

DINGS'

Precision Motion Specialist

BRUSHLESS DC MOTOR

Jiangsu DINGS' Intelligent Control Technology Co., Ltd.





Since its establishment in 2008, Jiangsu DINGS' Intelligent Control Technology Co., Ltd. has adhered to the business philosophy of **"Quality comes from responsibility, and details determine success or failure."**

The company is committed to becoming a precision motion specialist and a world-class provider of motion control solutions.

DINGS' offers a comprehensive range of products, including precision stepper motors, DC motors, voice coil motors, lead and ball screw linear actuators, PMSM motors for new energy vehicles, and motion controllers.

SCALE

200+ Processing Equipment



20+ Assembly Lines



100+ Testing Instruments



140+ Patents



GROWTH

2008 Company founded and DINGS' brand registered

2010 Established DINGS' MOTION USA

2016 Established DINGS' Korea

2019 Joined LEILI Group

2021 Established Changzhou Intelligent Manufacturing Factory
Listed on China's NEEQ ('New Third Board') Market

2022 Set up R&D Center in Korea

Listed on the Beijing Stock Exchange [Stock Code : 920593]

2023 Conversion to DINGS' Korea Corporation
Established of DINGS' Japan

2024 Completed Headquarters Smart Manufacturing Base
Established of DINGS' Motion Europe

2025 Establishment of Thailand Manufacturing Base

CERTIFICATIONS



PRODUCT WARRANTY

DINGS' provides a 1-year warranty from the factory shipment date. If caused by quality issues, free repair is provided.

Free maintenance does not apply in the following cases:

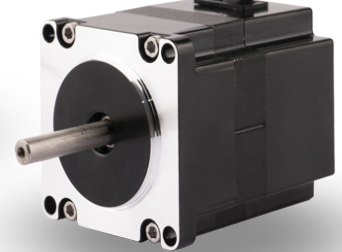
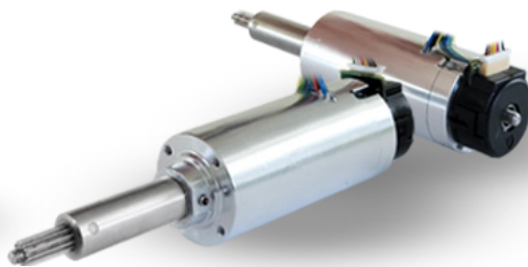
- Warranty period expired
- (including nameplate loss or intentional damage)
- Improper installation, use, or environment
- Unauthorized disassembly or modification
- Repaired by non-accredited personnel
- Damage from natural disasters or force majeure

DINGS' is dedicated to delivering quality, reliability, and responsibility in every product and service.

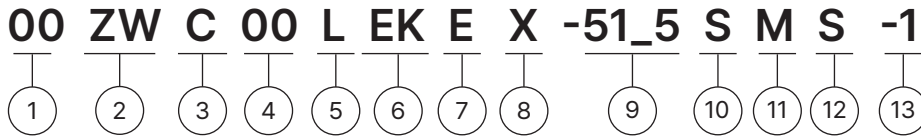
Content

BRUSHLESS DC MOTOR

Part number construction	4
16 mm	5
22 mm	7
28 mm	9
36 mm	11
42 mm	13
57 mm	17
60 mm	20
86 mm	23
110 mm	26
Precision planetary gearbox option	28



Part number construction



① Motor Size

Motor Size(mm)	16	22	28	36	42	57	60	86	110
----------------	----	----	----	----	----	----	----	----	-----

② Product Name

ZW = Slotted Brushless DC Motor

③ Motor Shape

C = Circular Type

S = Square Type

④ Motor Length

Unit : mm

when the length involves decimal points, use "_" instead

⑤ Motor Casing

L = Aluminum

T = Stainless steel / Iron

X = No housing

⑥ Option

EKX = Encoder (X = Encoder Resolution)

B = Brake

GX= Gearbox (X = Gear Ratio)

Note: When Options are not single,

please use in alphabetical order for example, "BEG"

⑦ Structure

E = External type

N = Non-Captive type

C = Electric Cylinder (Captive) type

K = Kaptive type

⑧ Lead Screw Code

Please refer to lead screw code selection table

⑨ Screw Length / Stroke

Kaptive = stroke distance

Non-captive = total length of screw

External = screw extension length from
the mounting flange

⑩ Screw Surface Treatment

T = Teflon coating

S = Standard (No teflon coating)

⑪ End Machining

M = Metric

U = UNC

S = Smooth

C = Customize

N = None

⑫ Nut Style

S = Standard flange nut

A = Anti-backlash nut

C = Customized nut

⑬ Customer Sequence Number

Example

Part Number

57ZWS40L-001

Description

General NEMA 23 size (57mm)
Square type Brushless DC motor
40mm motor length
With case
Customization No. 001

16mm BLDC

16ZWC32L-1 is very compact size but it has optimized magnetic circuit.

Brushless DC Motor with core winding has high torque density and multi-pole rotor can provide very strong and dynamic performance.

16ZWC32L-1 can reach Max. 16,300RPM.

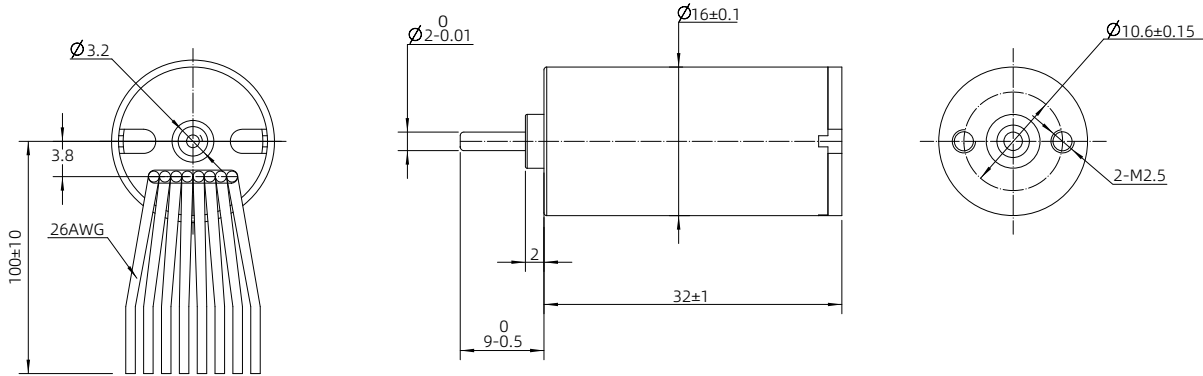


Motor Characteristics

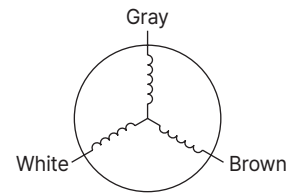
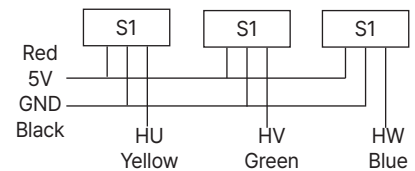
Motor part number		16ZWC32L-1
Body length (LT)	mm	32±1
Pole pairs	-	2
Terminal resistance, Phase-Phase	Ω	6.5
Terminal inductance, Phase-Phase	mH	0.78
Winding connection method	-	Star connection
Insulation class	-	B
Duty type	-	S2
Feedback method	-	Hall sensors
Commutation angle	-	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/1mA/1s
Insulation resistance	-	100MΩ 20C
Weight	g	25.5
Rated voltage	V	24
Rated power	W	9.2
Rated torque	N·m	0.007
Rated speed	RPM	12600
Rated current	A	0.65
No load speed	RPM	16300
No load current	A	0.22
Motor efficiency	%	71.6
Cogging torque	mN·m	4.5
Noise (Ambient noise 20db, test distance 1m)	dB	< 50
Enclosure - Ambient thermal resistance	K/W	0.9
Ambient temperature	°C	25
Maximum winding temperature	°C	68.5
Torque constant	N·m/A	0.011
Back-EMF constant / Effective value	V/Krpm	1.25
Peak torque	N·m	0.021
Peak current	A	1.95
Rotor inertia	g·cm ²	0.45

16mm BLDC

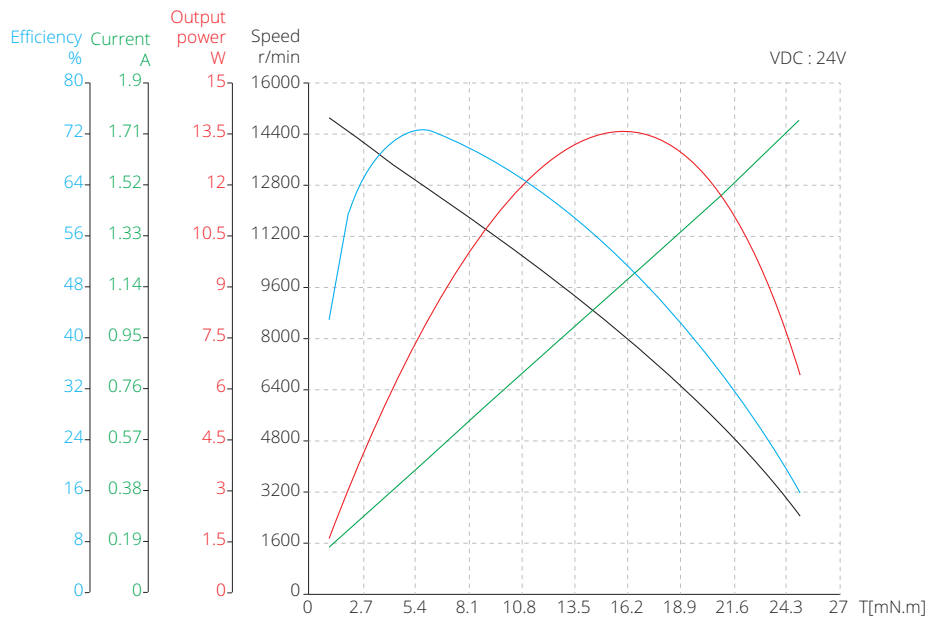
Dimensional Drawings



Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG26	Gray	U phase
	White	V phase
	Brown	W phase



Torque Performance Curves



22mm BLDC

22mm Brushless DC Motor has Max. 0.019N·m rated torque and it can generate 19.9W capacity of rated power.

