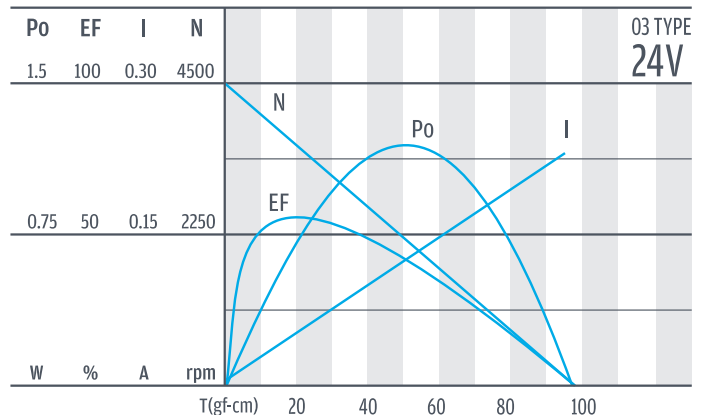
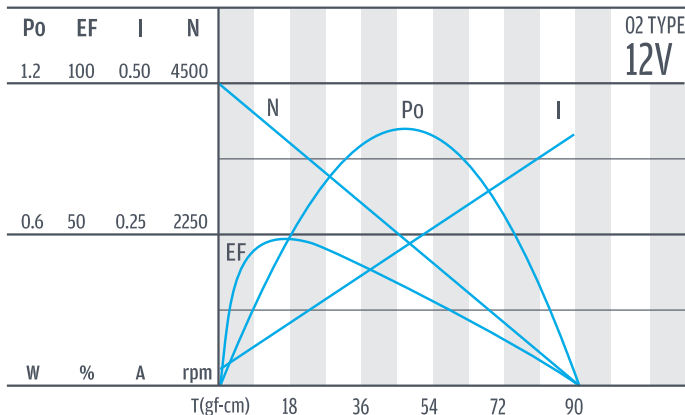
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	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

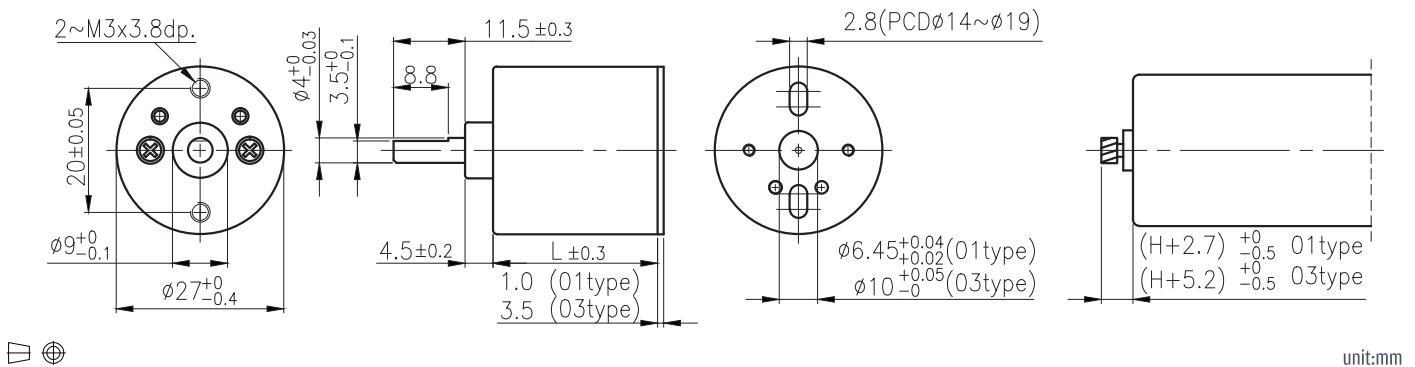
馬達單體特性/ Motor Characteristics



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	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)	$\phi 1.98 \phi 2.28$	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

