

DINGS
Precision Motion Specialist

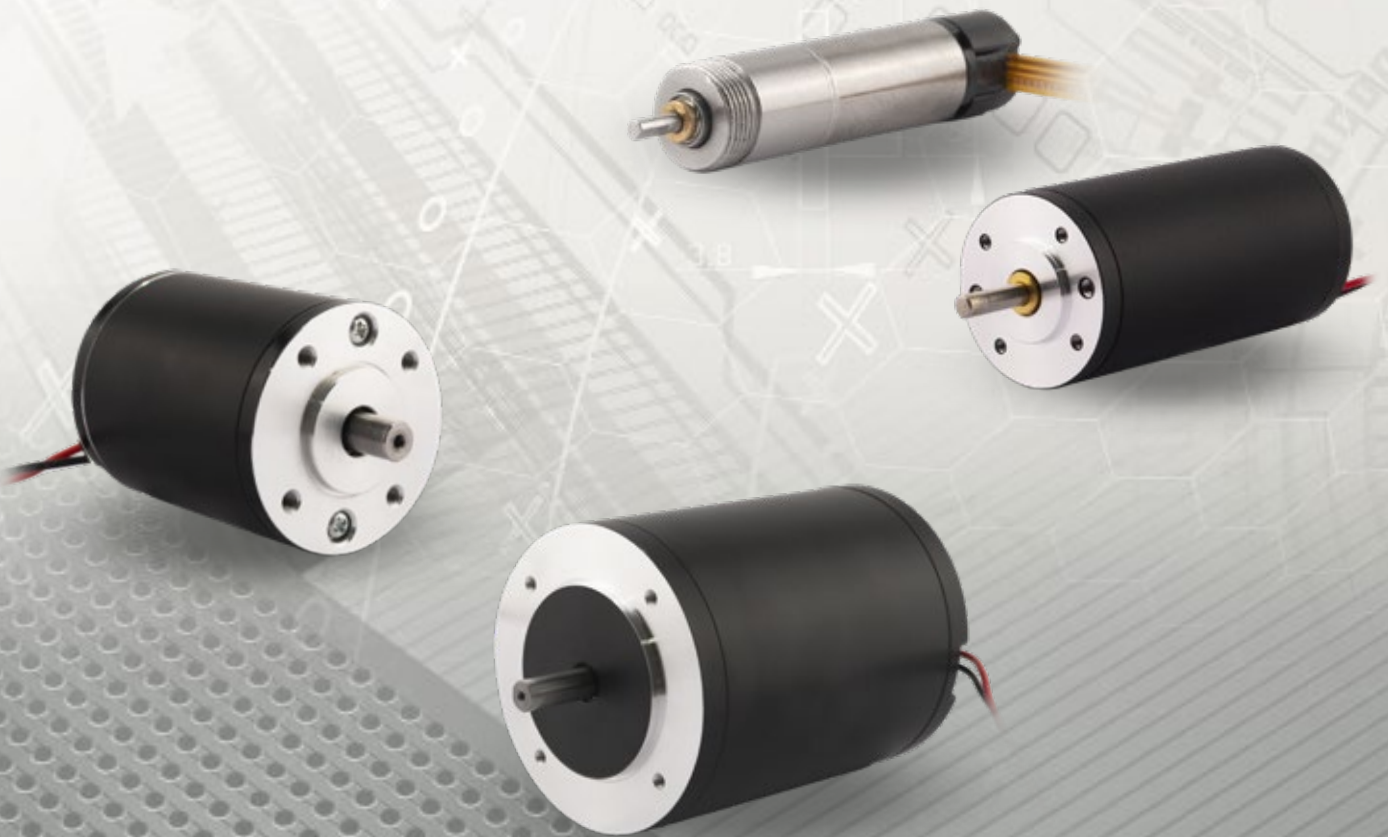
UK & Ireland Official Distributor



BRUSHED DC MOTORS

JST 06KR-4H-P

CATALOGUE



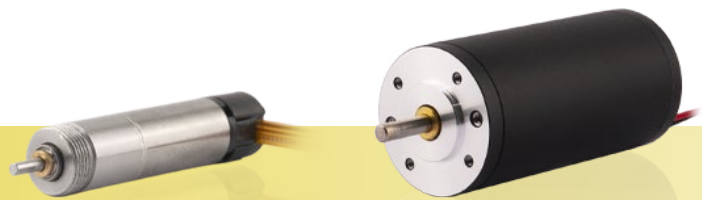
DINGS' Brush DC Motors have low mechanical loss, high power conversion efficiency but relatively save energy.

The speed of Brush DC motor can quickly respond to change of voltage and meet the requirements of high speed and high precision control.

Brush DC Motor's torque is proportional to the current, it has very good starting performance.

DINGS' Brush DC Motors can be designed by Ferrite, Aluminium, Nickel Cobalt, Rare Earth magnet or Permanent Magnet. Also DINGS' can adopt two different brush as Graphite or Metal Graphite.

In addition, DINGS' can customize Brush DC Motors in various ways with gearbox, encoder or DINGS' also can design Brush DC linear actuators for wide applications.



