

# M B S Servo Motor Direct Engaged Ball Screws

## 伺服馬達直結滾珠螺桿系列

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- 行程：~ 200 mm
- 推力：0.5 ~ 40 KG
- 速度：~ 200 mm/sec
- 重複定位精度：~± 1  $\mu$ m

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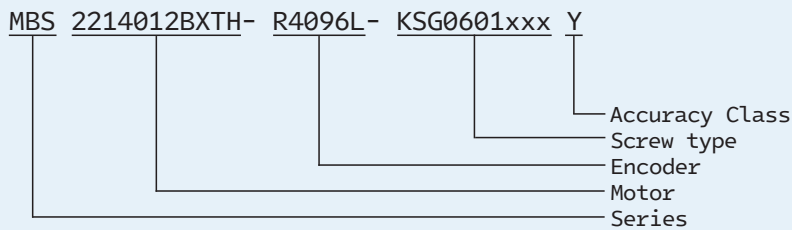
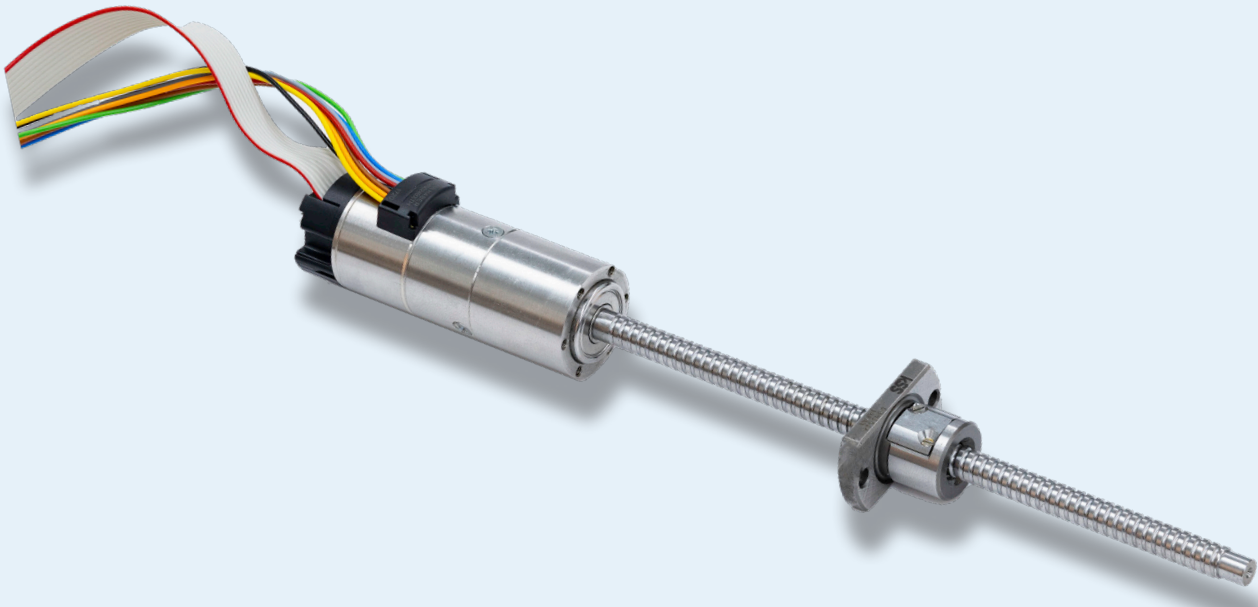
搭配組合 **Faulhaber** 微型直流伺服馬達與高精度直結滾珠螺桿  
內搭止推結構以增強連結強度  
於最緊湊體積下充分發揮空心杯馬達特性  
完成高加減速，高速，高精度定位

搭配控制器做閉迴路力量，速度與位置控制  
同時具備多種通訊界面供選擇

線軌模組主力搭配日本 **KSS** 達高剛性、高穩定性與高重現性

另可選配更高解析度，絕對型編碼器，煞車器與真空環境版本

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## MBS Series | Servo Motor Direct Engaged Ball Screws |

MBS2214012BXTH - R4096L - KSG0601xxxY	66 - 67
MBS2214012BXTH - R4096L - KSG0602xxxY	68 - 69
MBS3216012BXTH - R4096L - KSG0801xxxY	70 - 71
MBS3216012BXTH - R4096L - KSG0802xxxY	72 - 73
MBS4221012BXTH - R4096L - KSG1001xxxY	74 - 75
MBS4221012BXTH - R4096L - KSG1002xxxY	76 - 77