IG

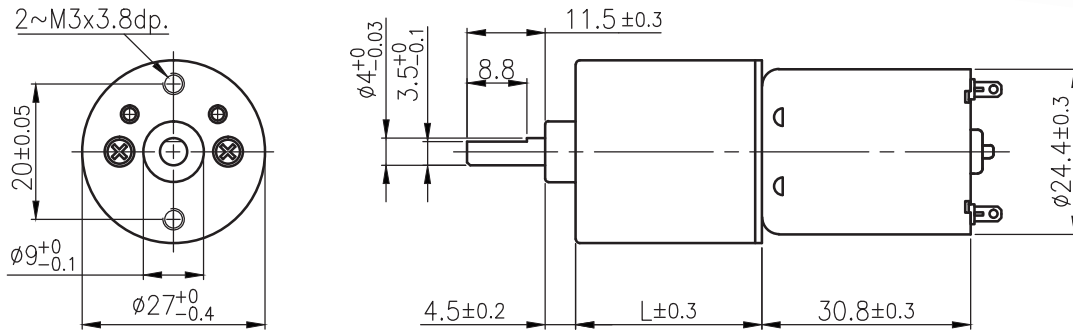
RA-27CGM

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	1/20	1/42	1/54	1/87	1/112	1/181	1/232	1/376	1/484	1/784	1/1009				
12V	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	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							

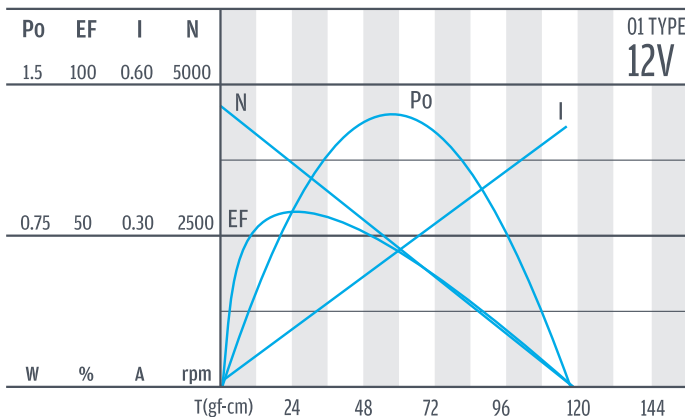
WG

PG

馬達單體型式/ Motor Data

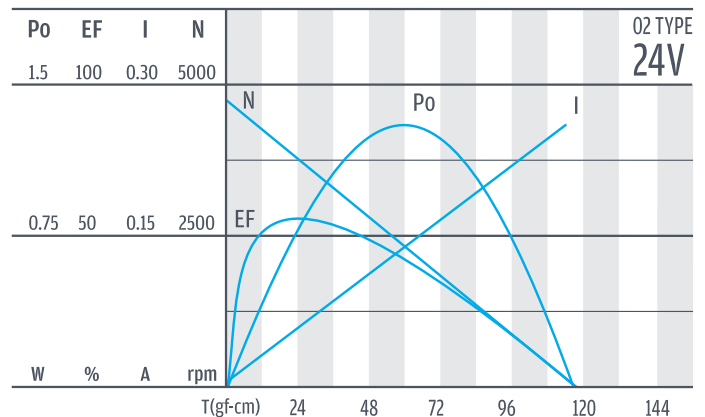
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	22	3600	≤0.13	4500	≤0.05	0.81	50
24	24	3500	≤0.07	4500	≤0.035	0.86	50