22mm motor has Star winding connection and 2 pole pairs motor with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

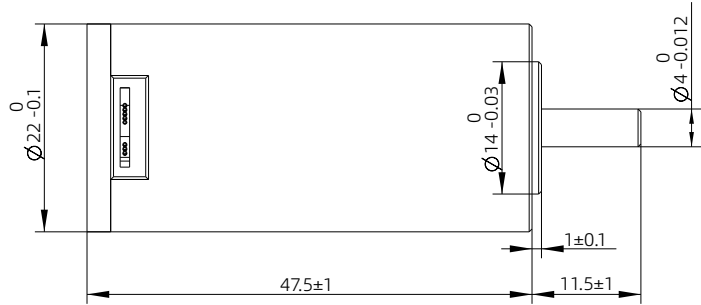
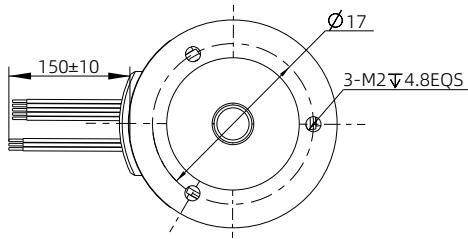


Motor Characteristics

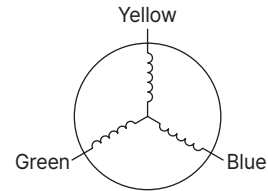
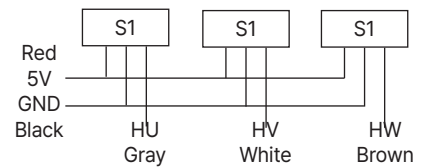
Motor part number		22ZWC48L-1
Body length (LT)	mm	47.5±1
Pole pairs	-	2
Terminal resistance, Phase-Phase	Ω	3.053
Terminal inductance, Phase-Phase	mH	0.54
Winding connection method	-	Star connection
Insulation class	-	B
Duty type	-	S2
Feedback method	-	Hall sensors
Commutation angle	-	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/1mA/1s
Insulation resistance	-	100MΩ 20C
Weight	g	67.7
Rated voltage	V	24
Rated power	W	19.9
Rated torque	N·m	0.019
Rated speed	RPM	10000
Rated current	A	1.2
No load speed	RPM	12000
No load current	A	0.24
Motor efficiency	%	70
Cogging torque	mN·m	3.42
Noise (Ambient noise 20db, test distance 1m)	dB	< 50
Enclosure - Ambient thermal resistance	K/W	0.85
Ambient temperature	°C	25
Maximum winding temperature	°C	75
Torque constant	N·m/A	0.016
Back-EMF constant / Effective value	V/Krpm	1.67
Peak torque	N·m	0.057
Peak current	A	3.6
Rotor inertia	g·cm ²	1.1

22mm BLDC

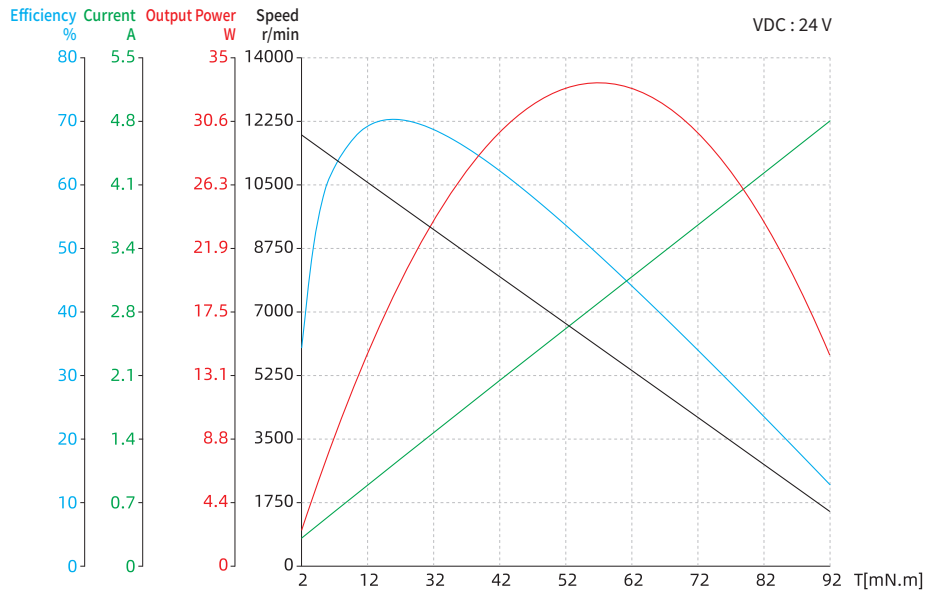
Dimensional Drawings



Lead-out type	Lead-out color	Function
UL3265 AWG26	Gray	Hall U (Hu)
	White	Hall V (Hv)
	Brown	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG26	Yellow	U phase
	Green	V phase
	Blue	W phase



Torque Performance Curves



28mm BLDC

28mm Brushless DC Motor has Max. 0.05N·m rated torque and it can generate 52.4W capacity of rated power.

28mm motor has Star winding connection and 2 pole pairs motor with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

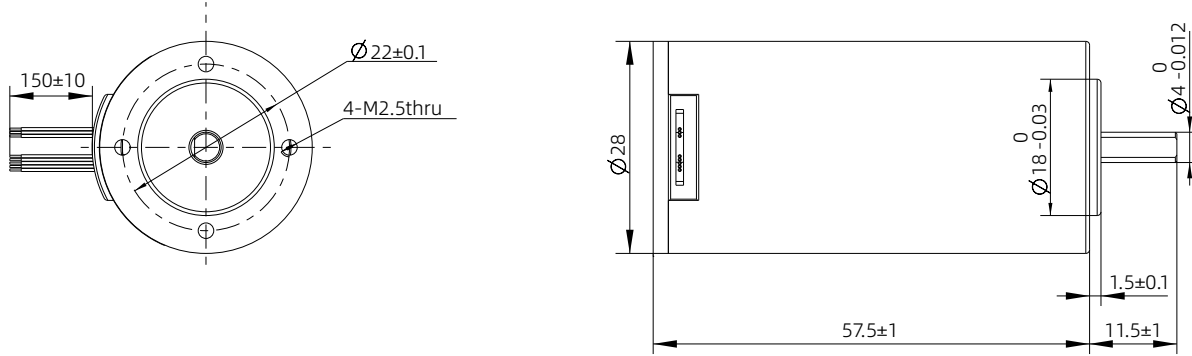


Motor Characteristics

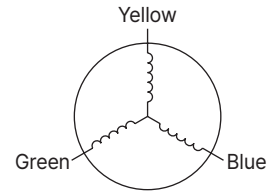
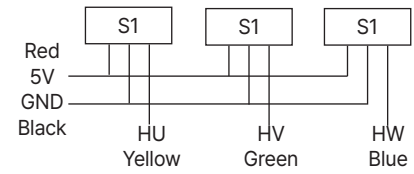
Motor part number		28ZWC58L-1
Body length (LT)	mm	57.5±1
Pole pairs	-	2
Terminal resistance, Phase-Phase	Ω	0.676
Terminal inductance, Phase-Phase	mH	0.2
Winding connection method	-	Star connection
Insulation class	-	B
Duty type	-	S2
Feedback method	-	Hall sensors
Commutation angle	-	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/1mA/1s
Insulation resistance	-	100MΩ 20C
Weight	g	144
Rated voltage	V	24
Rated power	W	52.4
Rated torque	N·m	0.05
Rated speed	RPM	10000
Rated current	A	3
No load speed	RPM	12000
No load current	A	0.5
Motor efficiency	%	77
Cogging torque	mN·m	12.8
Noise (Ambient noise 20db, test distance 1m)	dB	< 50
Enclosure - Ambient thermal resistance	K/W	0.38
Ambient temperature	°C	25
Maximum winding temperature	°C	75
Torque constant	N·m/A	0.017
Back-EMF constant / Effective value	V/Krpm	1.78
Peak torque	N·m	0.15
Peak current	A	9
Rotor inertia	Kg·cm ²	0.011

28mm BLDC

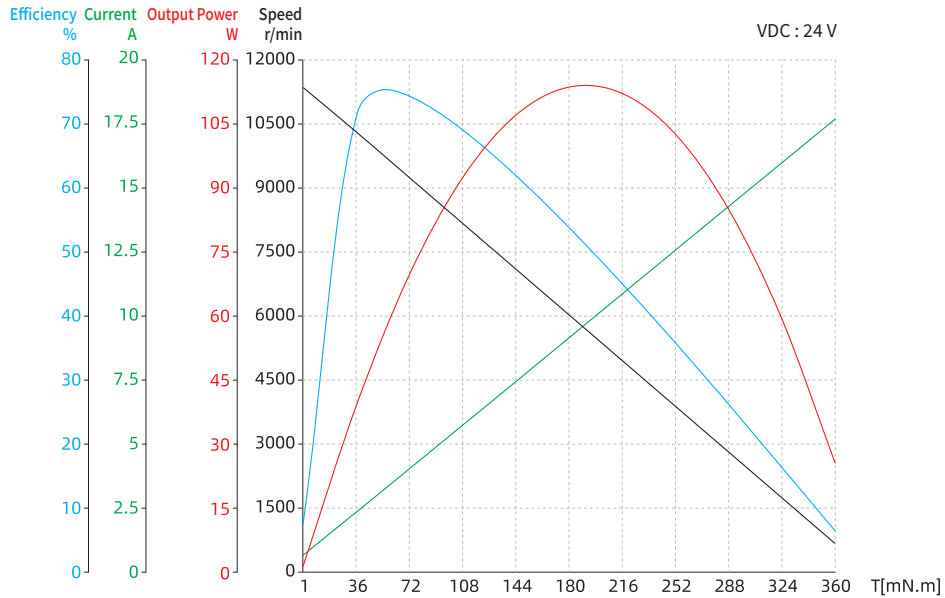
Dimensional Drawings



Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG22	Yellow	U phase
	Green	V phase
	Blue	W phase



Torque Performance Curves



36mm BLDC

36mm Brushless DC Motor has Max. 0.125N·m rated torque and it can generate 130.9W capacity of rated power.

36mm motor has Star winding connection and 2 pole pairs motor with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

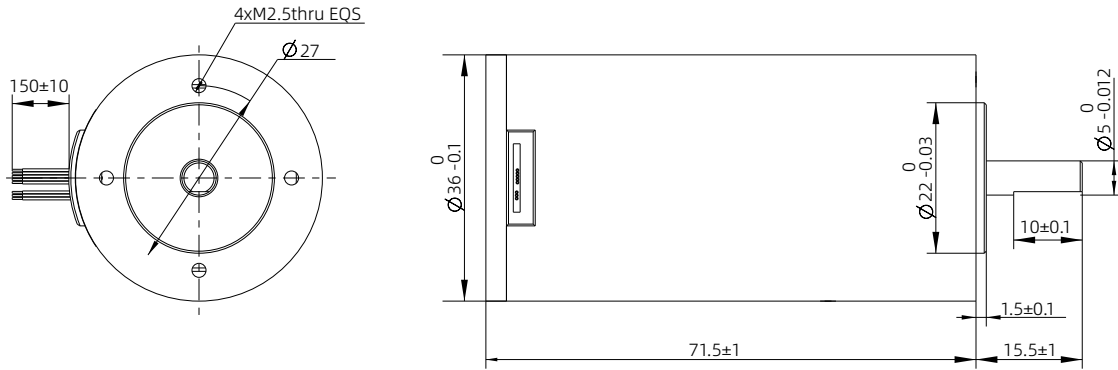


Motor Characteristics

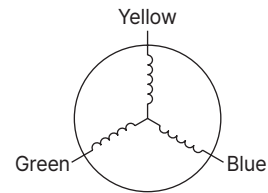
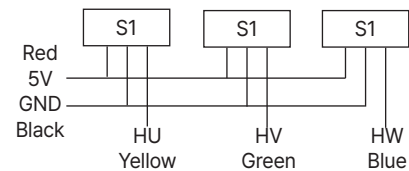
Motor part number		36ZWC72L-1
Body length (LT)	mm	71.5±1
Pole pairs	-	2
Terminal resistance, Phase-Phase	Ω	0.67
Terminal inductance, Phase-Phase	mH	0.37
Winding connection method	-	Star connection
Insulation class	-	B
Duty type	-	S2
Feedback method	-	Hall sensors
Commutation angle	-	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/1mA/1s
Insulation resistance	-	100MΩhm 20C
Weight	g	305.6
Rated voltage	V	48
Rated power	W	130.9
Rated torque	N·m	0.125
Rated speed	RPM	10000
Rated current	A	3.6
No load speed	RPM	12000
No load current	A	0.5
Motor efficiency	%	80
Cogging torque	mN·m	35.5
Noise (Ambient noise 20db, test distance 1m)	dB	< 50
Enclosure - Ambient thermal resistance	K/W	0.24
Ambient temperature	°C	25
Maximum winding temperature	°C	75
Torque constant	N·m/A	0.035
Back-EMF constant / Effective value	V/Krpm	3.67
Peak torque	N·m	0.375
Peak current	A	10.8
Rotor inertia	Kg·cm ²	0.037