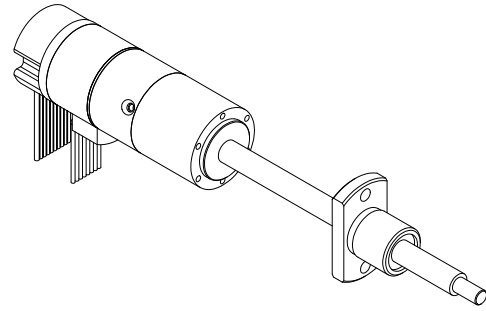
## MBS2214012BXTH-R4096L-KSG0601xxxY

推力 : 50 N

瞬間推力 : 150 N

解析度 : 0.244 μm

連續移動速度 : 50 mm/s



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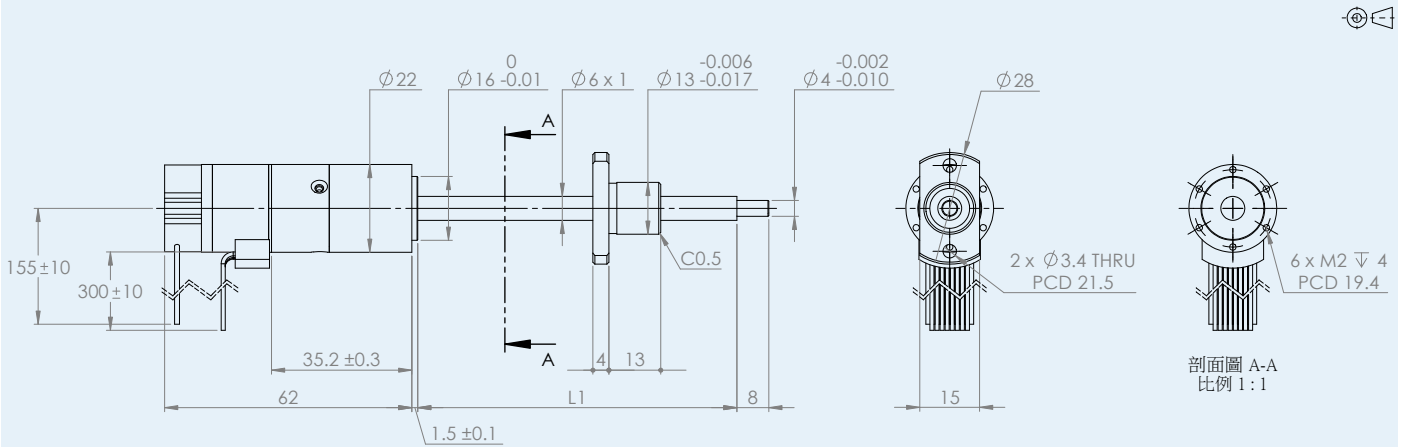
Technical Specification			
Nominal voltage	24		V
Nominal current	0.65		A
Terminal resistance	6.95		Ω
Ballscrew shaft diameter	6		mm
Ballscrew pitch	1		mm
Operation temperature range	-20 ... +80		°C
Continuous force	50		N
Peak force	150		N
Continuous output speed, max	50		mm/s
Encoder resolution	4096		CPR
Linear resolution	0.244		μm
Accuracy class	H	P	
Accuracy*	40	20	μm
Repeatability*	±3	±1	μm
Nut backlash	5	0	μm
Screw material	SCM415H		
Nut material	SCM415H		

\* 定位精度和重複定位精度為搭配廠內線性軌道測定數值

Screw type	Stroke(mm)	L1 (mm)	Mass (g)					
KSG0601030	30	80	80					
KSG0601060	60	105	90					
KSG0601100	100	130	100					

## Dimensional drawing

Scale reduced mm



### Motor Pin Assignment

Connector Type : MOLEX 43025-0800

Yellow	Phase C
Orange	Phase B
Brown	Phase A
Black	GND
Red	Um(+5V)
Grey	Hall sensor C
Blue	Hall sensor B
Green	Hall sensor A