馬達單體特性/ Motor Characteristics



Encoder

Driver

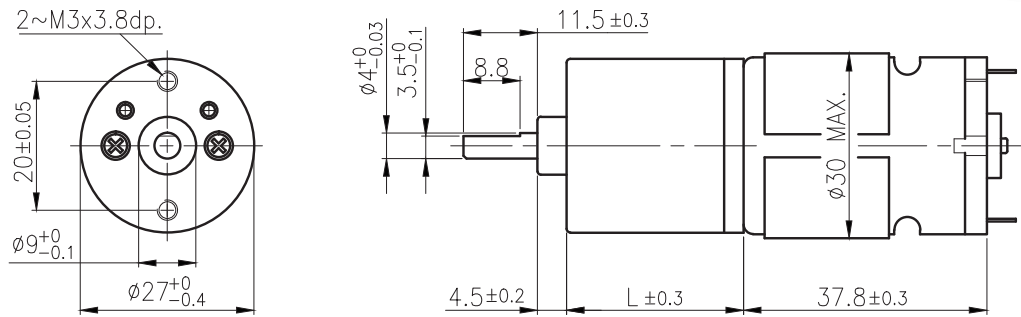


RA-27CGM

03 & 04 TYPE



外形尺寸/ Appearance Size



unit:mm

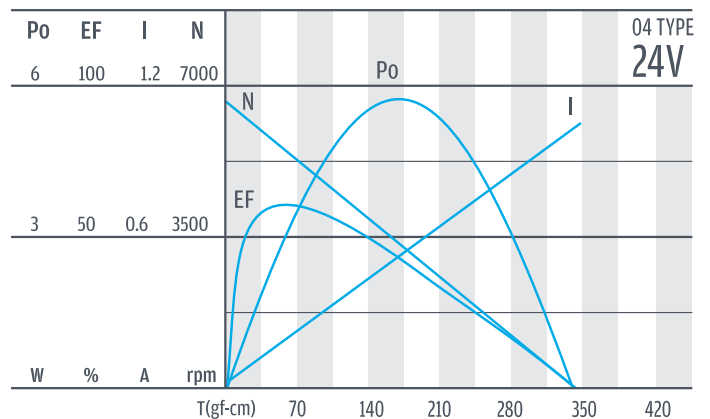
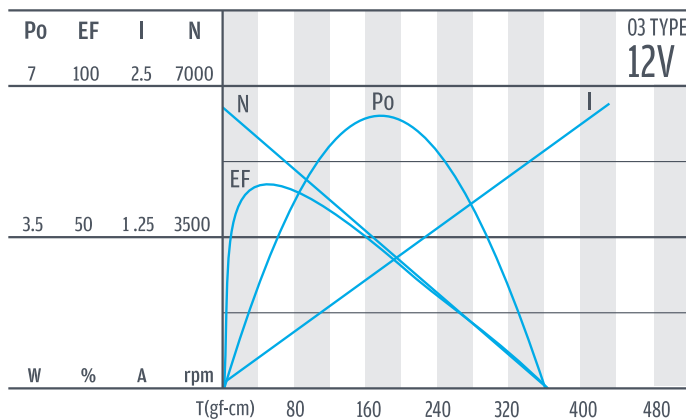
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	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				
12V	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				
	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				
24V	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

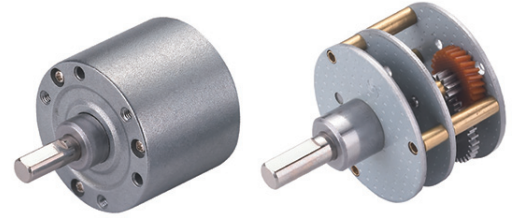
定格電壓 Rated volt (V)	定格扭力 Rated torque (gf-cm)	定格轉速 Rated speed (rpm)	定格電流 Rated current (A)	無負荷轉速 No load speed (rpm)	無負荷電流 No load current (A)	定格出力 Rated output (W)	重量 Weight (g)
12	78	5290	≤0.53	6500	≤0.15	4.22	73
24	74	5250	≤0.25	6500	≤0.085	3.97	73

馬達單體特性/ Motor Characteristics



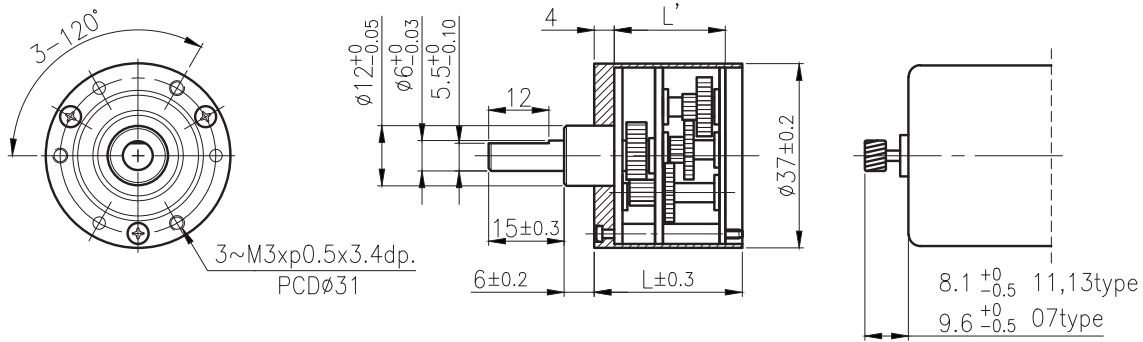
IG

RA-35C



Right Angle

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



unit:mm

RA

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°

RB

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

WG

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						
1/6	1/19	1/38	1/63	1/94	1/156	1/234	1/312	1/469	1/938	1/3750							
1/21	1/47	1/69	1/104	1/169	1/187	1/250	1/375	1/563	1/1250	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						