36mm BLDC

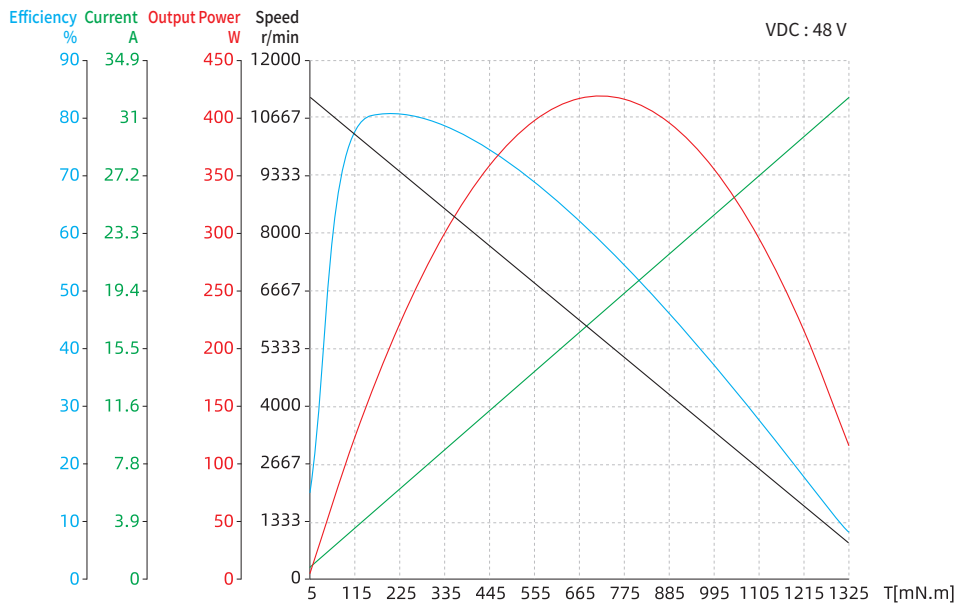
Dimensional Drawings



Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG22	Yellow	U phase
	Green	V phase
	Blue	W phase



Torque Performance Curves

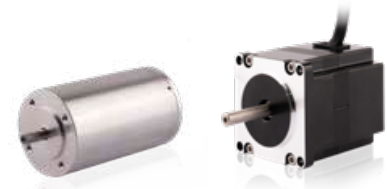


42mm BLDC

42mm Brushless DC Motor has Max. 0.2N·m rated torque and it can generate 209.4W capacity of rated power.

42mm motors have Star winding connection and 2 or 5 pole pairs motor with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.



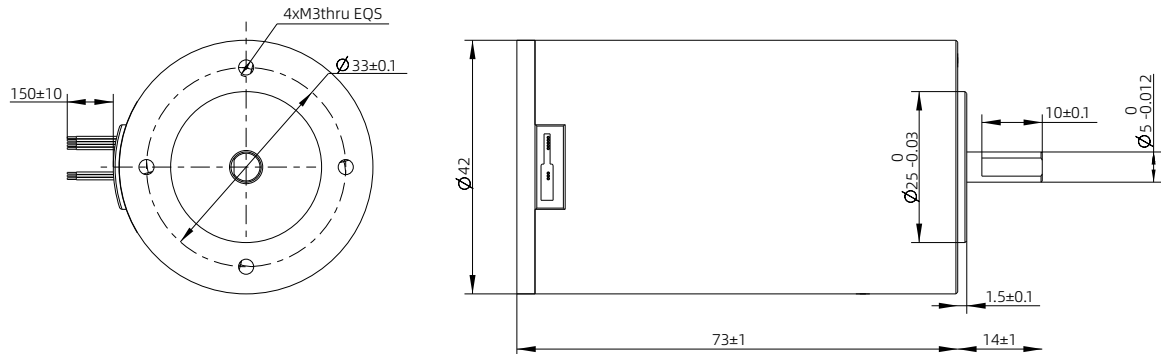
Motor Characteristics

Motor part number		42ZWC75L-1	42ZWC75L-2	42ZWS50X-1	42ZWS63X-1	42ZWS75X-1
Body length (LT)	mm	73±1	73±1	50±1	63±1	75±1
Pole pairs	-	2	2	5	5	5
Terminal resistance, Phase-Phase	Ω	0.24	0.19	2.482	1.261	0.987
Terminal inductance, Phase-Phase	mH	0.15	0.12	1.062	0.586	0.434
Winding connection method	-	Star connection	Star connection	Star connection	Star connection	Star connection
Insulation class	-	B	B	B	B	B
Duty type	-	S2	S2	S2	S2	S2
Feedback method	-	Hall sensors	Hall sensors	Hall sensors	Hall sensors	Hall sensors
Commutation angle	-	120°	120°	120°	120°	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s
Insulation resistance	-	100MΩhm 20C	100MΩhm 20C	100MΩhm 20C	100MΩhm 20C	100MΩhm 20C
Weight	g	425.8	425.8	260	380	500
Rated voltage	V	48	24	24	24	24
Rated power	W	209.4	83	19.6	39.3	58.1
Rated torque	N·m	0.2	0.08	0.0625	0.125	0.185
Rated speed	RPM	10000	10000	3000	3000	3000
Rated current	A	5.5	4.3	1.2	2.4	3.6
No load speed	RPM	12000	12000	4000	4000	4000
No load current	A	0.86	0.7	0.15	0.3	0.45
Motor efficiency	%	80	80	72	77.6	76
Noise (Ambient noise 20db, test distance 1m)	dB	< 50	< 50	< 50	< 50	< 50
Enclosure - Ambient thermal resistance	K/W	0.085	0.25	0.75	0.38	0.25
Ambient temperature	°C	25	25	31.3	31.3	31.3
Maximum winding temperature	°C	75	75	68.5	68.5	68.5
Torque constant	N·m/A	0.036	0.019	0.052	0.052	0.051
Back-EMF constant / Effective value	V/Krpm	3.77	1.99	5.44	5.44	5.44
Peak torque	N·m	0.6	0.24	0.1875	0.375	0.555
Peak current	A	16.5	12.9	3.6	7.2	10.8
Rotor inertia	Kg·cm ²	0.084	0.084	0.05	0.1	0.15

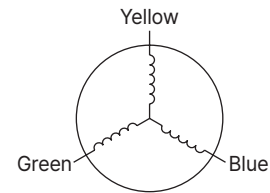
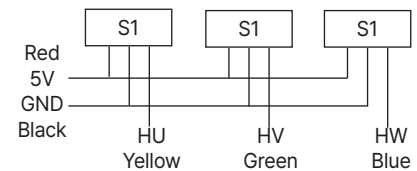
42mm BLDC

Dimensional Drawings

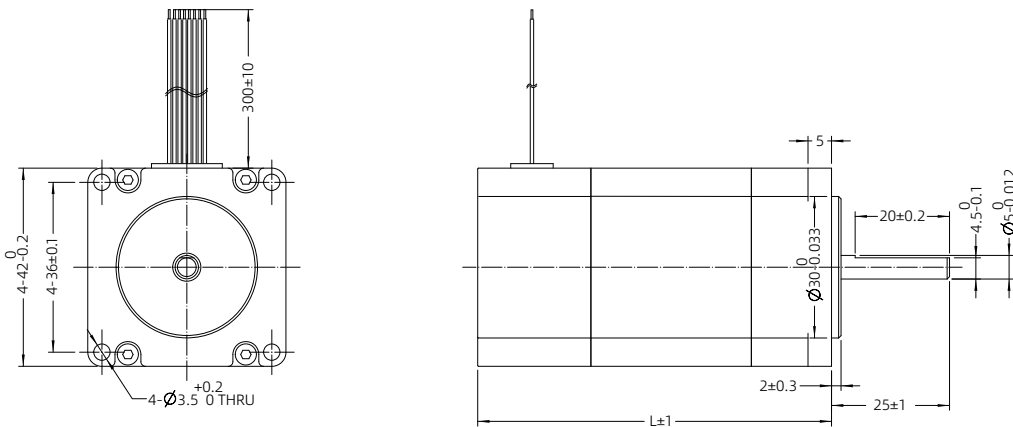
● 42ZWC75L



Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG22	Yellow	U phase
	Green	V phase
	Blue	W phase

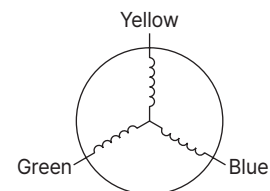
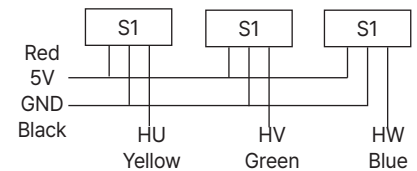


● 42ZWS**X



Motor type	L (mm)
42ZWS50X-1	50±1
42ZWS63X-1	63±1
42ZWS75X-1	75±1

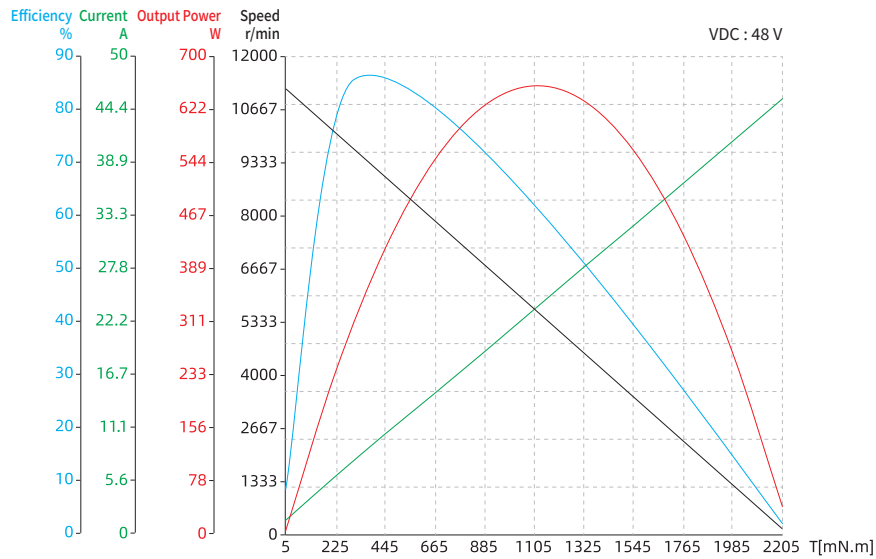
Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG22	Yellow	U phase
	Green	V phase
	Blue	W phase