### Encoder Pin Assignment

Connector Type : DIN-41651

Pin 1	N.C.
Pin 2	UE
Pin 3	GND
Pin 4	N.C.
Pin 5	Ch A-
Pin 6	Ch A+
Pin 7	Ch B-
Pin 8	Ch B+
Pin 9	Ch I-
Pin 10	Ch I+

### Option

Controller	Encoder	Brake	Cable
MC 3001 S RS/CO MC 3001 C RS/CO AEMT MC 3001 C PDIO MC 3001 C4 RS/CO MC 5004 C ET MC 5004 C ET AEMT	IE3-1024L IEF3-4096L IER3-10000L AEMT-12/16 L	PFB26E-24V	延長連接線組, 耐繞曲線組 請諮詢服務業務
			Others

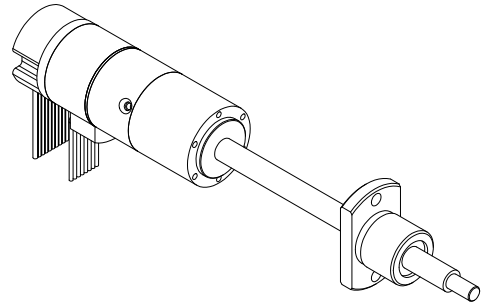
## MBS2214012BXTH-R4096L-KSG0602xxxY

推力 : 25 N

瞬間推力 : 75 N

解析度 : 0.488 μm

連續移動速度 : 100 mm/s



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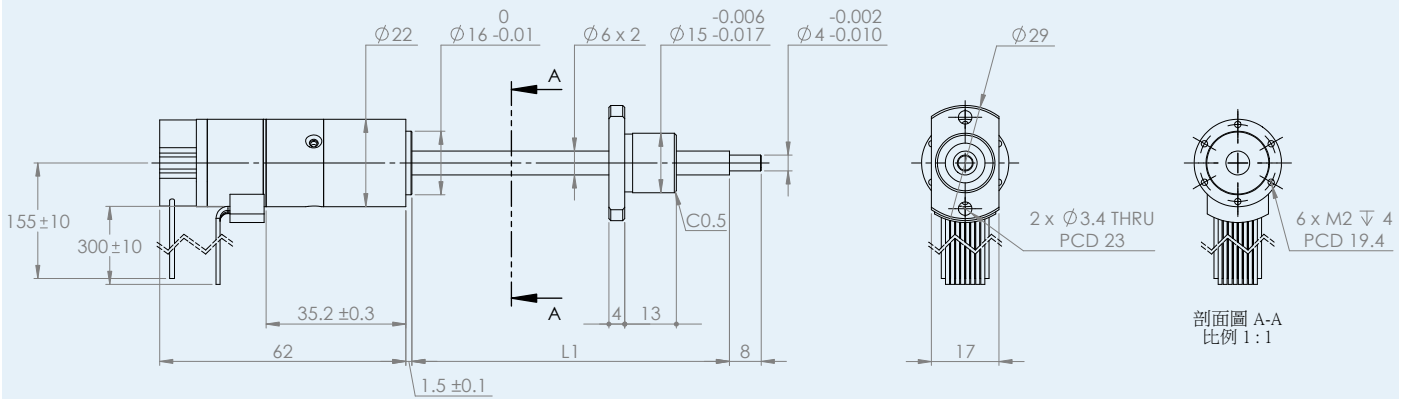
Technical Specification			
Nominal voltage	24		V
Nominal current	0.65		A
Terminal resistance	6.95		Ω
Ballscrew shaft diameter	6		mm
Ballscrew pitch	2		mm
Operation temperature range	-20 ... +80		°C
Continuous force	25		N
Peak force	75		N
Continuous output speed, max	100		mm/s
Encoder resolution	4096		CPR
Linear resolution	0.488		μm
Accuracy class	H	P	
Accuracy*	40	20	μm
Repeatability*	±3	±1	μm
Nut backlash	5	0	μm
Screw material	SCM415H		
Nut material	SCM415H		

\* 定位精度和重複定位精度為搭配廠內線性軌道測定數值

Screw type	Stroke(mm)	L1 (mm)	Mass (g)					
KSG0602030	30	80	85					
KSG0602060	60	105	95					
KSG0602100	100	130	105					

## Dimensional drawing

Scale reduced mm



### Motor Pin Assignment

Connector Type : MOLEX 43025-0800

Yellow	Phase C
Orange	Phase B
Brown	Phase A
Black	GND
Red	Um(+5V)
Grey	Hall sensor C
Blue	Hall sensor B
Green	Hall sensor A