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

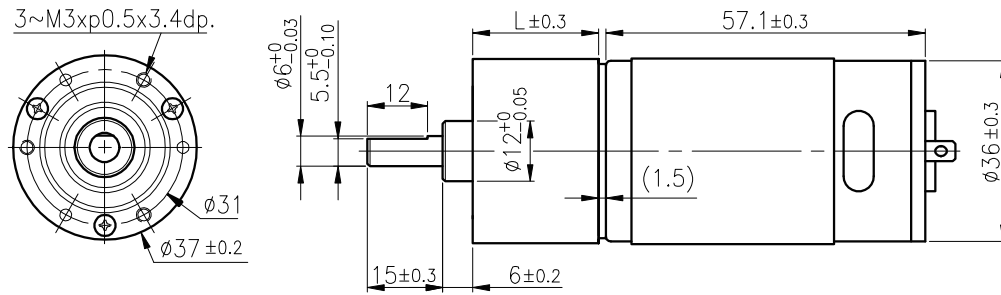
Driver

RA-37GM

07 & 09 TYPE



外形尺寸/ Appearance Size



unit:mm

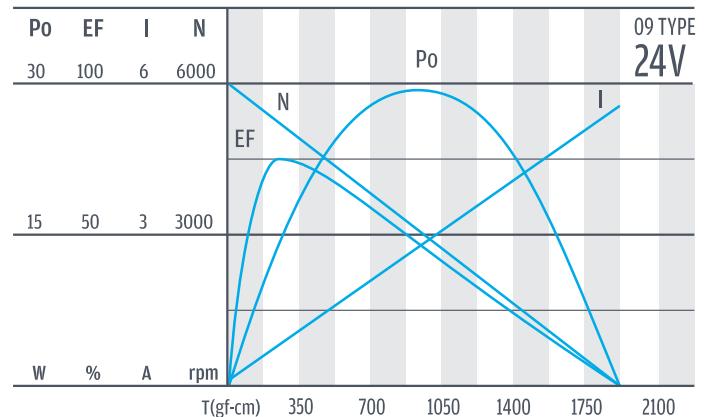
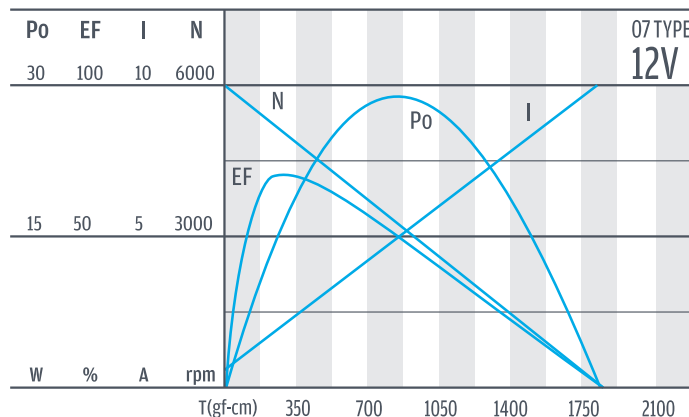
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	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