BRUSH DC MOTOR

CONTENTS

Brush DC motor outline

Part number construction

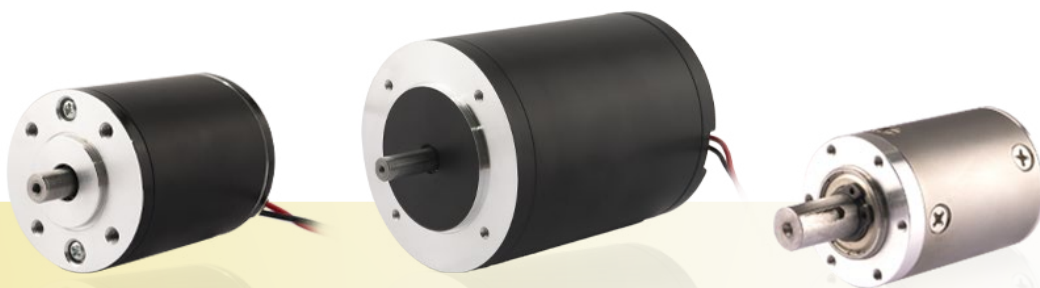
8 mm

42 mm

50 mm

80 mm

Precision planetary gearbox option



Brush DC Motor

8mm Series



8mm Brush DC motor

- 12 VDC
- 256PPR Magnetic encoder option
- 4:1 / 16:1 Planetary gearbox
- Max. 350RPM Rated speed
- Max. 720RPM No load speed
- 6.5mN·m Rated torque
- 0.33W Rated power
- 0.08A Rated current

42mm Series



42mm Brush DC motor

- 24 VDC
- Encoder option available
- Planetary gearbox option available
- Max. 3300RPM Rated speed
- Max. 4000RPM No load speed
- 57mN·m Rated torque
- 19.7W Rated power
- 1.35A Rated current

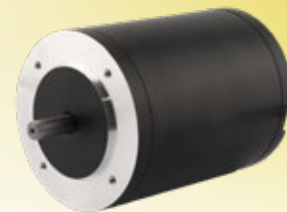
50mm Series



50mm Brush DC motor

- 24 VDC
- Encoder option available
- Planetary gearbox option available
- Max. 1700RPM Rated speed
- Max. 2302RPM No load speed
- 22mN·m Rated torque
- 4.05W Rated power
- 0.436A Rated current

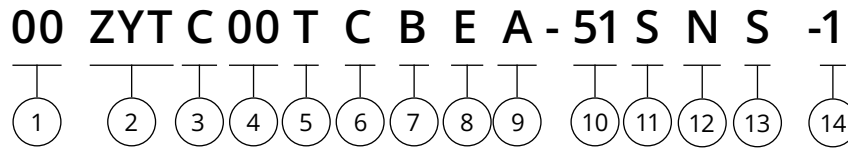
80mm Series



80mm Brush DC motor

- 24 VDC
- Encoder option available
- Planetary gearbox option available
- Max. 2560RPM Rated speed
- Max. 3035RPM No load speed
- 0.25N·m Rated torque
- 69W Rated power
- 3.9A Rated current

Part Number Construction



① Motor Size

Motor Size(mm)	8	42	50	80
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② Product Name

- ZYT = Slotted Brushed DC Motor (Ferrite)
- ZY = Slotted Brushed DC Motor (Aluminum nickel cobalt)
- ZYN = Slotted Brushed DC Motor (Rare earth)
- LY = Permanent magnet DC torque motor
- ZYC = Slotless Brush 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 = Inorganic Shell

⑥ Brush Type

- C = Graphite brush
- P = Metal graphite brush

⑦ 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"

⑧ Structure

- E = External type
- N = Non-Captive type
- C = Electric Cylinder (Captive) type
- K = Kaptive type

⑨ Lead Screw Code

Please refer to lead screw code selection table

⑩ Screw Length / Stroke

- Kaptive = stroke distance
- Non-captive = total length of screw
- External = screw extension length from the mounting flange

⑪ Screw Surface Treatment

- T = Teflon coating
- S = Standard (No teflon coating)

⑫ End Machining

- M = Metric
- U = UNC
- S = Smooth
- C = Customize
- N = None

⑬ Nut Style

- S = Standard Flange Nut
- A = Anti-Backlash Nut
- C = Customized Nut

⑭ Customer Sequence Number

Example

Part Number	50ZYTC100-1
Description	Brush DC Ferrite Motor Circular type Motor length 100mm Customizaion No.1

8mm Brush DC

8ZYCC24P-G16-E256-1 is very compact size Brush DC Motor with 16:1 Planetary Gearbox and 256 lines of encoder.

Motor's rated power is 0.33W and rated speed is 350RPM.

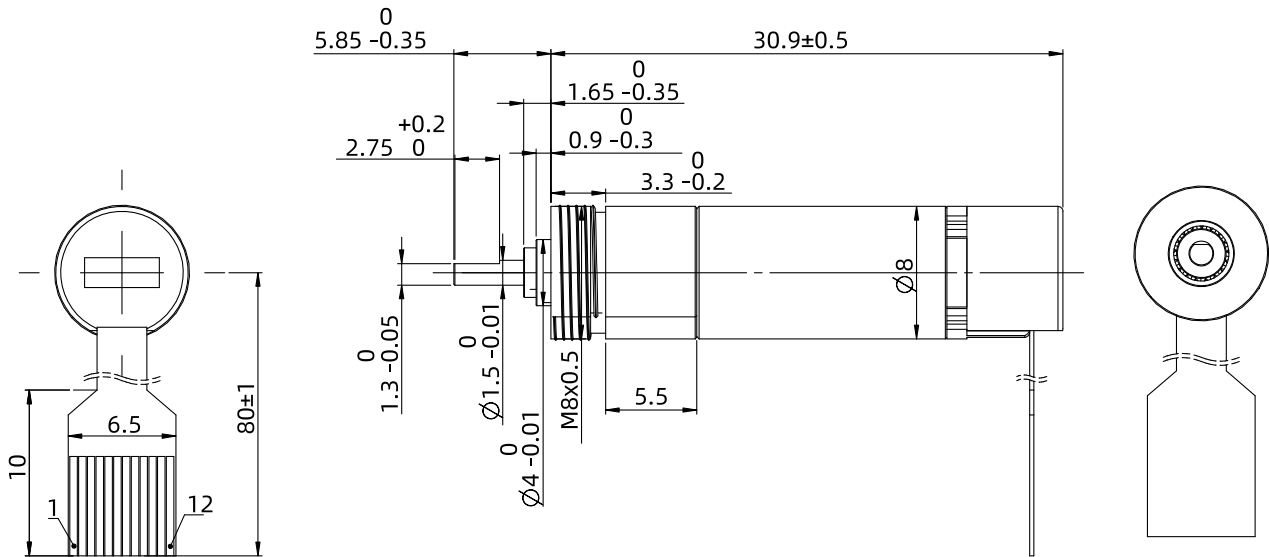
Very compact design of motor but this motor also can be customized as linear actuator.