### Encoder Pin Assignment

Connector Type : DIN-41651

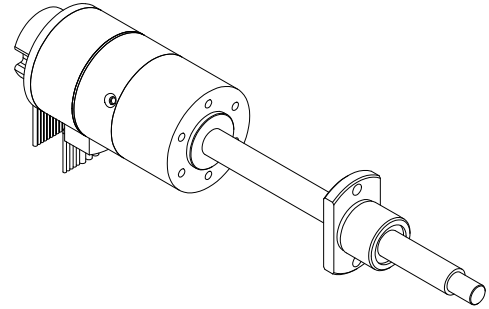
Pin 1	N.C.
Pin 2	UE
Pin 3	GND
Pin 4	N.C.
Pin 5	Ch A-
Pin 6	Ch A+
Pin 7	Ch B-
Pin 8	Ch B+
Pin 9	Ch I-
Pin 10	Ch I+

### Option

Controller	Encoder	Brake	Cable
MC 3001 S RS/CO MC 3001 C RS/CO AEMT MC 3001 C PDIO MC 3001 C4 RS/CO MC 5004 C ET MC 5004 C ET AEMT	IE3-1024L IEF3-4096L IER3-10000L AEMT-12/16 L	PFB26E-24V	延長連接線組, 耐繞曲線組 請諮詢服務業務
			Others

## MBS3216012BXTH-R4096L-KSG0801xxxY

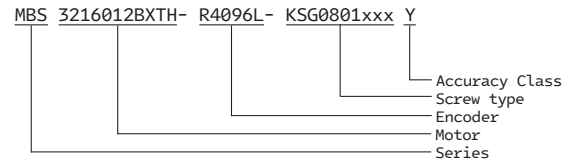
- 推力 : 200 N
- 瞬間推力 : 600 N
- 解析度 : 0.244  $\mu\text{m}$
- 連續移動速度 : 50 mm/s



搭配組合 Faulhaber 微型直流伺服馬達與高精度直結滾珠螺桿  
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### Technical Specification

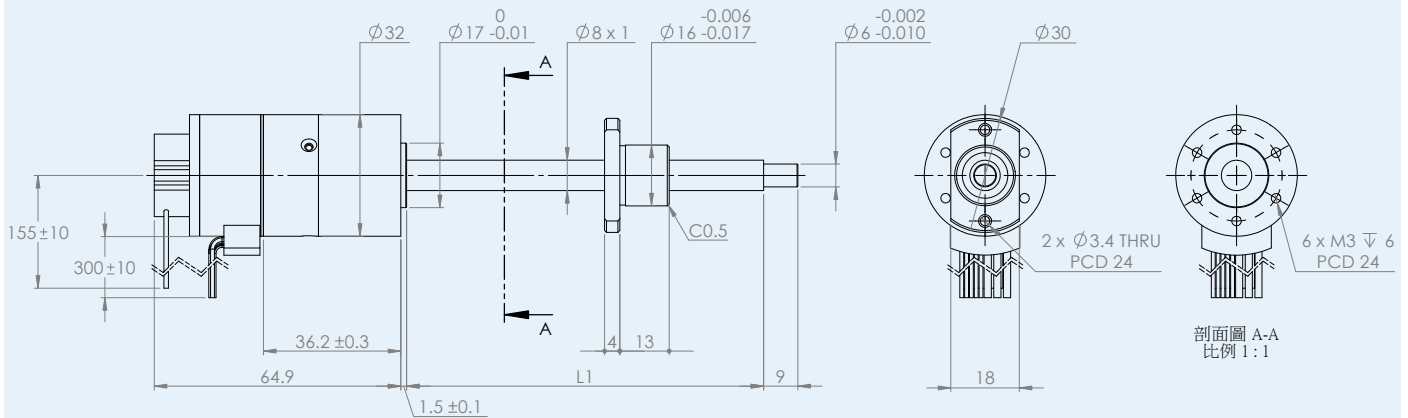
Nominal voltage	24		V
Nominal current	2.18		A
Terminal resistance	0.88		$\Omega$
Ballscrew shaft diameter	8		mm
Ballscrew pitch	1		mm
Operation temperature range	-20 ... +80		$^{\circ}\text{C}$
Continuous force	200		N
Peak force	600		N
Continuous output speed, max	50		mm/s
Encoder resolution	4096		CPR
Linear resolution	0.244		$\mu\text{m}$
Accuracy class	H	P	
Accuracy*	40	20	$\mu\text{m}$
Repeatability*	$\pm 3$	$\pm 1$	$\mu\text{m}$
Nut backlash	5	0	$\mu\text{m}$
Screw material	SCM415H		
Nut material	SCM415H		