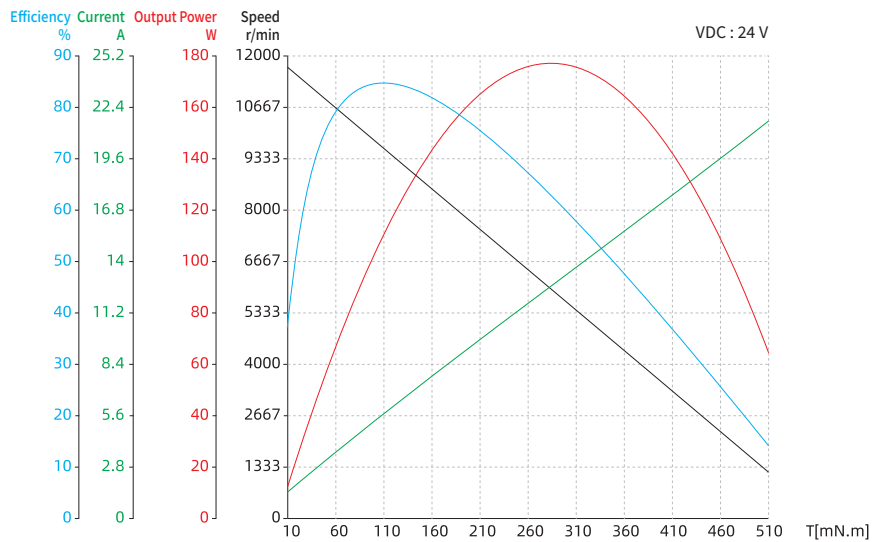
42mm BLDC

Torque Performance Curves

● 42ZWC75L-1

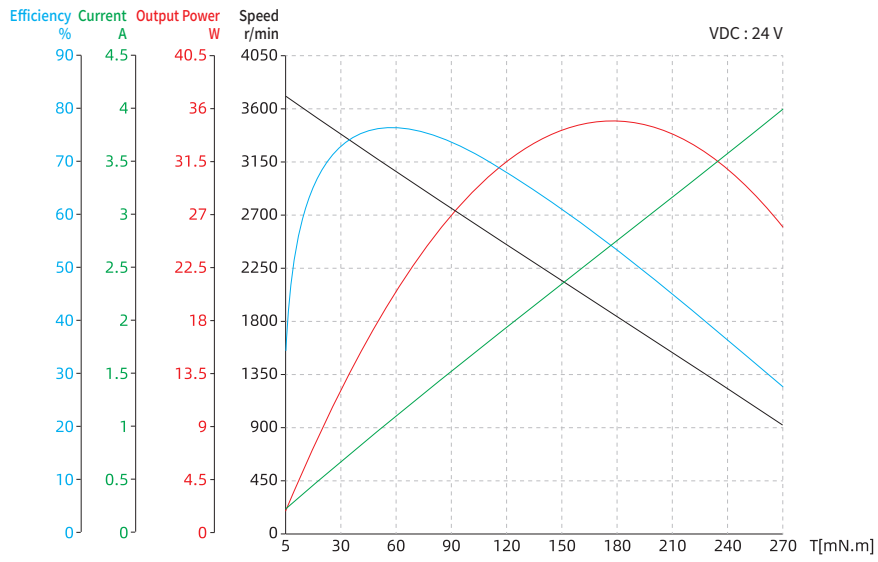


● 42ZWC75L-2

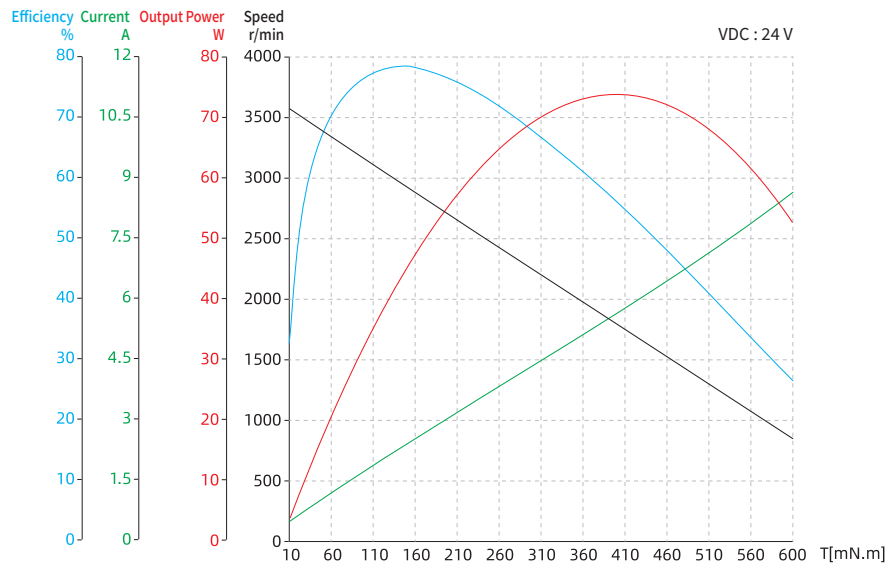


42mm BLDC

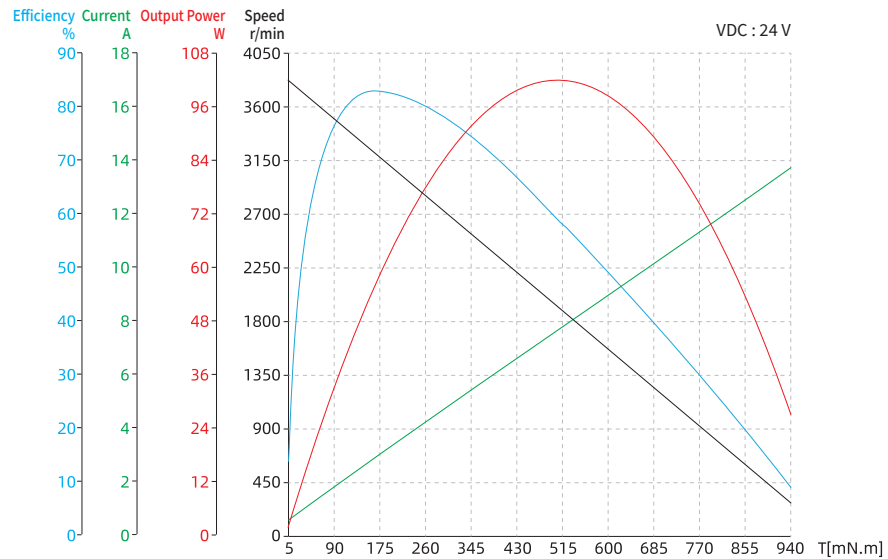
● 42ZWS50X-1



● 42ZWS63X-1



● 42ZWS75X-1



57mm BLDC

57mm Brushless DC Motor has Max. 0.33N·m rated torque and it can generate 103.7W capacity of rated power.

57mm motors have Star winding connection and 5 pole pairs motors with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

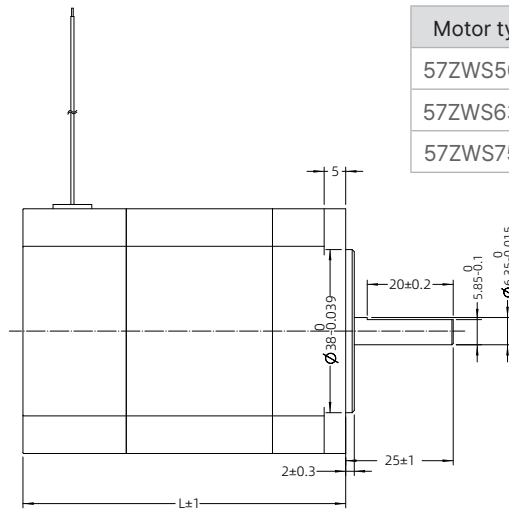
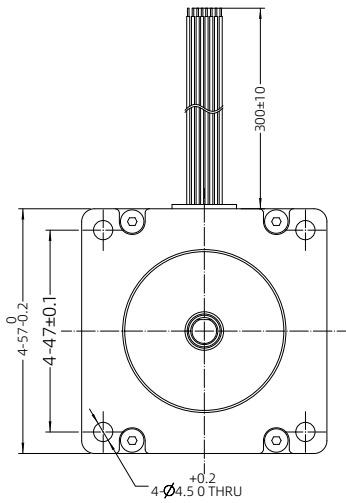


Motor Characteristics

Motor part number		57ZWS50X-1	57ZWS63X-1	57ZWS75X-1
Body length (LT)	mm	50±1	63±1	75±1
Pole pairs	-	5	5	5
Terminal resistance, Phase-Phase	Ω	0.958	0.473	0.301
Terminal inductance, Phase-Phase	mH	0.742	0.357	0.205
Winding connection method	-	Star connection	Star connection	Star connection
Insulation class	-	B	B	B
Duty type	-	S1	S1	S1
Feedback method	-	Hall sensors	Hall sensors	Hall sensors
Commutation angle	-	120°	120°	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s
Insulation resistance	-	100MΩ 20C	100MΩ 20C	100MΩ 20C
Weight	kg	0.42	0.65	0.87
Rated voltage	V	24	24	24
Rated power	W	37.4	69.1	103.7
Rated torque	N·m	0.119	0.22	0.33
Rated speed	RPM	3000	3000	3000
Rated current	A	2.2	4.1	6
No load speed	RPM	4000	4000	4000
No load current	A	0.25	0.5	0.75
Motor efficiency	%	78	80	82
Noise (Ambient noise 20db, test distance 1m)	dB	< 50	< 50	< 50
Enclosure - Ambient thermal resistance	K/W	0.53	0.27	0.18
Ambient temperature	°C	29	29	29
Maximum winding temperature	°C	77.4	77.4	77.4
Torque constant	N·m/A	0.054	0.054	0.055
Back-EMF constant / Effective value	V/Krpm	5.66	5.66	5.66
Peak torque	N·m	0.357	0.66	0.99
Peak current	A	6.6	12.3	18
Rotor inertia	Kg·cm ²	0.19	0.38	0.56

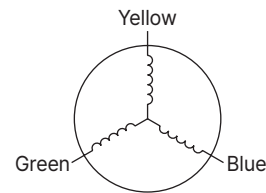
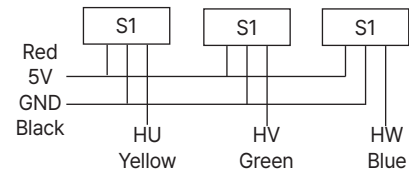
57mm BLDC

Dimensional Drawings



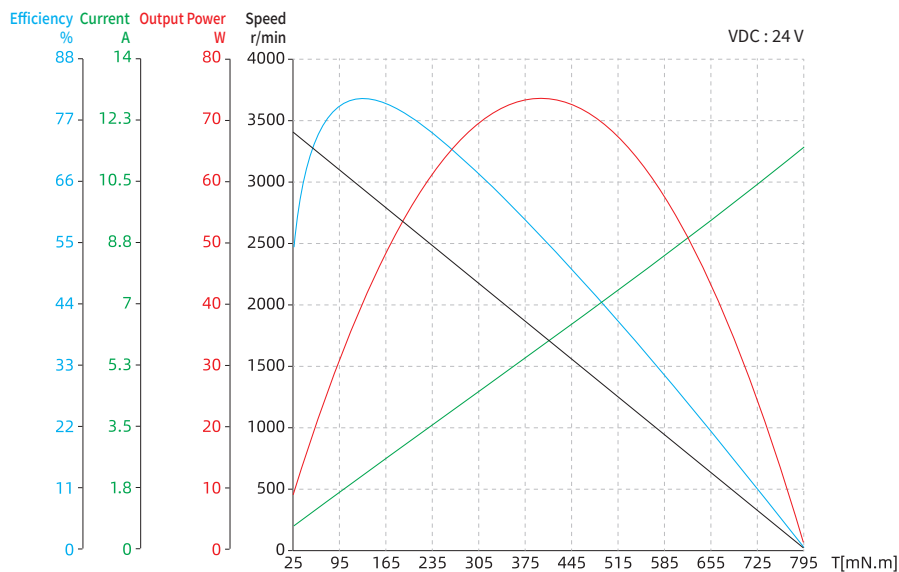
Motor type	L (mm)
57ZWS50X-1	50±1
57ZWS63X-1	63±1
57ZWS75X-1	75±1

Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG18	Yellow	U phase
	Green	V phase
	Blue	W phase