Motor Characteristics

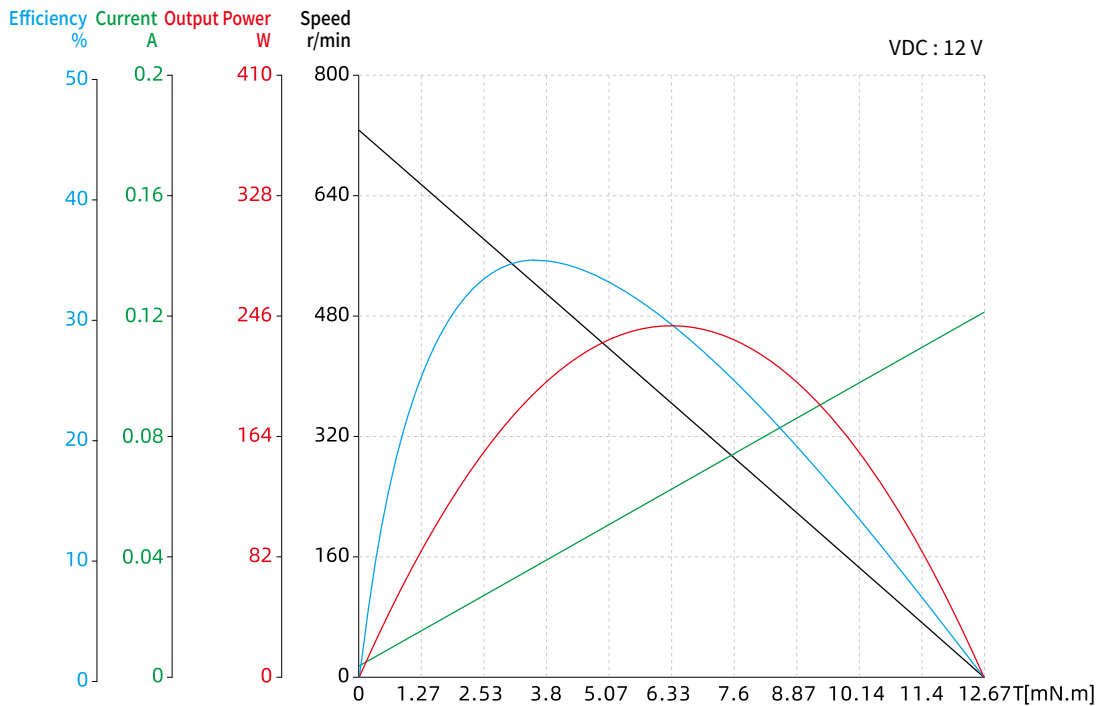
Motor part number		8ZYCC24P-G16-E256-1
Phase resistance	m Ω	101
Phase inductance	μ H	713
Insulation class	-	F/155 °C
Duty type	-	S2
Insulation strength (Withstand voltage)	-	300V AC/50Hz/2mA/1S
Insulation resistance	-	10MΩ/250V
Weight	g	8
Rated voltage	V	12
Rated power	W	0.33
Rated torque	mN·m	6.5
Rated speed	RPM	350
Rated current	A	0.08
No load speed	RPM	720
No load current	A	0.026
Motor efficiency	%	34.6
Noise (Ambient noise 20db, test distance 30cm)	dB	< 50
Case - Environmental thermal resistance (no load)	K/W	0.91
Ambient temperature	°C	19
Maximum winding temperature (no load)	°C	23
Torque constant	mNm/A	8.02
Back-EMF constant	V/Krpm	0.84
Peak torque	m N·m	0.833
Peak current	A	0.107
Inertia moment	g.mm ²	2.56
Mechanical time constant	ms	24
End bell	-	PPS+30%GF
Bearing	-	Deep groove
Magnet	-	SinterNdFeB
Shaft	-	30Cr13

8mm Brush DC

Dimensional Drawings



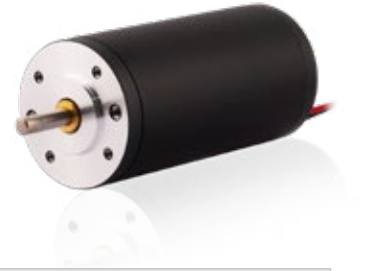
Torque Performance Curves



42mm Brush DC

42ZYTC85-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 3,300RPM.

It can generate 57mN.m of rated torque and customized with gearbox and also designed as various linear actuators.

