



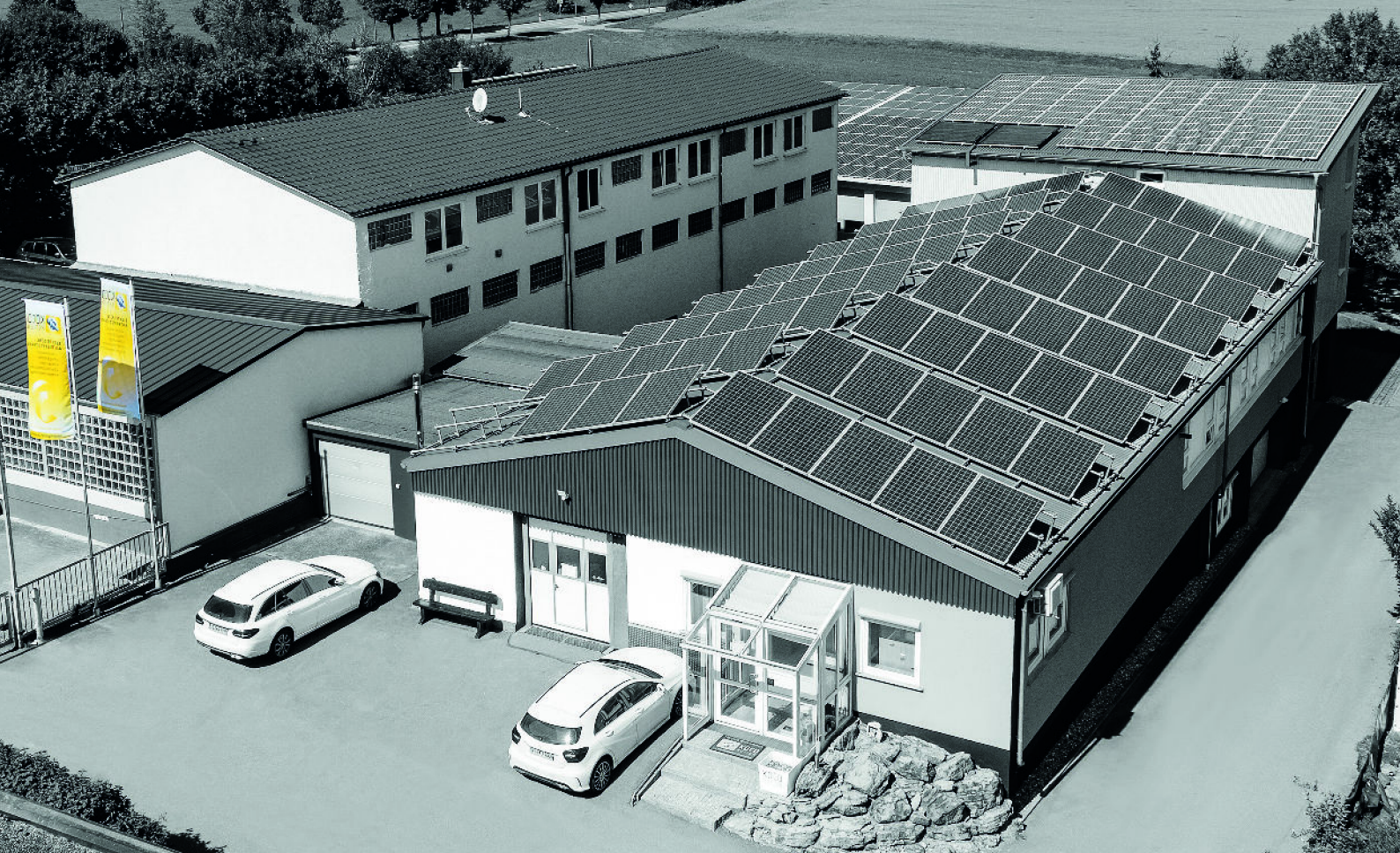
MOTION. POWER. DYNAMIC.