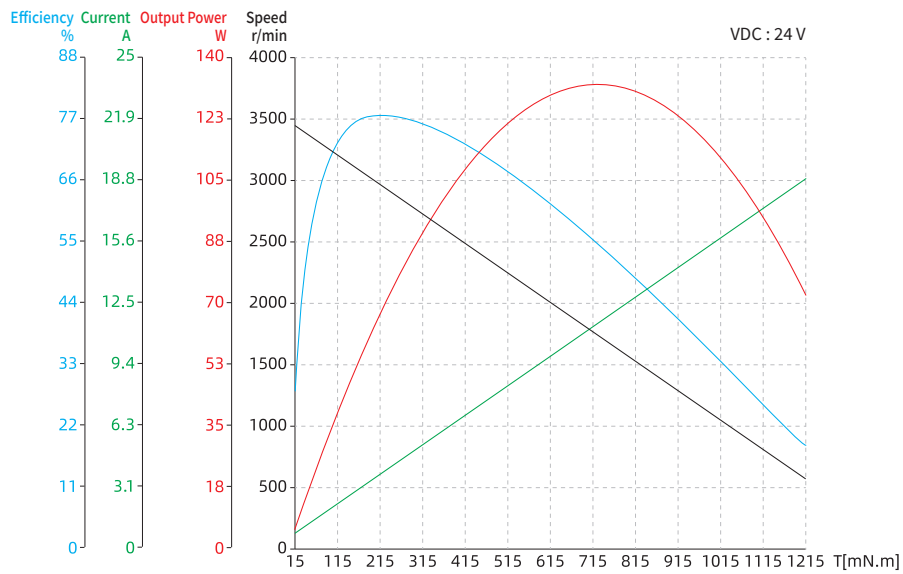
Torque Performance Curves

- 57ZWS50X-1

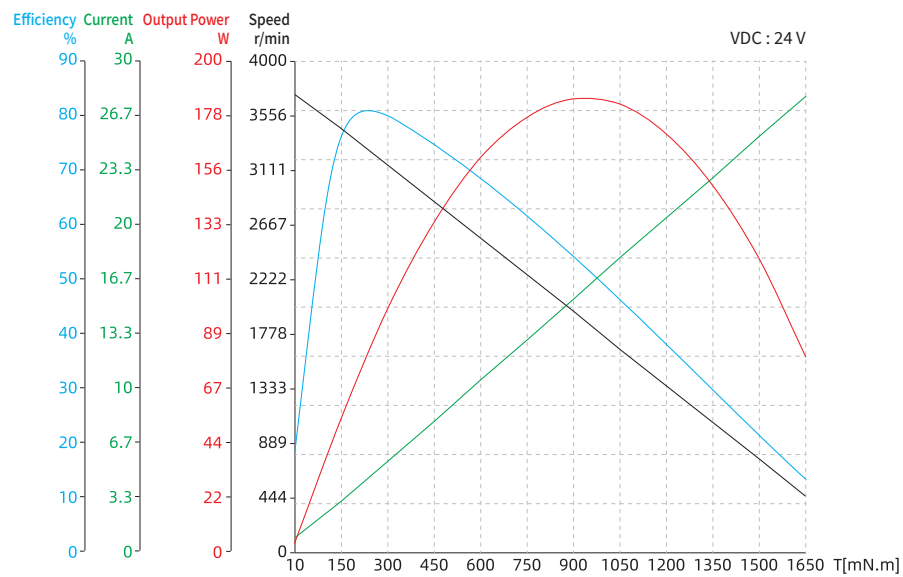


57mm BLDC

● 57ZWS63X-1



● 57ZWS75X-1



60mm BLDC

60mm Brushless DC Motor has Max. 0.46N·m rated torque and it can generate 144.5W capacity of rated power.

60mm motors have Star winding connection and 5 pole pairs motors with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

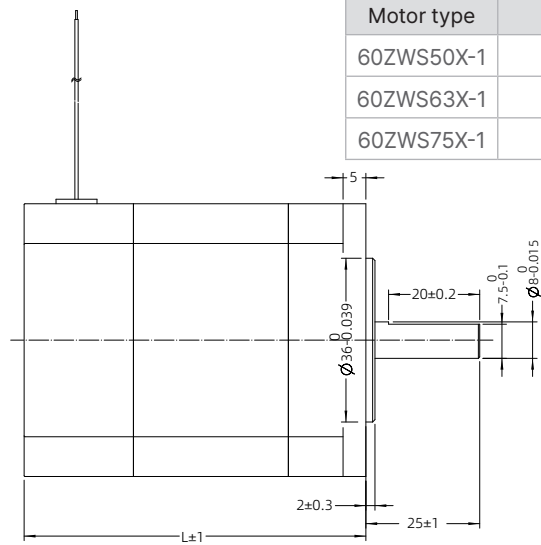
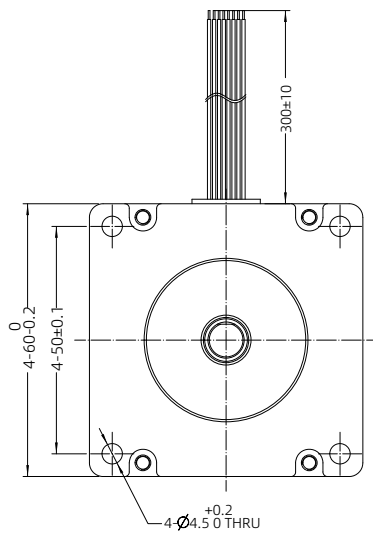


Motor Characteristics

Motor part number		60ZWS50X-1	60ZWS63X-1	60ZWS75X-1
Body length (LT)	mm	50±1	63±1	75±1
Pole pairs	-	5	5	5
Terminal resistance, Phase-Phase	Ω	0.886	0.334	0.233
Terminal inductance, Phase-Phase	mH	0.682	0.305	0.183
Winding connection method	-	Star connection	Star connection	Star connection
Insulation class	-	B	B	B
Duty type	-	S1	S1	S1
Feedback method	-	Hall sensors	Hall sensors	Hall sensors
Commutation angle	-	120°	120°	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s
Insulation resistance	-	100MΩ 20C	100MΩ 20C	100MΩ 20C
Weight	kg	0.51	0.77	1
Rated voltage	V	24	24	24
Rated power	W	47.1	97.4	144.5
Rated torque	N·m	0.15	0.31	0.46
Rated speed	RPM	3000	3000	3000
Rated current	A	2.7	5.5	8.2
No load speed	RPM	3500	3500	3500
No load current	A	0.29	0.58	0.87
Motor efficiency	%	81.1	82.6	83
Noise (Ambient noise 20db, test distance 1m)	dB	< 50	< 50	< 50
Enclosure - Ambient thermal resistance	K/W	0.57	0.28	0.19
Ambient temperature	°C	30	30	30
Maximum winding temperature	°C	87	87	87
Torque constant	N·m/A	0.056	0.056	0.056
Back-EMF constant / Effective value	V/Krpm	5.87	5.87	5.87
Peak torque	N·m	0.45	0.93	1.38
Peak current	A	8.1	16.5	24.6
Rotor inertia	Kg·cm ²	0.22	0.44	0.66

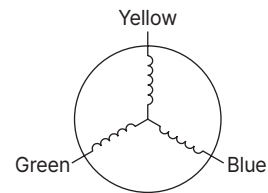
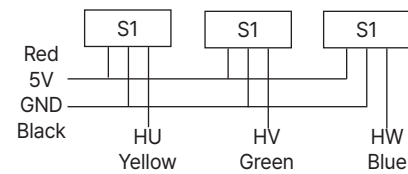
60mm BLDC

Dimensional Drawings



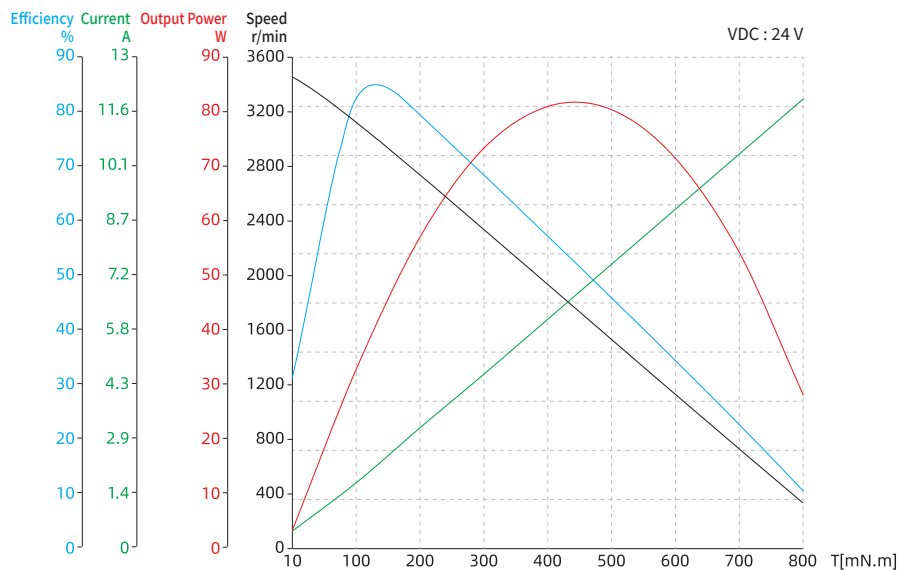
Motor type	L (mm)
60ZWS50X-1	50±1
60ZWS63X-1	63±1
60ZWS75X-1	75±1

Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG18	Yellow	U phase
	Green	V phase
	Blue	W phase



Torque Performance Curves

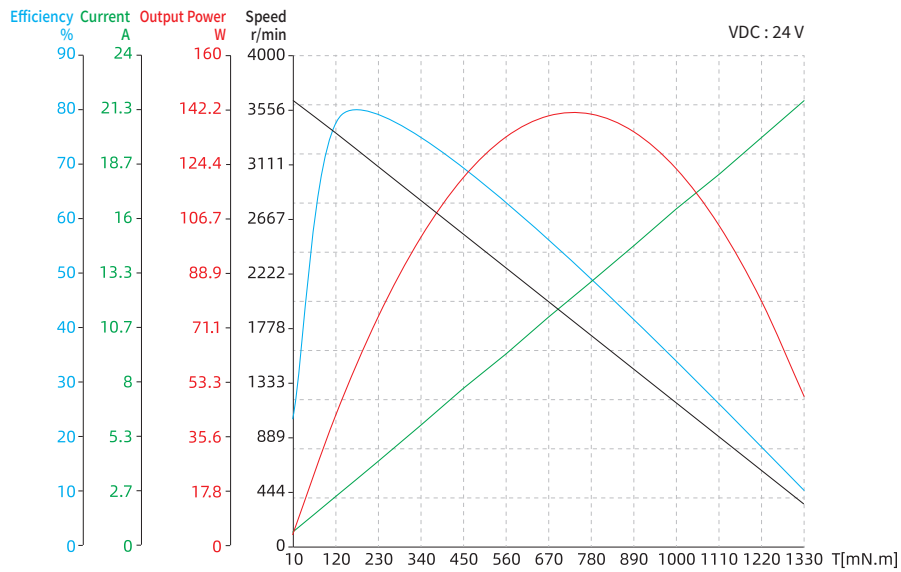
60ZWS50X-1



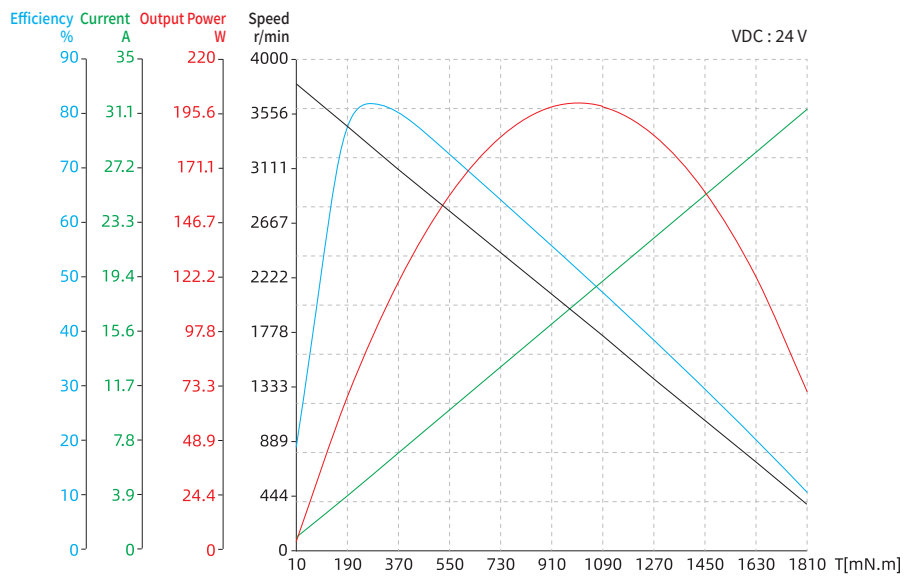
Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

60mm BLDC

● 60ZWS63X-1



● 60ZWS75X-1



86mm BLDC

86mm Brushless DC Motor has Max. 1.5N·m rated torque and it can generate 471.2W capacity of rated power.