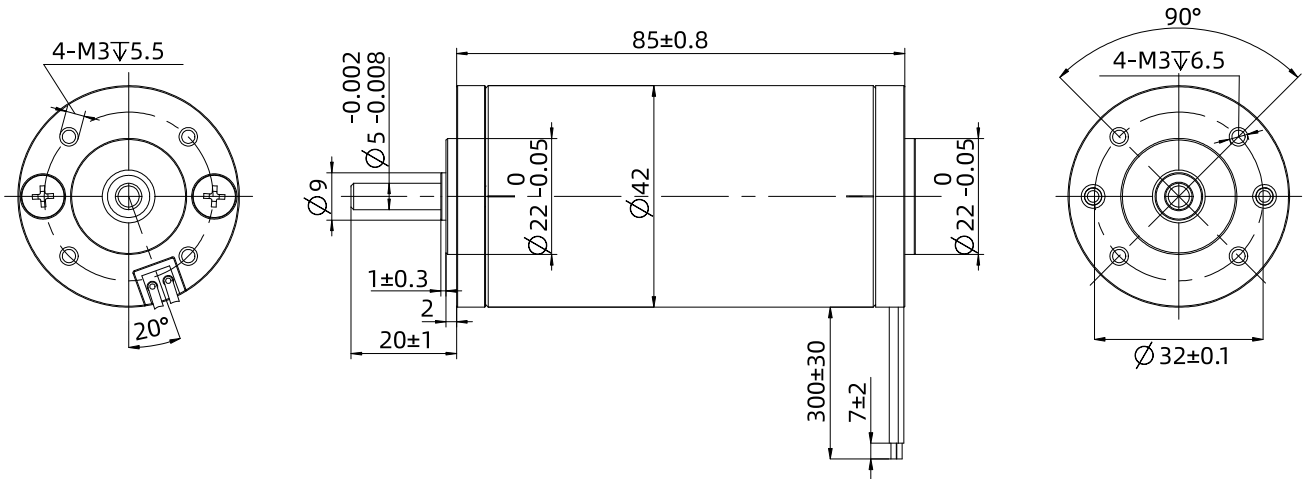


Motor Characteristics

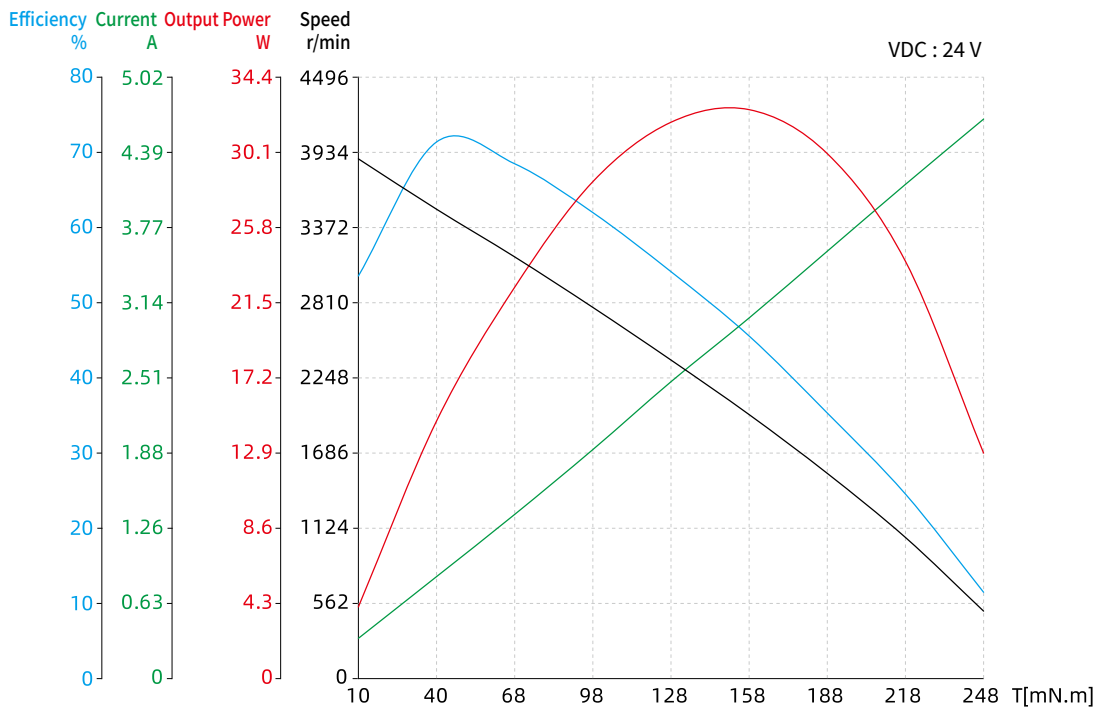
Motor part number		42ZYTC85-1
Phase resistance	Ω	1.3
Phase inductance	m H	2.4
Rated power	W	19.7
Rated voltage	V	24
Rated torque	mN·m	57
Rated speed	RPM	3300
Rated current	A	1.35
No load speed	RPM	4000
No load current	A	0.25
Peak torque	mN·m	329.3
Peak current	A	5.93
Motor efficiency	%	70
Torque constant	mNm/A	57.30
Back-EMF constant	V/Krpm	6.00
Inertia moment	g.cm ²	107
Weight	Kg	0.426

42mm Brush DC

Dimensional Drawings



Torque Performance Curves



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

50mm Brush DC

50ZYTC60-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 1,700RPM.

It can generate 22mN.m of rated torque and customized with gearbox and also designed as various linear actuators.