\* 定位精度和重複定位精度為搭配廠內線性軌道測定數值

Screw type	Stroke(mm)	L1 (mm)	Mass (g)					
KSG0801040	40	94	170					
KSG0801070	70	124	180					
KSG0801100	100	154	190					
KSG0801150	150	204	210					

## Dimensional drawing

Scale reduced mm



### Motor Pin Assignment

Connector Type : MOLEX 43025-0800

Yellow	Phase C
Orange	Phase B
Brown	Phase A
Black	GND
Red	Um(+5V)
Grey	Hall sensor C
Blue	Hall sensor B
Green	Hall sensor A

### Encoder Pin Assignment

Connector Type : DIN-41651

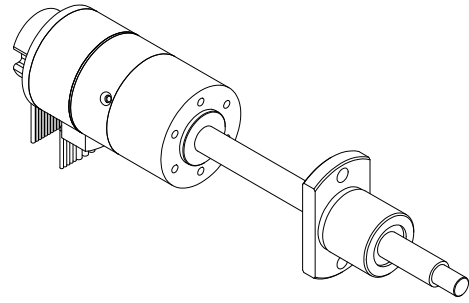
Pin 1	N.C.
Pin 2	UE
Pin 3	GND
Pin 4	N.C.
Pin 5	Ch A-
Pin 6	Ch A+
Pin 7	Ch B-
Pin 8	Ch B+
Pin 9	Ch I-
Pin 10	Ch I+

### Option

Controller	Encoder	Brake	Cable
MC 5004 C RS/CO MC 5004 C RS/CO AEMT MC 5004 C PDIO MC 5004 C ET MC 5004 C ET AEMT	IE3-1024L IEF3-4096L IER3-10000L AEMT-12/16 L	PFB26E-24V PFB29E-24V	延長連接線組, 耐繞曲線組 請諮詢服務業務
			Others

## MBS3216012BXTH-R4096L-KSG0802xxxY

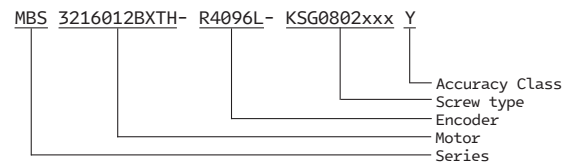
- 推力 : 100 N
- 瞬間推力 : 300 N
- 解析度 : 0.488 μm
- 連續移動速度 : 100 mm/s



搭配組合 Faulhaber 微型直流伺服馬達與高精度直結滾珠螺桿  
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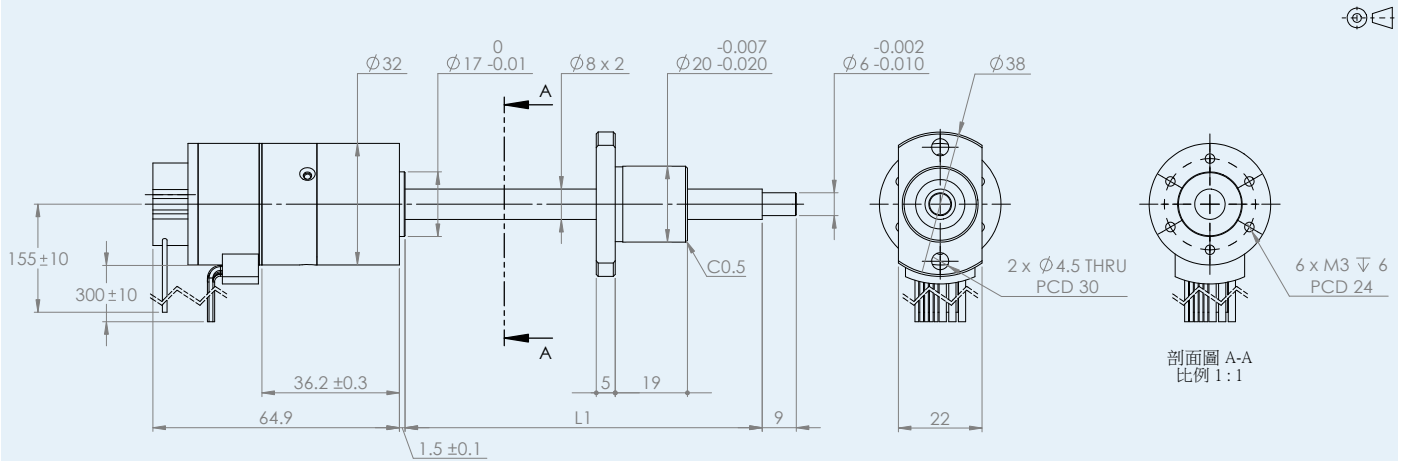
Technical Specification			
Nominal voltage	24		V
Nominal current	2.18		A
Terminal resistance	0.88		Ω
Ballscrew shaft diameter	8		mm
Ballscrew pitch	2		mm
Operation temperature range	-20 ... +80		°C
Continuous force	100		N
Peak force	300		N
Continuous output speed, max	100		mm/s
Encoder resolution	4096		CPR
Linear resolution	0.488		μm
Accuracy class	H	P	
Accuracy*	40	20	μm
Repeatability*	±3	±1	μm
Nut backlash	5	0	μm
Screw material	SCM415H		
Nut material	SCM415H		