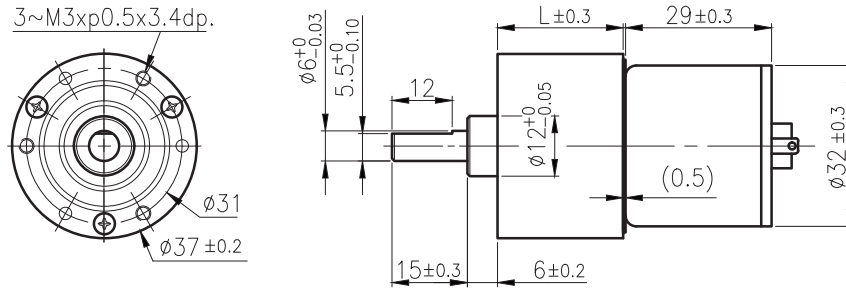


RA-37GM

11 & 12 TYPE



外形尺寸/ Appearance Size



unit:mm

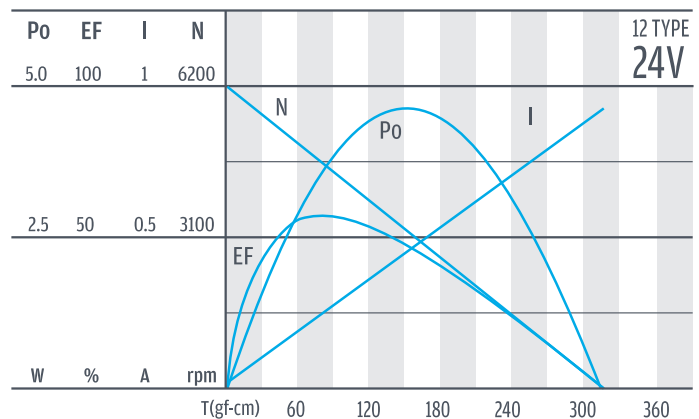
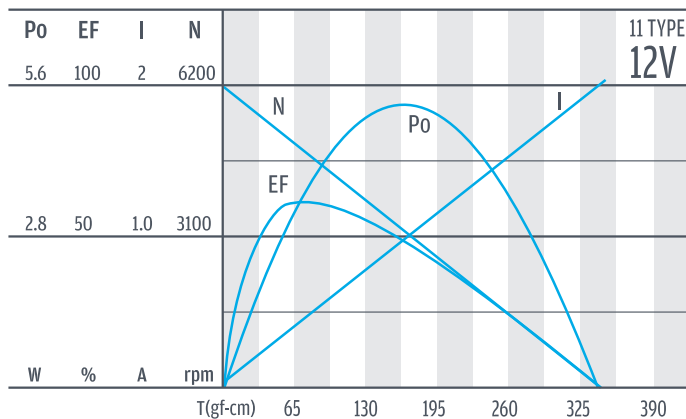
齒輪箱馬達轉矩 & 速度/ Gear Motor Torque & Speed

	減速比 Reduction ratio	1/6	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
	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
	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	

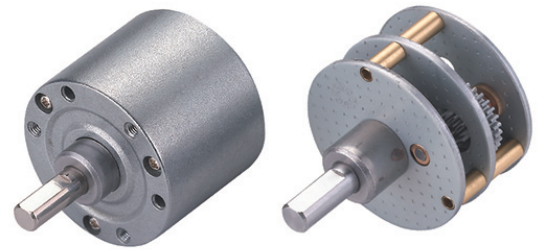
馬達單體型式/ Motor Data

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

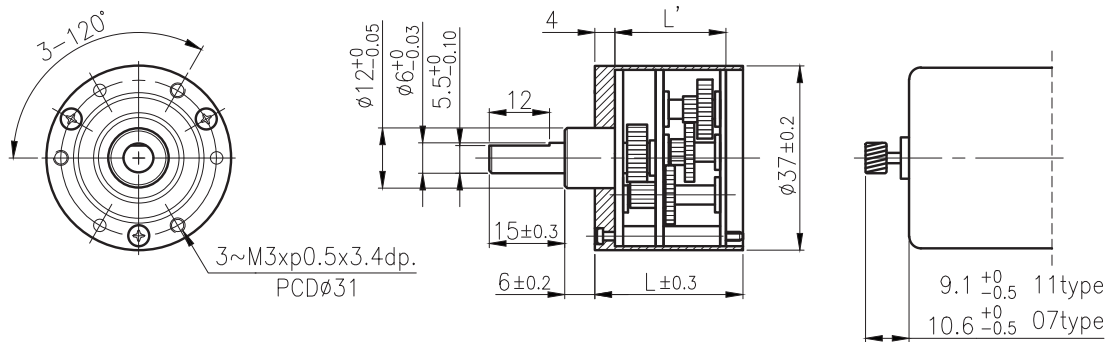
馬達單體特性/ Motor Characteristics



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	≤ 1 kgf	≤ 0.7 kgf	≤ 5 kgf	≤ 0.05 mm	≤ 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