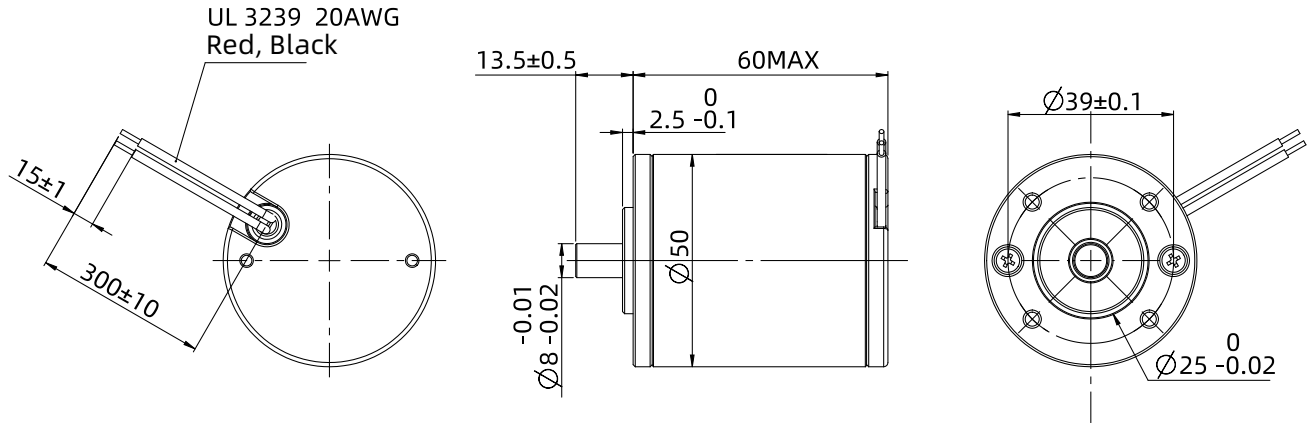


Motor Characteristics

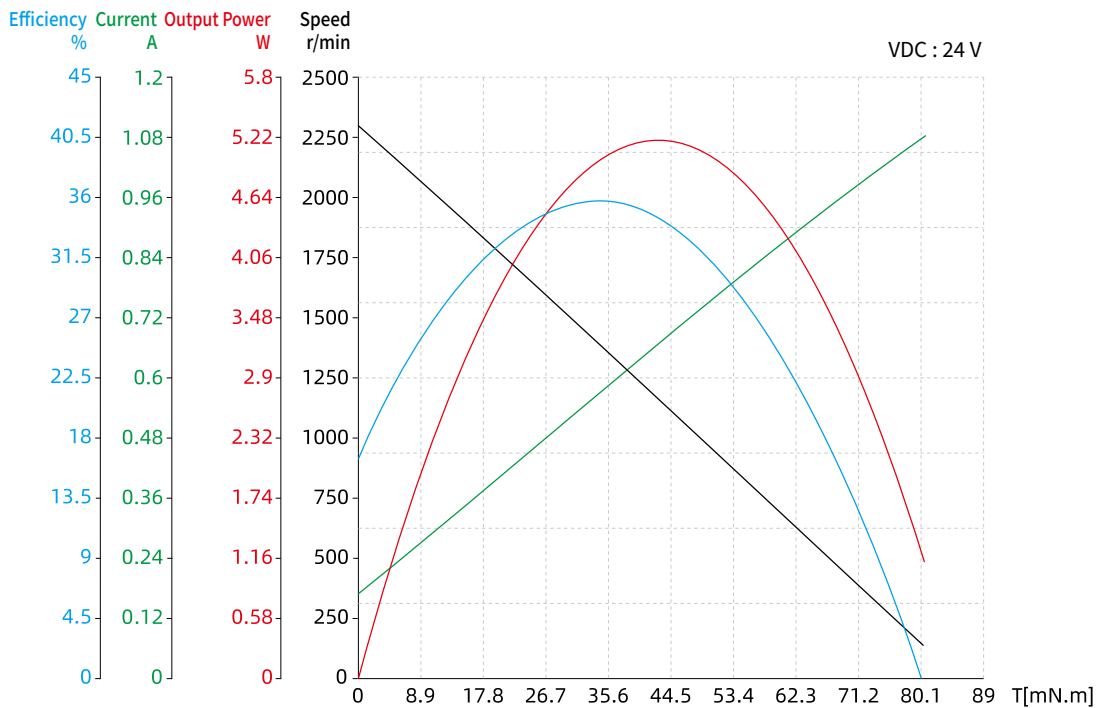
Motor part number		50ZYTC60-1
Phase resistance	Ω	22.87
Phase inductance	m H	10.4
Rated power	W	4.05
Rated voltage	V	24
Rated torque	mN·m	22
Rated speed	RPM	1700
Rated current	A	0.436
No load speed	RPM	2302
No load current	A	0.17
Peak torque	mN·m	99
Peak current	A	1.18
Motor efficiency	%	40
Torque constant	mNm/A	84.89
Back-EMF constant	V/Krpm	8.90
Inertia moment	g.cm ²	124
Weight	Kg	0.38

50mm Brush DC

Dimensional Drawings



Torque Performance Curves



80mm Brush DC

80ZYTC102-1 Brush DC Motor has 24V Rated voltage of DC Motor and it can run at Max. 2,560RPM.

It can generate 0.25N.m of rated torque and customized with gearbox and also designed as various linear actuators.