Gear, Servo and Sonic Motors

Gear, Servo and Sonic Motors

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HIGH CUSTOMER SATISFACTION IS OUR MOTIVATION

From tailor-made drive solutions in small series to complex projects with large quantities - our KOCO MOTION team is ready to provide our customers with advice and support.

We collaborate with our customers to coordinate requirements and specifications and ensure compliance with those through close inspections. On-time delivery and tested quality are always our claim and are also proven by certifications according to DIN EN ISO 9001 and DIN EN ISO 14001.

PERSONAL. ENVIRONMENTALLY FRIENDLY. AND WITH DRIVE.

Our employees are our greatest asset. Their motivation is not only based on good relationships with each other and with KOCO MOTION, but also lies in the opportunity to fully contribute their skills and achieve our company goals in an individual way.

We see ourselves as part of the environment and therefore treat the scarce natural resources we are given carefully. We actively look for ways to keep and improve our actions and behavior in an environmentally friendly manner.

We are KOCO MOTION

...Intelligence in motion

We are only satisfied when the optimal solution has been found for our customers.

As a system house, we always offer our customers the best drive solution and can rely on a global network of motor and control technologies. We implement our customers' projects in a highly professional and extremely flexible manner in partnership with our customers. Our aim is always to achieve the highest quality within the agreed budget.

We draw on years of experience in the development and production of electric motors and respond individually to the wishes and ideas of our customers in project consulting. For us, the focus is on the personal relationship with customers, employees and suppliers. We understand our customers' needs exactly, achieve a high level of customer satisfaction and are THE partner for our customers when it comes to drives.

6 mm Micro DC Gear Motor

06**...06*P...

The 06**...06*P... series 6 mm Micro DC Gear Motors

deliver a robust motion control solution in an ultra-compact form factor. Engineered with high-precision and reliability in mind, these motors feature:



- **Flexible Gearbox Configurations:** Available with 1 to 6 gearbox stages, enabling reduction ratios from 23:1 up to 1708:1 to suit a wide range of speed and torque requirements.
- **High Torque Density:** Achieves up to 33 mNm rated torque and up to 50 mNm momentary peak, supporting precise actuation in space-constrained environments.
- **Durable Construction:** Metal shell and metal injection molded gears ensure long life and excellent wear resistance for continuous or intermittent duty cycles.
- **Customization Options:** Selectable lead wire and shaft lengths, as well as special coil variants for application-specific performance tuning.

Designed primarily for **medical equipment**, **scientific instrumentation**, and **industrial automation**, these micro gear motors are ideal where miniature size, stable output, and consistent performance are essential. Their flexibility and rugged build make them a preferred choice for engineers facing tight integration and demanding duty cycles in advanced devices.



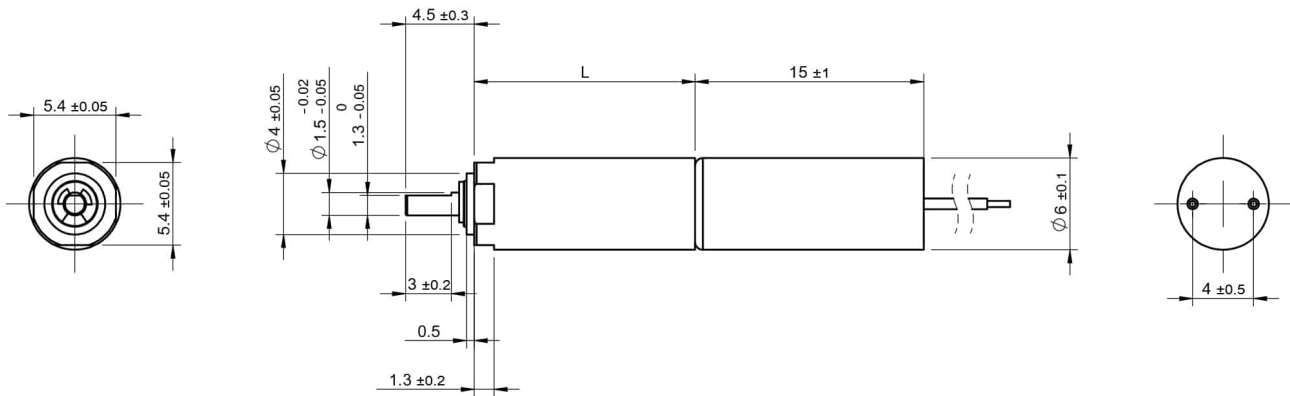
<https://www.kocomotion.de/produkt/06-06p/>