86mm motors have Star winding connection and 5 pole pairs motors with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

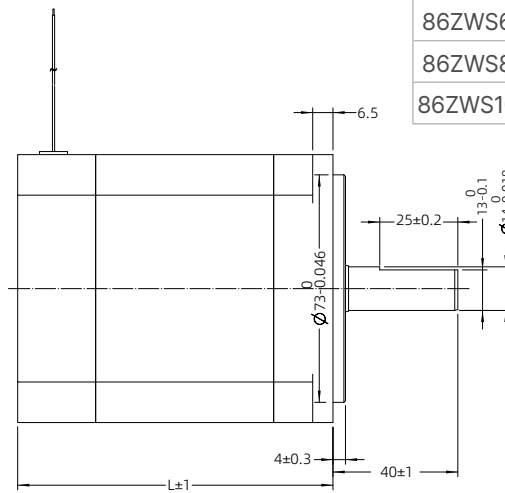
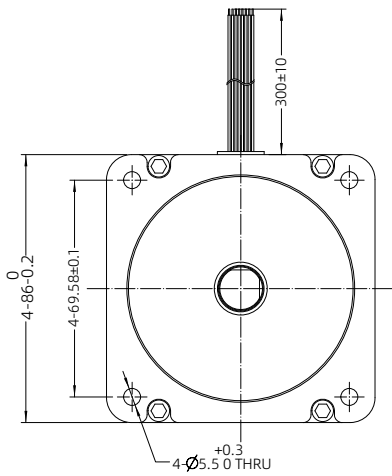


Motor Characteristics

Motor part number		86ZWS61X-1	86ZWS81X-1	86ZWS101X-1
Body length (LT)	mm	61±1	81±1	101±1
Pole pairs	-	5	5	5
Terminal resistance, Phase-Phase	Ω	0.492	0.21	0.13
Terminal inductance, Phase-Phase	mH	1.139	0.44	0.25
Winding connection method	-	Star connection	Star connection	Star connection
Insulation class	-	B	B	B
Duty type	-	S1	S1	S1
Feedback method	-	Hall sensors	Hall sensors	Hall sensors
Commutation angle	-	120°	120°	120°
Insulation strength (Withstand voltage)	-	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s	500VAC/1KHz/ 1mA/1s
Insulation resistance	-	100MΩ 20C	100MΩ 20C	100MΩ 20C
Weight	kg	1.38	2.18	3
Rated voltage	V	48	48	48
Rated power	W	157.1	314.1	471.2
Rated torque	N·m	0.5	1	1.5
Rated speed	RPM	3000	3000	3000
Rated current	A	4.7	9.4	14.1
No load speed	RPM	3600	3600	3600
No load current	A	0.35	0.7	1.05
Motor efficiency	%	86.5	85.5	83.7
Noise (Ambient noise 20db, test distance 1m)	dB	< 50	< 50	< 50
Enclosure - Ambient thermal resistance	K/W	0.61	0.31	0.2
Ambient temperature	°C	30	30	30
Maximum winding temperature	°C	90	90	90
Torque constant	N·m/A	0.106	0.106	0.106
Back-EMF constant / Effective value	V/Krpm	11.1	11.1	11.1
Peak torque	N·m	1.5	3	4.5
Peak current	A	14.1	28.2	42.3
Rotor inertia	Kg·cm ²	1.4	2.8	4.2

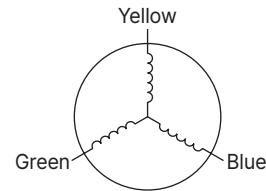
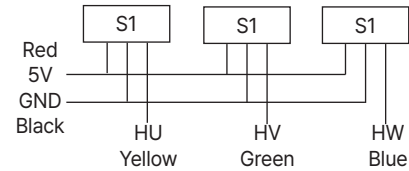
86mm BLDC

Dimensional Drawings



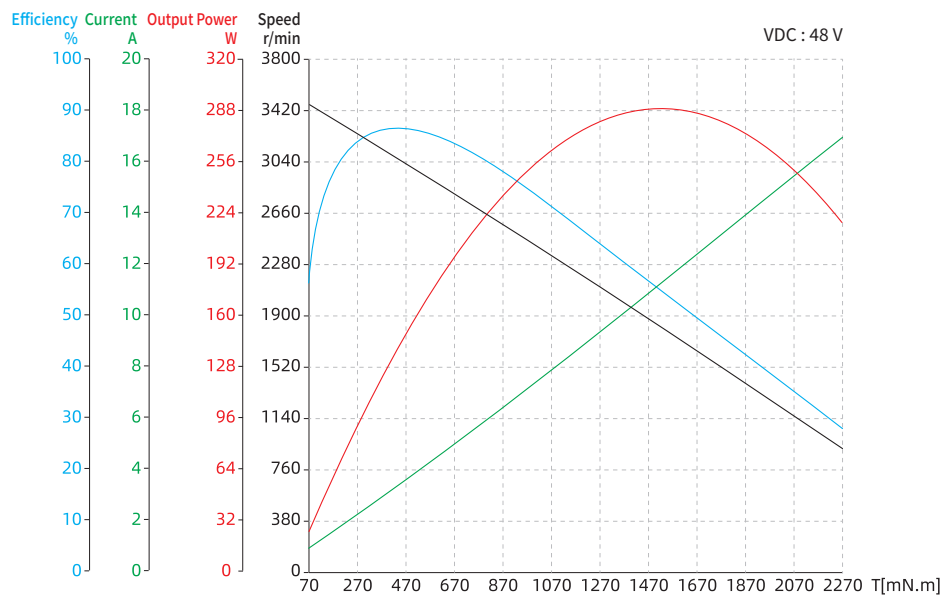
Motor	L (mm)
86ZWS61X-1	61±1
86ZWS81X-1	81±1
86ZWS101X-1	101±1

Lead-out type	Lead-out color	Function
UL3265 AWG26	Yellow	Hall U (Hu)
	Green	Hall V (Hv)
	Blue	Hall W (Hw)
	Red	Hall power supply positive (Vcc)
	Black	Hall power supply negative (GND)
UL3265 AWG18	Yellow	U phase
	Green	V phase
	Blue	W phase



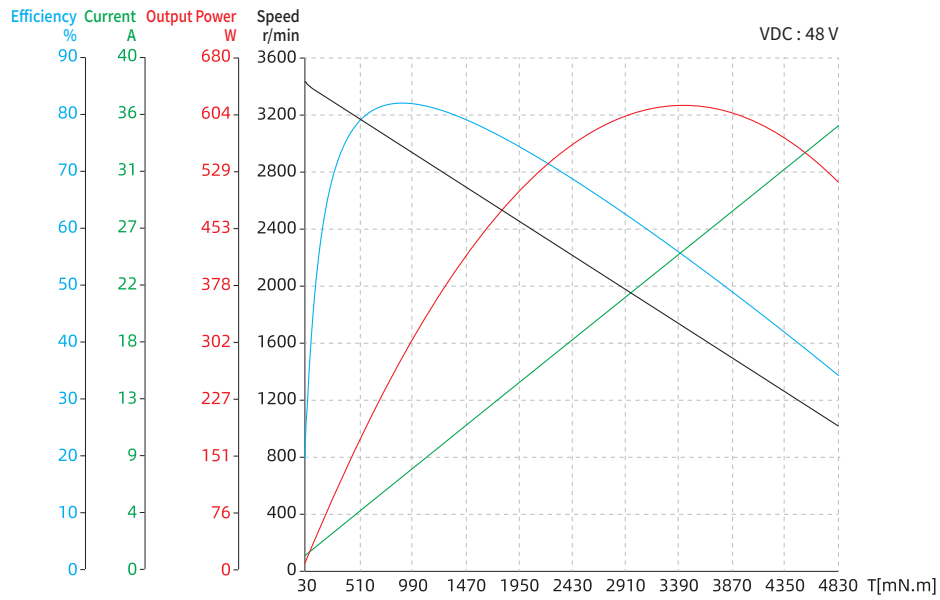
Torque Performance Curves

86ZWS61X-1

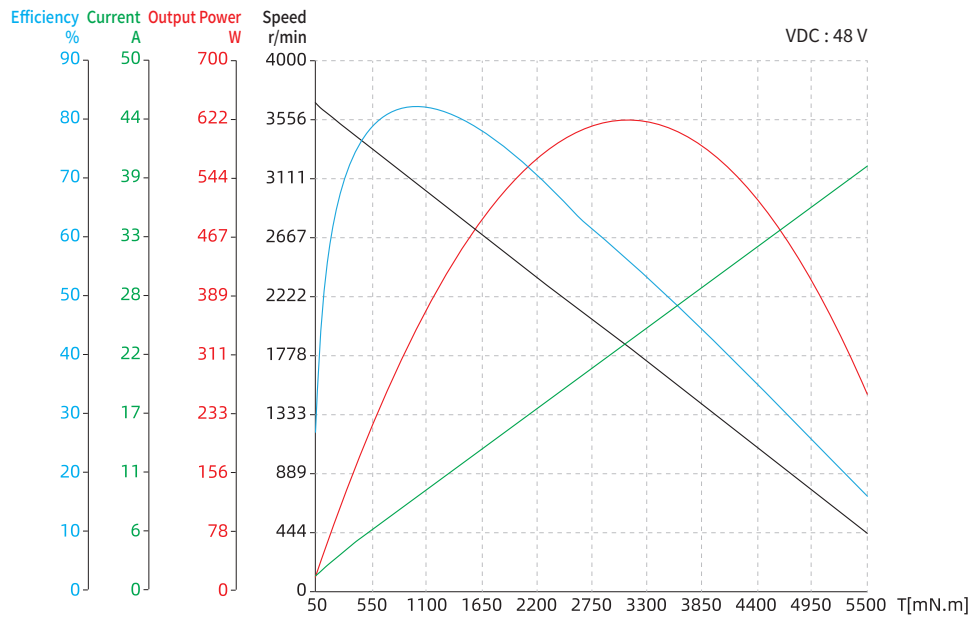


86mm BLDC

● 86ZWS81X-1



● 86ZWS101X-1



110mm BLDC

110mm Brushless DC Motor has Max. 4.6N·m rated torque and it can generate 710W capacity of rated power.

110mm motor has Star winding connection and 5 pole pairs motors with Hall sensors feed back method as standard.

In addition, gearbox and incremental encoder are available.