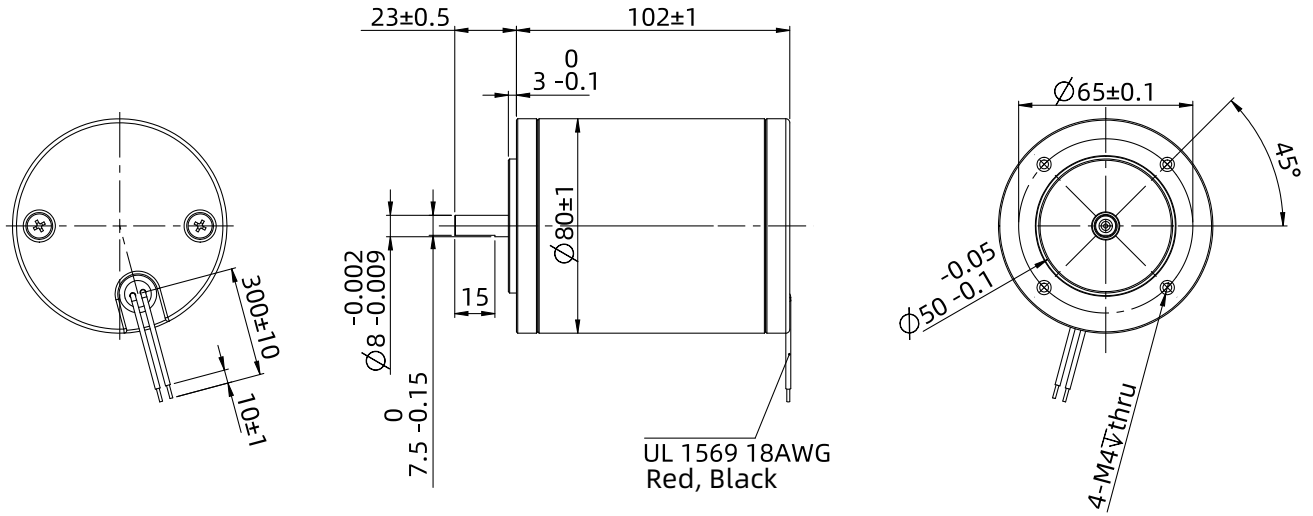


Motor Characteristics

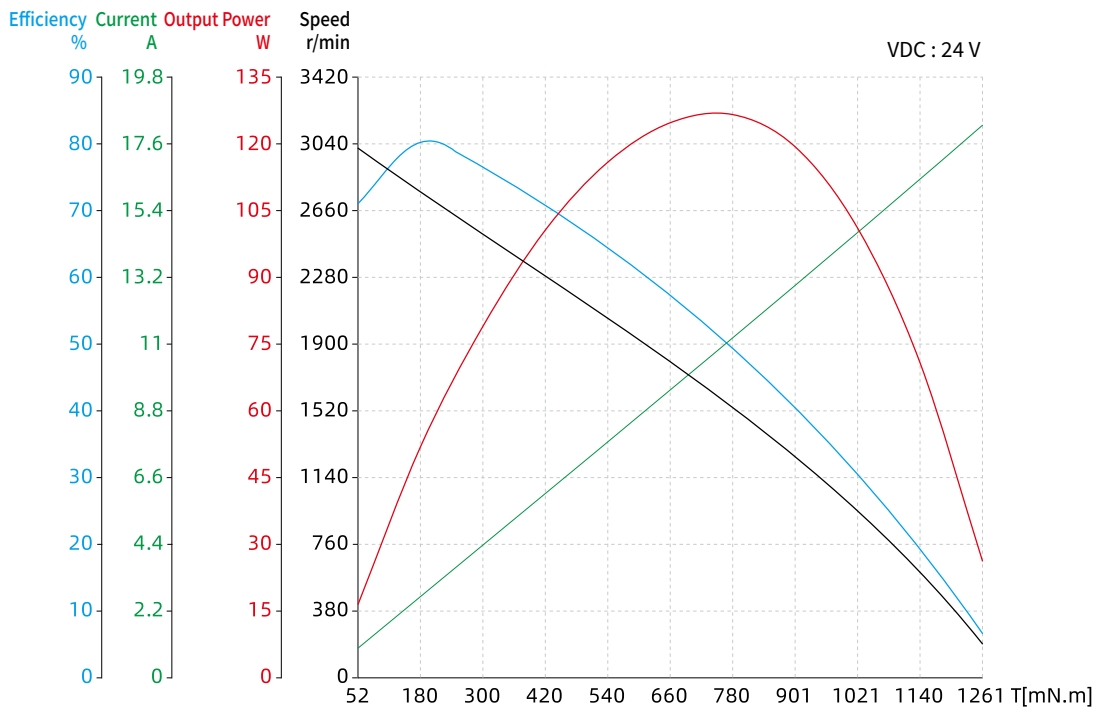
Motor part number		80ZYTC102-1
Phase resistance	Ω	1.3
Phase inductance	m H	1.577
Rated power	W	69
Rated voltage	V	24
Rated torque	N·m	0.25
Rated speed	RPM	2560
Rated current	A	3.9
No load speed	RPM	3035
No load current	A	0.92
Peak torque	N·m	1.44
Peak current	A	19.96
Motor efficiency	%	75
Torque constant	mNm/A	74.20
Back-EMF constant	V/Krpm	7.77
Inertia moment	g.cm ²	1558
Weight	Kg	1.67

80mm Brush DC

Dimensional Drawings



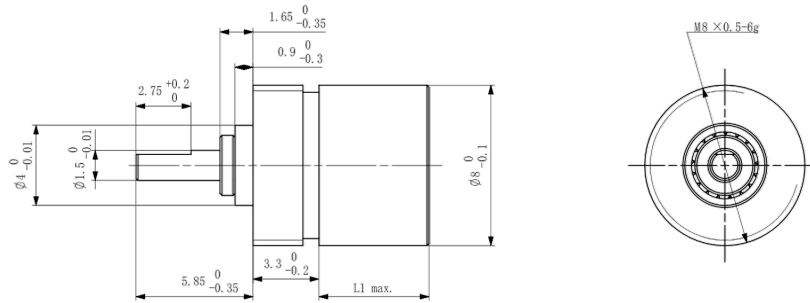
Torque Performance Curves



Precision Planetary Gearbox Option

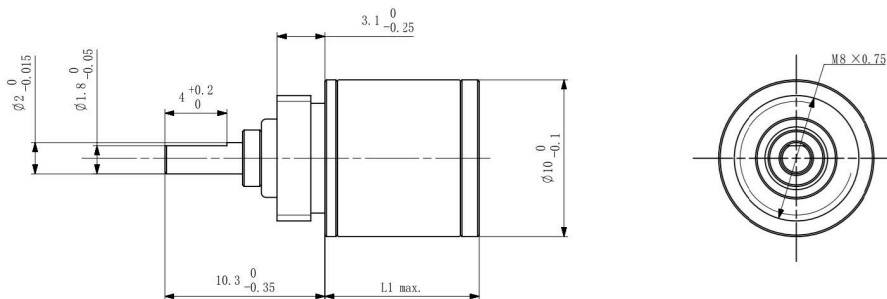
■ Precision Planetary Gearbox

● 8PGX



Stage	-	Stage 1	Stage 2
Reduction ratio	X : 1	4	16
Max. continuous torque	N·m	0.01	0.02
Max. continuous output power	W	0.84	0.52
Max. continuous speed transfer	rpm	12000	12000
Max. axial load (Dynamic)	N	5	5
Max. radial load (5mm from flange)	N	5	6
Max. efficiency	%	90	81
Max. backlash	°	1.8	2.0
Gearbox length L	mm	5.5	8.1
Weight	g	2.6	3.2