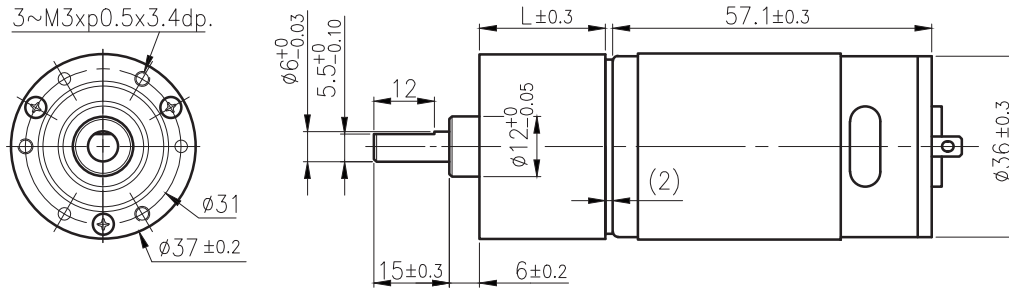
RA-37AGM

07 & 09 TYPE



Right Angle

外形尺寸/Apearance Size



unit:mm

RA

R3

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					

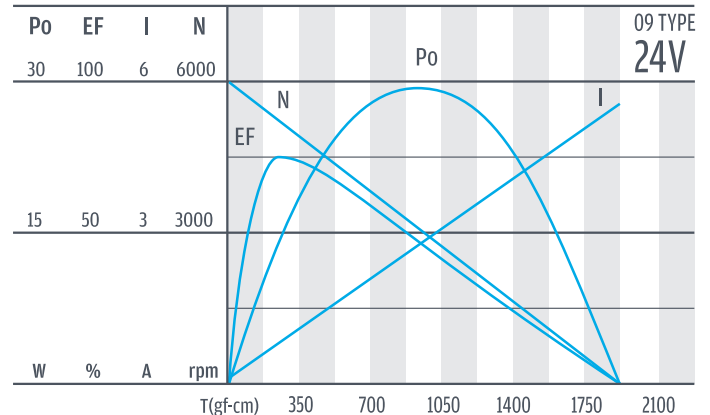
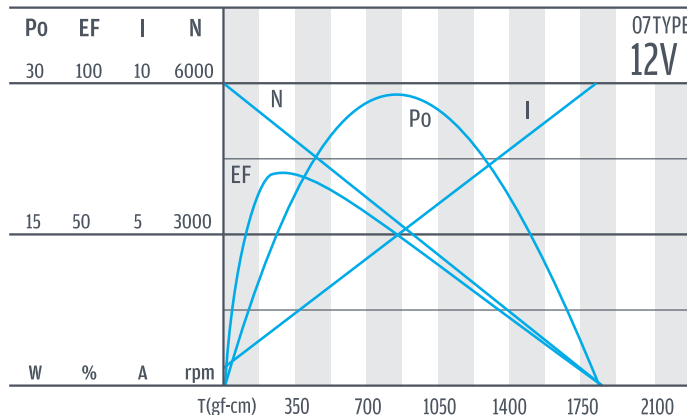
WG

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

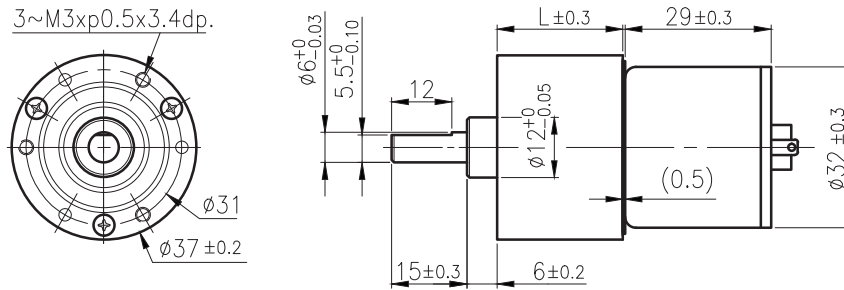
Driver

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