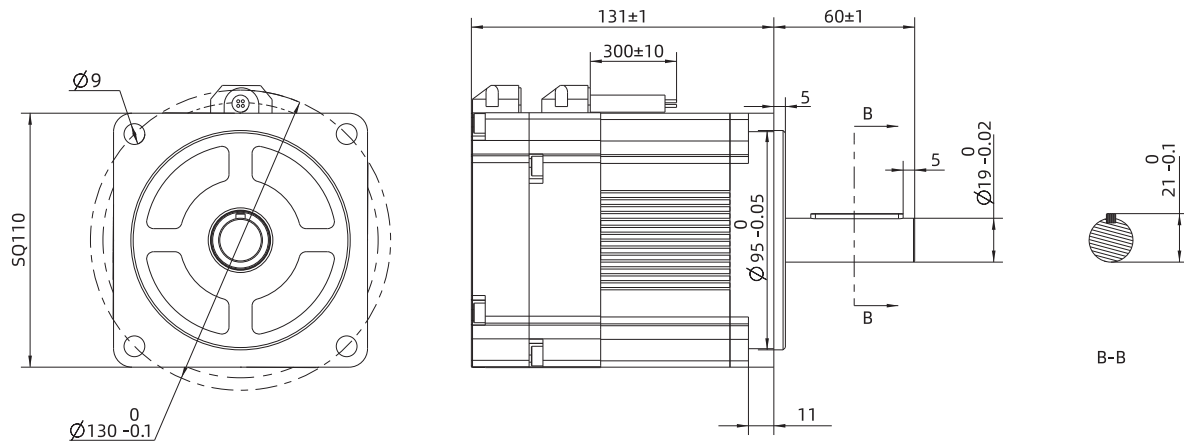


Motor Characteristics

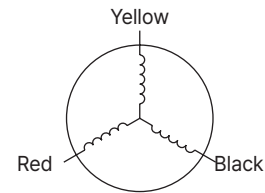
Motor part number		110ZWS132XE-1
Body length (LT)	mm	131±1
Pole pairs	-	5
Terminal resistance, Phase-Phase	Ω	1.04
Terminal inductance, Phase-Phase	mH	3.658
Winding connection method	-	Star connection
Insulation class	-	B
Duty type	-	S1
Commutation angle	-	120°
Insulation strength (Withstand voltage)	-	1000VAC/1KHz/1mA/1s
Insulation resistance	-	100MΩ 20C
Weight	kg	3
Rated voltage	V	120
Rated power	W	710
Rated torque	N·m	4.6
Rated speed	RPM	1500
Rated current	A	9.6
No load speed	RPM	1850
No load current	A	0.65
Motor efficiency	%	90
Noise (Ambient noise 20db, test distance 1m)	dB	< 50
Enclosure - Ambient thermal resistance	K/W	0.36
Ambient temperature	°C	20
Maximum winding temperature	°C	88
Torque constant	N·m/A	0.479
Back-EMF constant / Effective value	V/Krpm	67.83
Peak torque	N·m	13.8
Peak current	A	28.8
Rotor inertia	Kg·cm ²	10.2

110mm BLDC

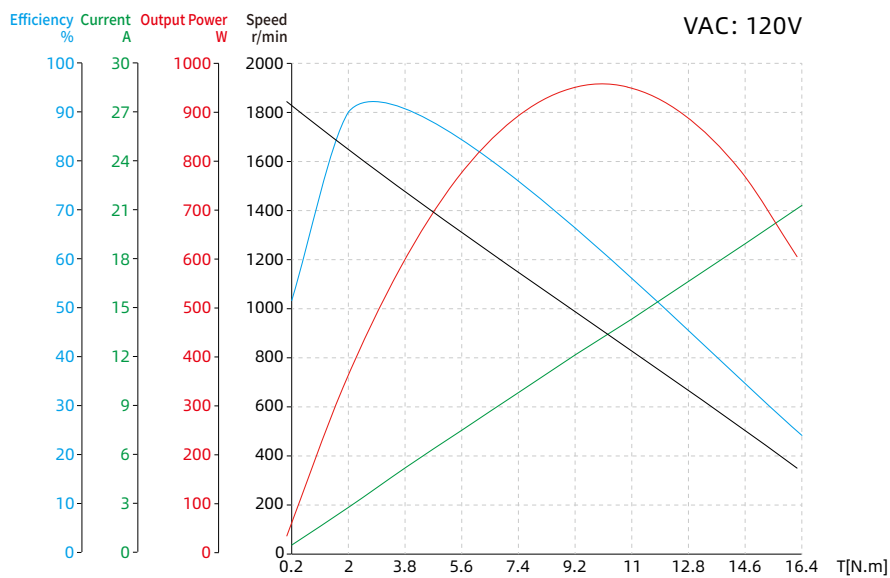
Dimensional Drawings



Lead-out type	Lead-out color	Function
UL3265 AWG16	Yellow	U phase
	Red	V phase
	Black	W phase



Torque Performance Curves

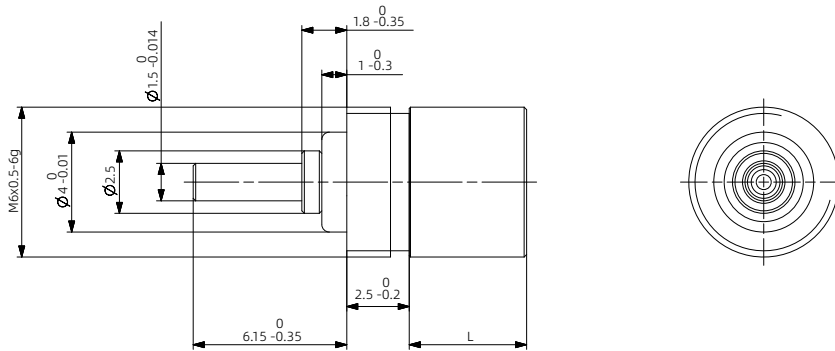


Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

Precision Planetary Gearbox

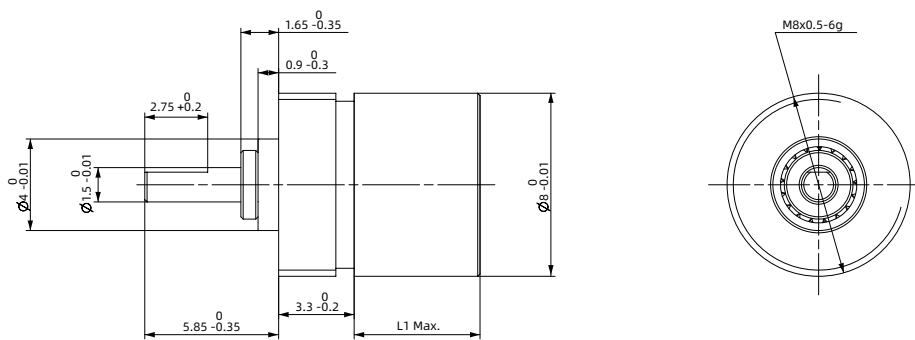
■ Precision planetary gearbox

● 6PGX



Stage	-	Stage 1	Stage 2	Stage 3
Gear ratio	X : 1	3.9	15	57
Max. backlash	°	1.8	2.0	2.2
Max. continuous output power	W	0.65	0.4	0.2
Max. peak output power	W	0.8	0.5	0.25
Max. continuous input speed	rpm	20000	20000	20000
Max. peak input speed	rpm	25000	25000	25000
Max. continuous torque	N·m	0.002	0.005	0.01
Max. peak torque	N·m	0.005	0.01	0.02
Max. efficiency	%	88	77	68
Weight	g	1.6	2	2.4
Gearbox length L	mm	4.7	7.2	9.7

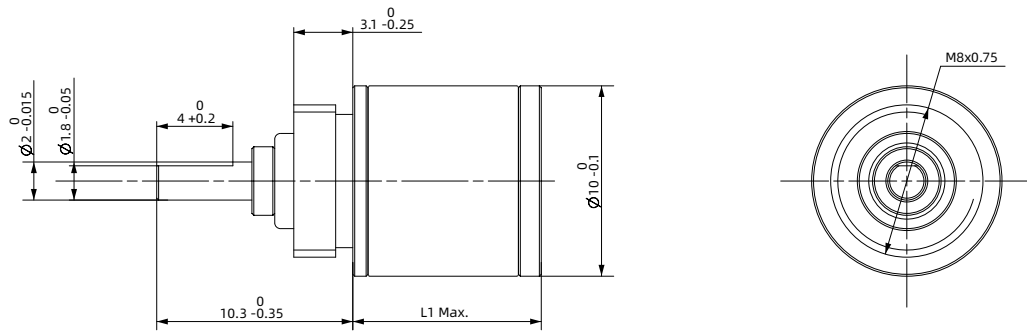
● 8PGX



Stage	-	Stage 1	Stage 2	Stage 3
Gear ratio	X : 1	4	16	64
Max. backlash	°	1.8	2.0	2.2
Max. continuous output power	W	0.84	0.52	0.4
Max. peak output power	W	1.05	0.65	0.5
Max. continuous input speed	rpm	14000	14000	14000
Max. peak input speed	rpm	20000	20000	20000
Max. continuous torque	N·m	0.01	0.02	0.06
Max. peak torque	N·m	0.015	0.03	0.09
Max. efficiency	%	90	81	72
Weight	g	2.6	3.2	3.8
Gearbox length L	mm	5.5	8.1	10.7

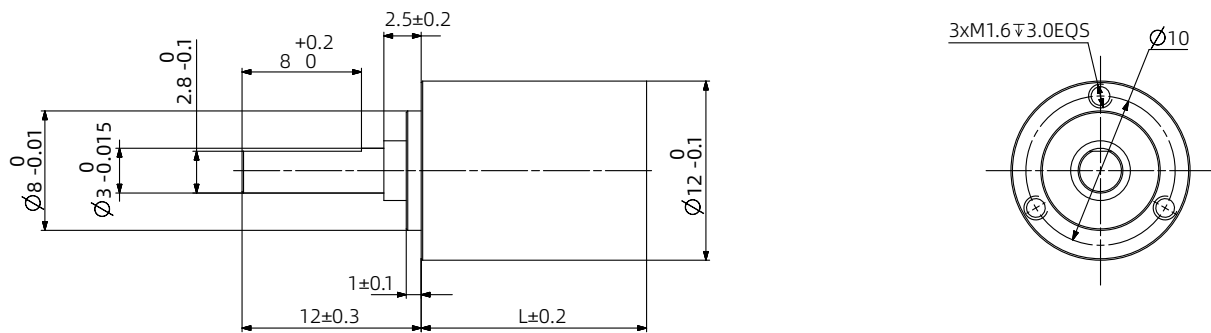
Precision Planetary Gearbox

● 10PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.25	18	77	326
Max. backlash	°	1.5	1.8	2.0	2.2
Max. continuous output power	W	1.6	1.2	1.0	0.4
Max. peak output power	W	2	1.5	1.3	0.5
Max. continuous input speed	rpm	14000	14000	14000	14000
Max. peak input speed	rpm	18000	18000	18000	18000
Max. continuous torque	N·m	0.01	0.03	0.10	0.15
Max. peak torque	N·m	0.02	0.05	0.15	0.2
Max. efficiency	%	90	81	73	65
Weight	g	6.8	7.3	7.8	8.3
Gearbox length L	mm	10.1	13.6	17.1	20.6

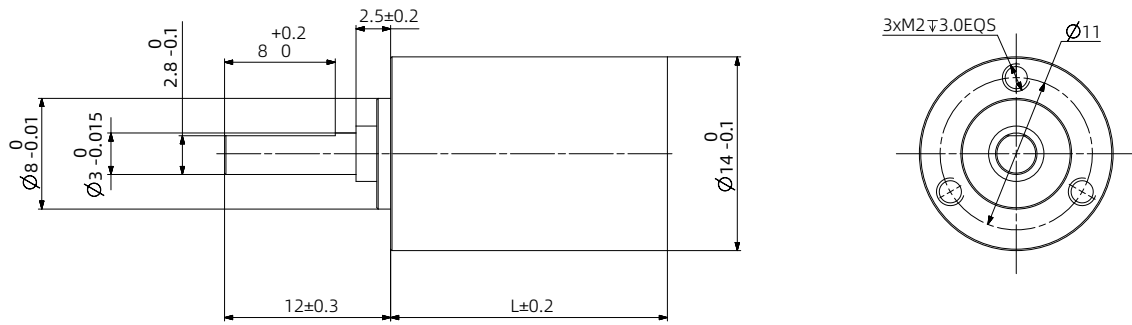
● 12PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.3	18.4	79	337
Max. backlash	°	1.2	1.5	1.8	2.1
Max. continuous output power	W	2.0	1	0.5	0.25
Max. peak output power	W	2.5	1.25	0.65	0.3
Max. continuous input speed	rpm	16000	16000	16000	16000
Max. peak input speed	rpm	20000	20000	20000	20000
Max. continuous torque	N·m	0.08	0.11	0.14	0.17
Max. peak torque	N·m	0.1	0.14	0.18	0.21
Max. efficiency	%	90	80	75	65
Weight	g	9	12	15	18
Gearbox length L	mm	11.3	15.1	18.9	22.7