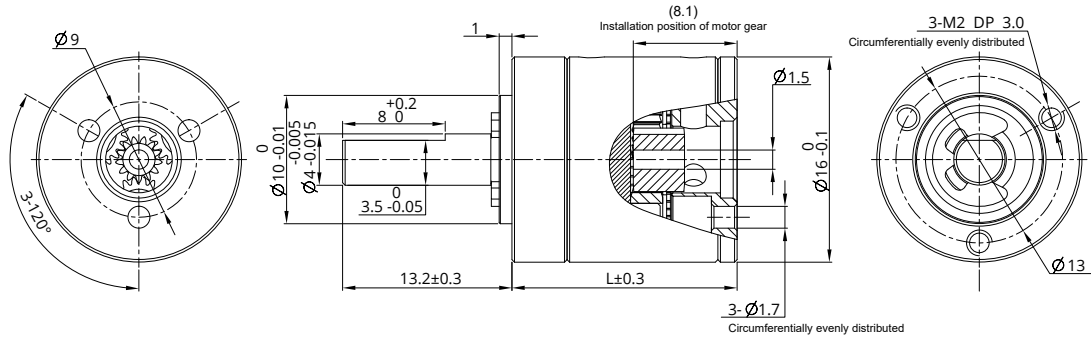
● 10PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Reduction ratio	X : 1	4.25	18	76.8	326
Max. continuous torque	N·m	0.01	0.03	0.10	0.15
Max. continuous output power	W	1.6	1.2	1.0	0.4
Max. continuous speed transfer	rpm	12000	12000	12000	12000
Max. axial load (Dynamic)	N	5	5	5	5
Max. radial load (5mm from flange)	N	5	10	15	20
Max. efficiency	%	90	81	73	65
Max. backlash	°	1.5	1.8	2.0	2.2
Gearbox length L	mm	10.1	13.6	17.1	20.6
Weight	g	6.7	7.2	7.7	8.2

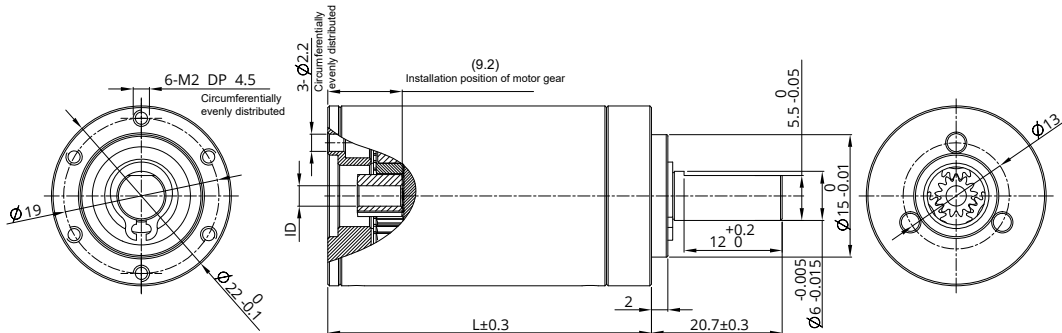
Precision Planetary Gearbox Option

● 16PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Reduction ratio	X : 1	3.9, 5.3, 6.6	16, 21, 26, 28, 35, 44	62, 83, 103, 111, 138, 150, 172, 186, 231	243, 326, 406, 439, 546, 590, 679, 734, 794, 913, 987, 1135, 1227, 1526
Max. continuous torque	N·m	0.2	0.25	0.35	0.45
Max. continuous output power	W	6.5	3.2	1.6	0.6
Max. continuous speed transfer	rpm	12000	14000	16000	16000
Max. axial load (Dynamic)	N	20	20	20	20
Max. radial load (5mm from flange)	N	30	45	70	70
Max. efficiency	%	90	80	75	65
Max. backlash	°	1.0	1.2	1.3	1.4
Gearbox length L	mm	18.7	25.5	30.2	35
Weight	g	25	31	37	42

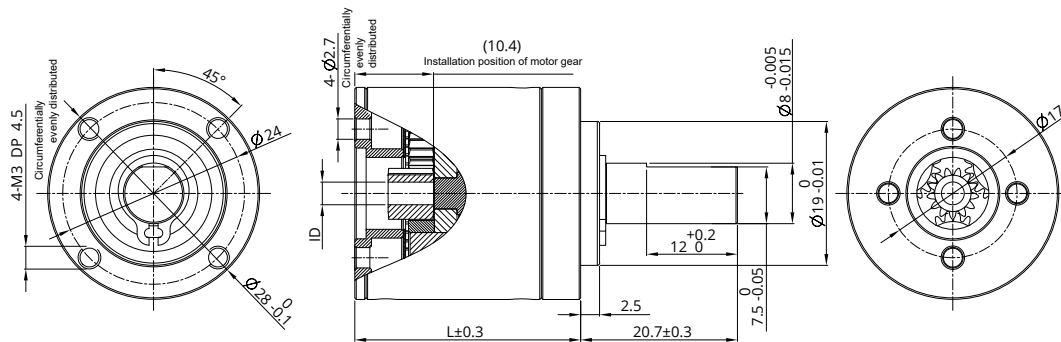
● 22PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Reduction ratio	X : 1	3.9, 5.3, 6.6	16, 21, 26, 28, 35, 44	62, 83, 103, 111, 138, 150, 172, 186, 231	243, 326, 406, 439, 546, 590, 679, 734, 794, 913, 987, 1135, 1227, 1526
Max. continuous torque	N·m	0.50	0.70	1.20	1.50
Max. continuous output power	W	24	12	6.0	1.6
Max. continuous speed transfer	rpm	8000	10000	12000	12000
Max. axial load (Dynamic)	N	40	40	40	40
Max. radial load (5mm from flange)	N	65	100	120	120
Max. efficiency	%	90	81	74	66
Max. backlash	°	0.85	1.05	1.2	1.35
Gearbox length L	mm	22.3	33	39.6	46.3
Weight	g	59	83	97	112