Motor Characteristics	Unit	0615N5M01-122-3.0	0615N5M02-185-3.0	0615N5M03-295-6.0
Rated voltage	V	3.0	3.0	6.0
Max. output power	W	0.11	0.09	0.83
Max. efficiency	%	56	44	67
Back-EMF constant	mV/rpm	0.2	0.1	0.2
Torque constant	mNm/A	2.2	1.4	1.9
Speed/torque gradient	rpm/mNm	37000	94600	27600
Rotor inertia	gcm ²	0.015	0.015	0.015
Weight	g	2.5	2.5	2.5
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	6 +/- 0.1	6 +/- 0.1	6 +/- 0.1
Terminal resistance	Ω	19	18.5	10.1
Motor length	mm	15 +/- 1	15 +/- 1	15 +/- 1
No-load speed	rpm	12200	18500	29500
No-load current	mA	10	18	20
Stall torque	mNm	0.33	0.2	1.07
Stall current	mA	160	160	590
Load torque	mNm	0.1	0.05	0.3
Load speed	rpm	8500	13770	21230
Load current	mA	60	50	180

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	--	23~41	110~266	531~1708	--	--
Max. rated torque	mNm	--	33	33	33	--	--
Max. momentary torque	mNm	--	50	50	50	--	--
Length L	mm	--	12.1	14.5	16.9	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal injection	-	-	-	-	-

Drawings



8mm Planetary Gear Motors

08**...08*P...

KOCO 08...08*P... Series 8mm Small Gear Motors** are engineered for demanding precision applications where space constraints and reliable torque delivery are critical. This planetary gearbox series is available in configurations with 1 to 6 stages, supporting reduction ratios from 13:1 up to 809:1 and output torque ratings up to 30 mNm (max. 90 mNm momentary).



- **Compact and Robust:** 8mm diameter planetary gearbox with metal shell for durability; length varies by stage (11.3 mm to 16.9 mm typical).
- **Versatile Performance:** 2-stage variants deliver 10 mNm rated torque, while the 4-stage configuration achieves up to 30 mNm rated and 90 mNm momentary torque, suitable for high-load micro applications.
- **Advanced Gear Technology:** Precision plastic injection-molded gears ensure smooth, quiet operation and extended service life in sensitive environments.
- **Application Versatility:** Optimized for medical equipment, scientific instruments, and compact industrial devices where reliability and footprint are decisive factors.
- **Customizable Options:** Lead wire length, shaft length, and special coil options are available to meet unique integration requirements.

KOCO's 8mm planetary gear motors are the preferred choice for engineers requiring miniature, high-torque solutions in precision-driven applications.