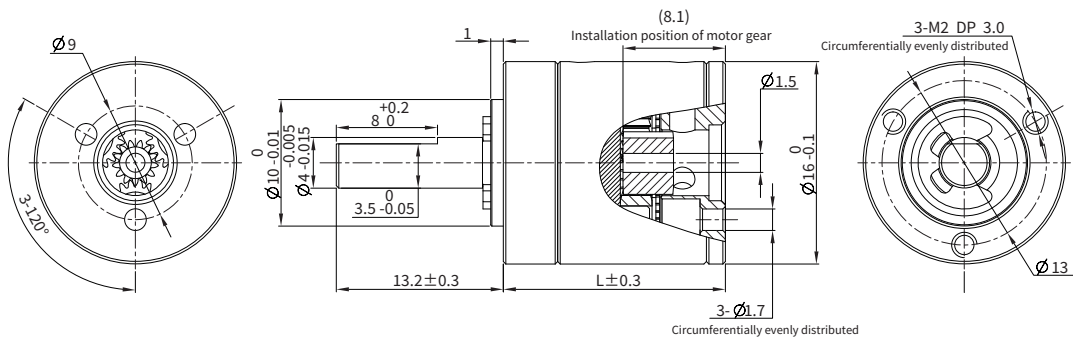
Precision Planetary Gearbox

● 14PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	4.3	18.4	79	337
Max. backlash	°	1.1	1.3	1.45	1.7
Max. continuous output power	W	4.0	2.0	1.0	0.4
Max. peak output power	W	5.0	2.5	1.25	0.5
Max. continuous input speed	rpm	14000	16000	16000	16000
Max. peak input speed	rpm	18000	20000	20000	20000
Max. continuous torque	N·m	0.16	0.2	0.25	0.3
Max. peak torque	N·m	0.2	0.25	0.31	0.38
Max. efficiency	%	90	80	75	65
Weight	g	11	15	19	23
Gearbox length L	mm	11.8	16.1	20.4	24.7

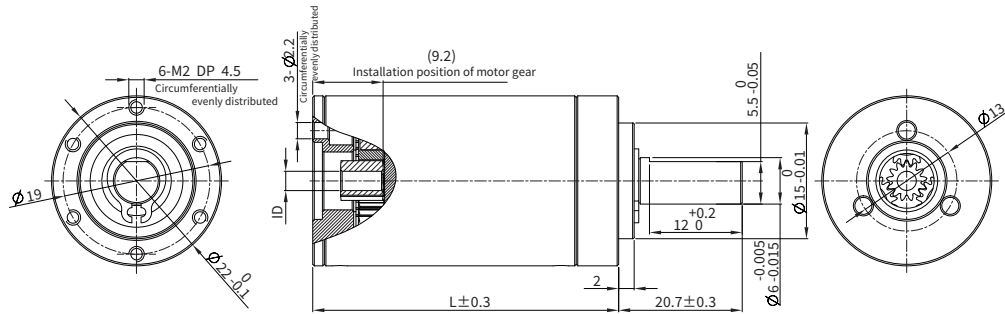
● 16PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	1.0	1.2	1.3	1.4
Max. continuous output power	W	6.5	3.2	1.6	0.6
Max. peak output power	W	8.0	4.0	2.0	0.75
Max. continuous input speed	rpm	12000	14000	14000	14000
Max. peak input speed	rpm	15000	18000	18000	18000
Max. continuous torque	N·m	0.2	0.25	0.35	0.45
Max. peak torque	N·m	0.25	0.35	0.45	0.55
Max. efficiency	%	90	80	75	65
Weight	g	25	31	37	42
Gearbox length L	mm	18.7	25.5	30.2	42

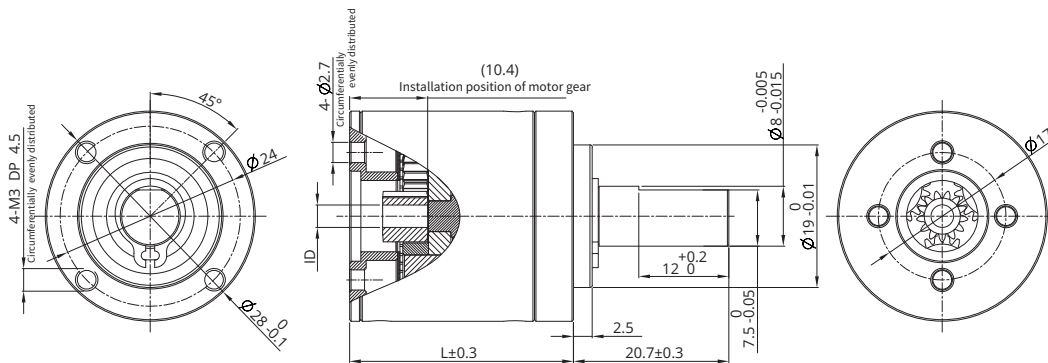
Precision Planetary Gearbox

● 22PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.85	1.05	1.2	1.35
Max. continuous output power	W	24	12	6.0	1.6
Max. peak output power	W	30	15	7.5	2.0
Max. continuous input speed	rpm	8000	10000	10000	10000
Max. peak input speed	rpm	10000	12500	12500	12500
Max. continuous torque	N·m	0.5	0.7	1.2	1.5
Max. peak torque	N·m	0.6	0.9	1.5	1.9
Max. efficiency	%	90	81	74	66
Weight	g	59	83	97	112
Gearbox length L	mm	22.3	33	39.6	46.3

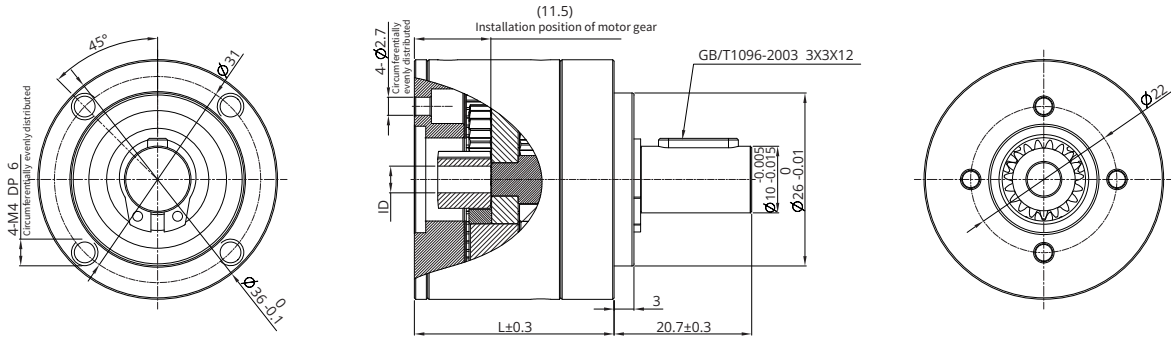
● 28PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.5	0.6	0.7	0.75
Max. continuous output power	W	100	50	25	8.0
Max. peak output power	W	125	62	31	10
Max. continuous input speed	rpm	6000	7000	7000	7000
Max. peak input speed	rpm	7500	8750	8750	8750
Max. continuous torque	N·m	1.25	2.9	5.0	5.0
Max. peak torque	N·m	1.6	3.6	6.3	6.3
Max. efficiency	%	90	81	72	65
Weight	g	103	150	174	198
Gearbox length L	mm	24.2	36.9	43.5	50.2

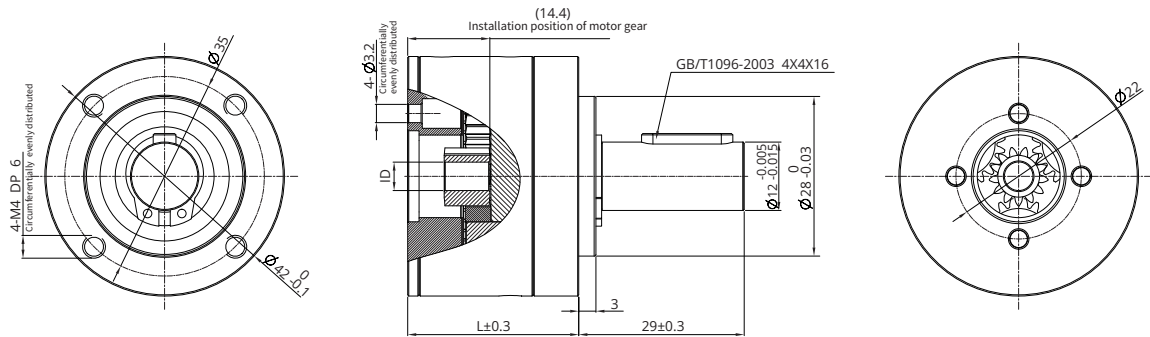
Precision Planetary Gearbox

● 36PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.5	0.6	0.7	0.8
Max. continuous output power	W	185	90	45	15
Max. peak output power	W	230	115	60	19
Max. continuous input speed	rpm	6000	6000	6000	6000
Max. peak input speed	rpm	7500	7500	7500	7500
Max. continuous torque	N·m	2.3	5.4	9.3	9.3
Max. peak torque	N·m	2.9	6.8	11.6	11.6
Max. efficiency	%	90	80	72	65
Weight	g	156	238	277	315
Gearbox length L	mm	30	44.7	51.3	58

● 42PGX

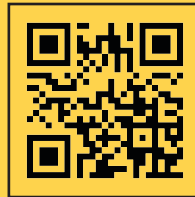


Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Gear ratio	X : 1	3.9, 5.3	16, 21, 28	62, 83, 111, 150	243, 326, 439, 590, 794
Max. backlash	°	0.3	0.4	0.5	0.6
Max. continuous output power	W	480	200	85	20
Max. peak output power	W	600	250	106	25
Max. continuous input speed	rpm	6000	6000	6000	6000
Max. peak input speed	rpm	7500	7500	7500	7500
Max. continuous torque	N·m	3.0	7.5	15	15
Max. peak torque	N·m	4.5	11.3	22.5	22.5
Max. efficiency	%	90	81	72	64
Weight	g	252	405	476	544
Gearbox length L	mm	36.1	54.9	63.6	72.4



HEADQUARTER, CHINA

ENG Web



Partners Web



YouTube



Jiangsu DINGS' Intelligent Control Technology Co., Ltd.

No. 2850 Luheng Road, Changzhou Economic Development Zone, Jiangsu Province, China

Tel : +86-519-85177826

Fax : +86-519-85177807

E-mail : info@dingsmotion.com

www.dingsmotion.com

Shenzhen Office

Room 1105, Block C, CIMC industry demonstration park, Qiaoming Road, Guangming district, Shenzhen City

E-mail : info@dingsmotion.com

INTERNATIONAL OFFICE

DINGS' Motion USA

355 Cochrane Circle Morgan Hill,
CA 95037

+1-408-612-4970

sales@dingsmotionusa.com

www.dingsmotionusa.com

DINGS' Motion Europe

4 Avenue du Grand Trémoutier
44120 - Vertou - France

+33-(0)6-41-37-80-07

sebastien@dingsmotion.com

<http://fr.dingsmotion.com>

DINGS' Korea Co., Ltd.

C-702, 158, Haneulmaeul-ro, Isandong-gu,
Goyang-si, Gyeonggi-do, Republic of Korea

+82-31-994-0755

daniel@dingsmotion.com

www.dingsmotion.kr
www.dkps.co.kr / en.dkps.co.kr

DINGS' JAPAN

101, 2-27-18, Nishi-kojiya, Ota-ku,
Tokyo 144-0034 JAPAN

+81-3-6811-1335

tsukahara@dingsmotion.com

<http://jp.dingsmotion.com>

This catalog is the sole property of DINGS' and without the written authorization of DINGS', any copy or forwarding is prohibited
DINGS' reserves the right to make changes without further notification to any products herein to improve the reliability, function or design
DINGS' reserves the final interpretation