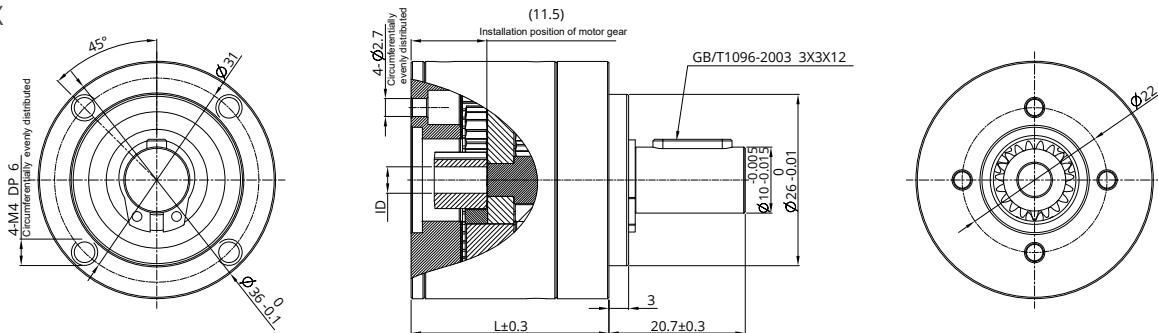
Precision Planetary Gearbox Option

● 28PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Reduction ratio	X : 1	3.9, 5.3, 6.6	16, 21 , 26, 28, 35	62, 83, 103, 111, 138 , 150, 172, 186, 231	243, 326, 406, 439, 546, 590, 679, 734, 794, 913, 987, 1135, 1227, 1526
Max. continuous torque	N·m	1.25	2.90	5.0	5.0
Max. continuous output power	W	100	50	25	22
Max. continuous speed transfer	rpm	6000	7000	8000	8000
Max. axial load (Dynamic)	N	110	110	110	110
Max. radial load (5mm from flange)	N	160	180	180	180
Max. efficiency	%	90	81	74	65
Max. backlash	°	0.55	0.7	0.9	1.0
Gearbox length L	mm	24.2	36.9	43.5	50.2
Weight	g	103	150	174	198

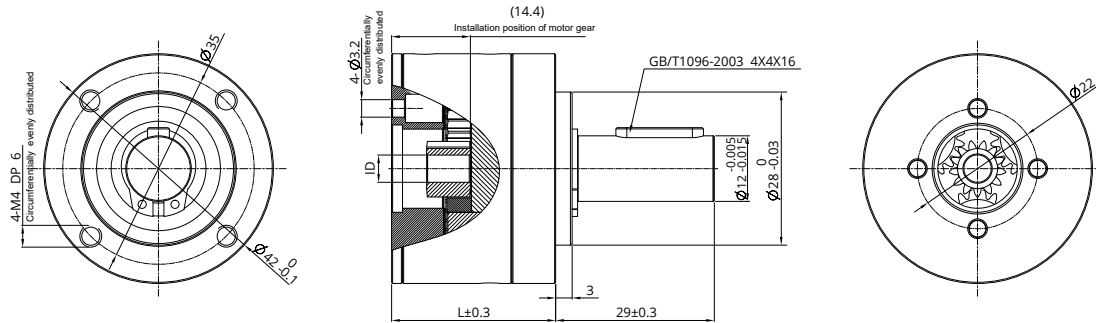
● 36PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Reduction ratio	X : 1	3.9, 5.3	16, 21 , 26, 28, 35	62, 83, 103, 111, 138 , 150, 172, 186, 231	243, 326, 406, 439, 546, 590, 679, 734, 794, 913, 987, 1135, 1227, 1526
Max. continuous torque	N·m	2.30	5.40	9.30	9.30
Max. continuous output power	W	185	90	45	40
Max. continuous speed transfer	rpm	5000	6000	7000	7000
Max. axial load (Dynamic)	N	240	240	240	240
Max. radial load (5mm from flange)	N	200	250	250	250
Max. efficiency	%	90	80	75	65
Max. backlash	°	0.5	0.6	0.7	0.8
Gearbox length L	mm	30	44.7	51.3	58
Weight	g	156	238	277	315

Precision Planetary Gearbox Option

● 42PGX



Stage	-	Stage 1	Stage 2	Stage 3	Stage 4
Reduction ratio	X : 1	3.9, 5.3	16, 21 , 26, 28, 35	62, 83, 103, 111, 138 , 150, 172, 186, 231	243, 326, 406, 439, 546, 590, 679, 734 , 794, 913, 987, 1135, 1227, 1526
Max. continuous torque	N·m	3.0	7.5	15	15
Max. continuous output power	W	580	240	100	20
Max. continuous speed transfer	rpm	6000	6000	6000	6000
Max. axial load (Dynamic)	N	200	200	200	200
Max. radial load (5mm from flange)	N	350	525	750	750
Max. efficiency	%	90	81	72	64
Max. backlash	°	0.3	0.4	0.5	0.6
Gearbox length L	mm	36.1	54.9	63.6	72.4
Weight	g	252	405	476	544

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Precision Motion Specialist

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