\* 定位精度和重複定位精度為搭配廠內線性軌道測定數值

Screw type	Stroke(mm)	L1 (mm)	Mass (g)					
KSG0802040	40	94	175					
KSG0802070	70	124	185					
KSG0802100	100	154	195					
KSG0802150	150	204	215					

## Dimensional drawing

Scale reduced mm



### Motor Pin Assignment

Connector Type : MOLEX 43025-0800

Yellow	Phase C
Orange	Phase B
Brown	Phase A
Black	GND
Red	Um(+5V)
Grey	Hall sensor C
Blue	Hall sensor B
Green	Hall sensor A

### Encoder Pin Assignment

Connector Type : DIN-41651

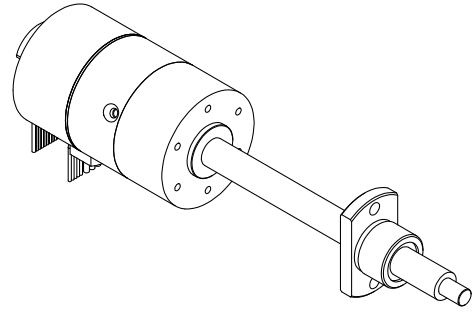
Pin 1	N.C.
Pin 2	UE
Pin 3	GND
Pin 4	N.C.
Pin 5	Ch A-
Pin 6	Ch A+
Pin 7	Ch B-
Pin 8	Ch B+
Pin 9	Ch I-
Pin 10	Ch I+

### Option

Controller	Encoder	Brake	Cable
MC 5004 C RS/CO MC 5004 C RS/CO AEMT MC 5004 C PDIO MC 5004 C ET MC 5004 C ET AEMT	IE3-1024L IEF3-4096L IER3-10000L AEMT-12/16 L	PFB26E-24V PFB29E-24V	延長連接線組，耐繞曲線組 請諮詢服務業務
			Others

## MBS4221024BXTH-R4096L-KSG1001xxxY

- 推力 : 520 N
- 瞬間推力 : 1560 N
- 解析度 : 0.244 μm
- 連續移動速度 : 50 mm/s



搭配組合 Faulhaber 微型直流伺服馬達與高精度直結滾珠螺桿  
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### Technical Specification

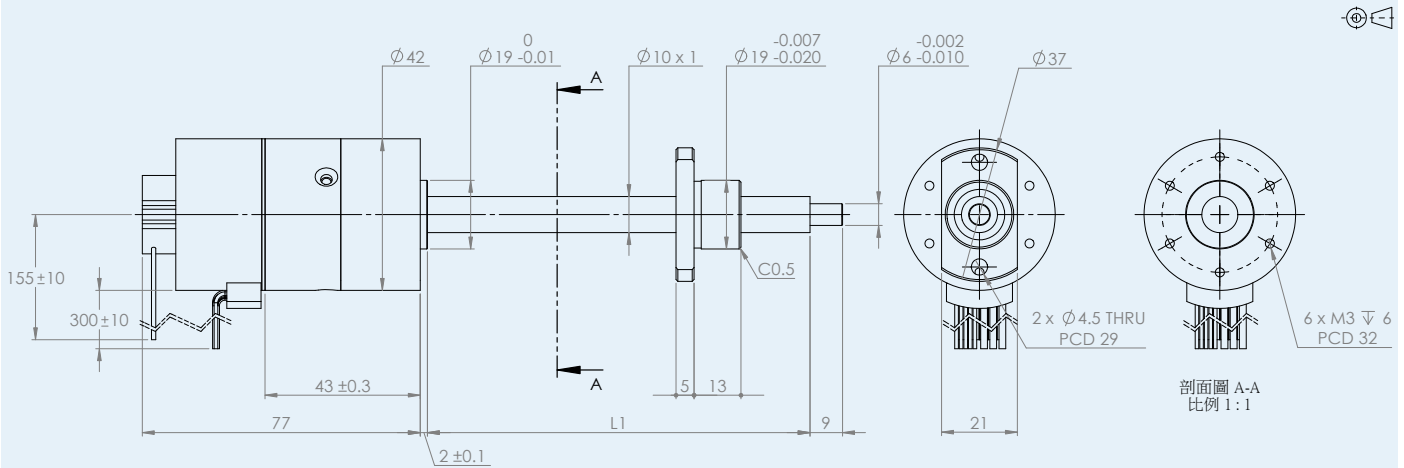
Nominal voltage	24		V
Nominal current	2.87		A
Terminal resistance	0.74		Ω
Ballscrew shaft diameter	10		mm
Ballscrew pitch	1		mm
Operation temperature range	-20 ... +80		°C
Continuous force	298		N
Peak force	520		N
Continuous output speed, max	50		mm/s
Encoder resolution	4096		CPR
Linear resolution	0.244		μm
Accuracy class	H	P	
Accuracy*	40	20	μm
Repeatability*	±3	±1	μm
Nut backlash	5	0	μm
Screw material	SCM415H		
Nut material	SCM415H		

\* 定位精度和重複定位精度為搭配廠內線性軌道測定數值

Screw type	Stroke(mm)	L1 (mm)	Mass (g)					
KSG1001060	60	106	360					
KSG1001110	110	156	390					
KSG1001160	160	206	420					
KSG1001210	210	256	450					

## Dimensional drawing

Scale reduced mm



### Motor Pin Assignment

Connector Type : MOLEX 43025-0800

Yellow	Phase C
Orange	Phase B
Brown	Phase A
Black	GND
Red	Um(+5V)
Grey	Hall sensor C
Blue	Hall sensor B
Green	Hall sensor A

### Encoder Pin Assignment

Connector Type : DIN-41651

Pin 1	N.C.
Pin 2	UE
Pin 3	GND
Pin 4	N.C.
Pin 5	Ch A-
Pin 6	Ch A+
Pin 7	Ch B-
Pin 8	Ch B+
Pin 9	Ch I-
Pin 10	Ch I+

### Option

Controller	Encoder	Brake	Cable
MC 5004 C RS/CO MC 5004 C RS/CO AEMT MC 5004 C PDIO MC 5004 C ET MC 5004 C ET AEMT	IE3-1024L IEF3-4096L IER3-10000L AEMT-12/16 L	PFB29E-24V	延長連接線組，耐繞曲線組 請諮詢服務業務
			Others

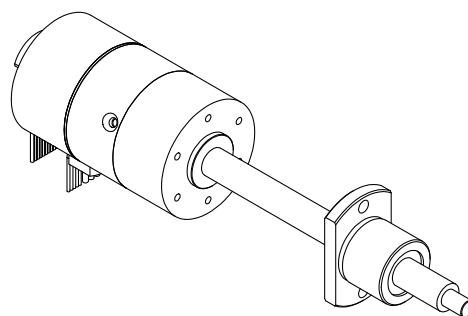
## MBS4221024BXTH-R4096L-KSG1002xxxY

推力 : 298 N

瞬間推力 : 894 N

解析度 : 0.488 μm

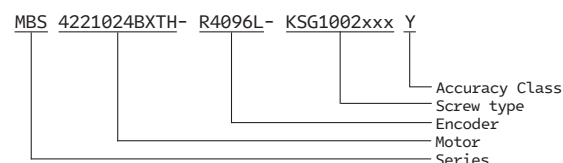
連續移動速度 : 100 mm/s



搭配組合 Faulhaber 微型直流伺服馬達與高精度直結滾珠螺桿  
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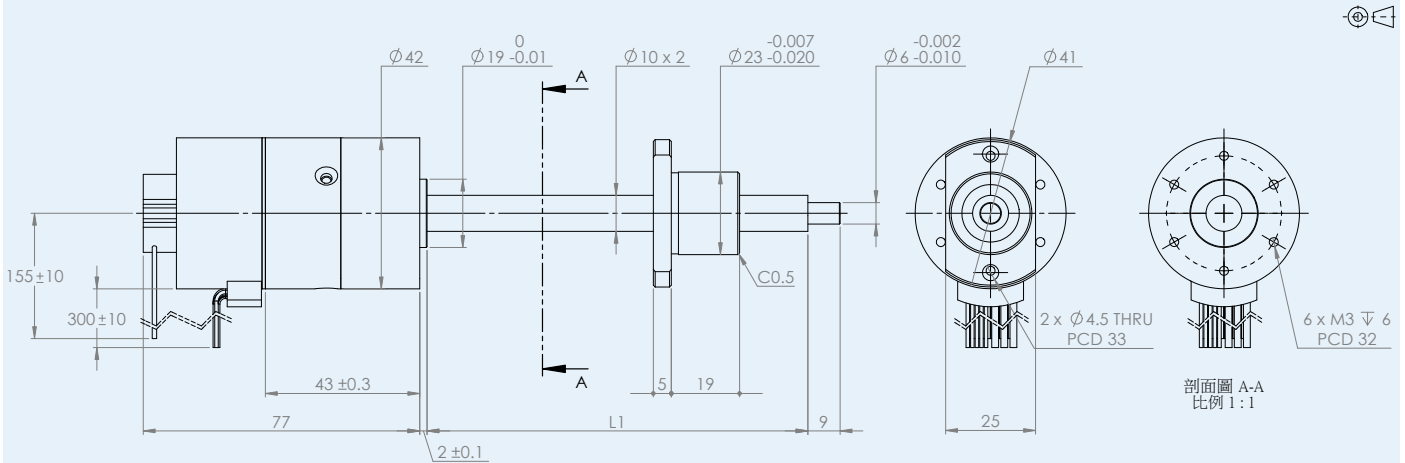
Nominal voltage	24		V
Nominal current	2.87		A
Terminal resistance	0.74		Ω
Ballscrew shaft diameter	10		mm
Ballscrew pitch	2		mm
Operation temperature range	-20 ... +80		°C
Continuous force	298		N
Peak force	894		N
Continuous output speed, max	100		mm/s
Encoder resolution	4096		CPR
Linear resolution	0.488		μm
Accuracy class	H	P	
Accuracy*	40	20	μm
Repeatability*	±3	±1	μm
Nut backlash	5	0	μm
Screw material	SCM415H		
Nut material	SCM415H		

\* 定位精度和重複定位精度為搭配廠內線性軌道測定數值

Screw type	Stroke(mm)	L1 (mm)	Mass (g)					
KSG1002060	60	106	370					
KSG1002110	110	156	400					
KSG1002160	160	206	430					
KSG1002210	210	256	460					

## Dimensional drawing

Scale reduced mm



### Motor pin Assignment

Connector Type : MOLEX 43025-0800

Yellow	Phase C
Orange	Phase B
Brown	Phase A
Black	GND
Red	Um(+5V)
Grey	Hall sensor C
Blue	Hall sensor B
Green	Hall sensor A

### Encoder pin Assignment

Connector Type : DIN-41651

Pin 1	N.C.
Pin 2	UE
Pin 3	GND
Pin 4	N.C.
Pin 5	Ch A-
Pin 6	Ch A+
Pin 7	Ch B-
Pin 8	Ch B+
Pin 9	Ch I-
Pin 10	Ch I+

### Option

Controller	Encoder	Brake	Cable
MC 5004 C RS/CO MC 5004 C RS/CO AEMT MC 5004 C PDIO MC 5004 C ET MC 5004 C ET AEMT	IE3-1024L IEF3-4096L IER3-10000L AEMT-12/16 L	PFB29E-24V	延長連接線組，耐繞曲線組 請諮詢服務業務
			Others