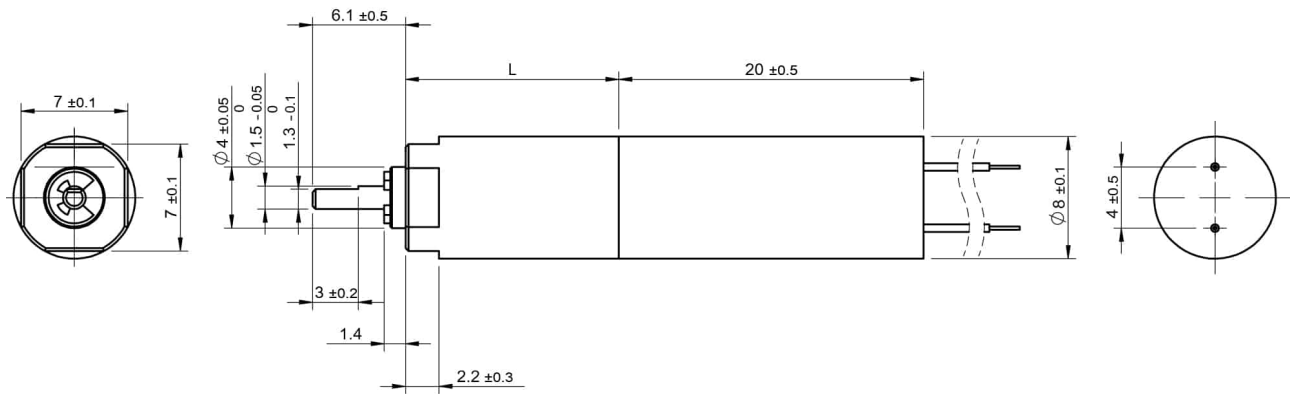
<https://www.kocomotion.de/produkt/08-08p/>

Motor Characteristics	Unit	0816N5M02-137-4.2	0816N5M11-148-6.0	0816N5M01-155-8.0
Rated voltage	V	4.2	6.0	8.0
Max. output power	W	0.3	0.34	0.24
Max. efficiency	%	61	69	62
Back-EMF constant	mV/rpm	0.3	0.4	0.5
Torque constant	mNm/A	2.8	3.8	4.7
Speed/torque gradient	rpm/mNm	16700	16900	26600
Rotor inertia	gcm ²	0.04	0.04	0.04
Weight	g	3.6	3.6	3.6
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	8 +/- 0.1	8 +/- 0.1	8 +/- 0.1
Motor length	mm	20 +/- 0.5	20 +/- 0.5	20 +/- 0.5
Terminal resistance	Ω	13.5	25.3	60
No-load speed	rpm	13700	14800	15500
No-load current	mA	15	7	6
Stall torque	mNm	0.82	0.88	0.58
Stall current	mA	310	240	130
Load torque	mNm	0.25	0.3	0.15
Load speed	rpm	9530	9730	11520
Load current	mA	100	90	40

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio		--	13~28	47~152	168~809	--	--
Max. rated torque	mNm	--	10	20	30	--	--
Max. momentary torque	mNm	--	30	60	90	--	--
Length L	mm	--	11.3	14	16.9	--	--
Shell material		Metal	-	-	-	-	-
Gear processing technology		Plastic injection	-	-	-	-	-

Drawings



13mm Precision Planetary Gearbox

13**...13*P...

13mm Planetary Gearbox Series provides advanced motion control for miniature electromechanical applications where space, durability, and accuracy are critical. Designed with a metal shell and CNC-processed metal gears, this gearbox series delivers robust performance and extended service life in demanding environments.



• Technical Specifications:

- Diameter: 13mm, available in up to 6 reduction stages
- Reduction ratios range: 4:1 (1-stage) to 4096:1 (6-stage)
- Max. rated torque: 80-200 mNm
- Max. momentary torque: 240-600 mNm
- Lengths from 10.3 mm (1-stage) to 26.8 mm (6-stage)
- Metal housing ensures robust structural integrity
- Precision gears manufactured with advanced CNC technology

• Key Applications:

- Medical equipment requiring compact high-torque drives
- Scientific instrumentation for precision motion control
- Industrial automation and specialized robotics systems

• Configurable Options:

- Custom lead wire lengths
- Variable shaft lengths
- Special coil configurations for tailored performance

This series is engineered to deliver stable power transmission and high efficiency in size-constrained applications, making it an ideal solution for OEM designers and system integrators seeking reliable miniature gearbox systems.



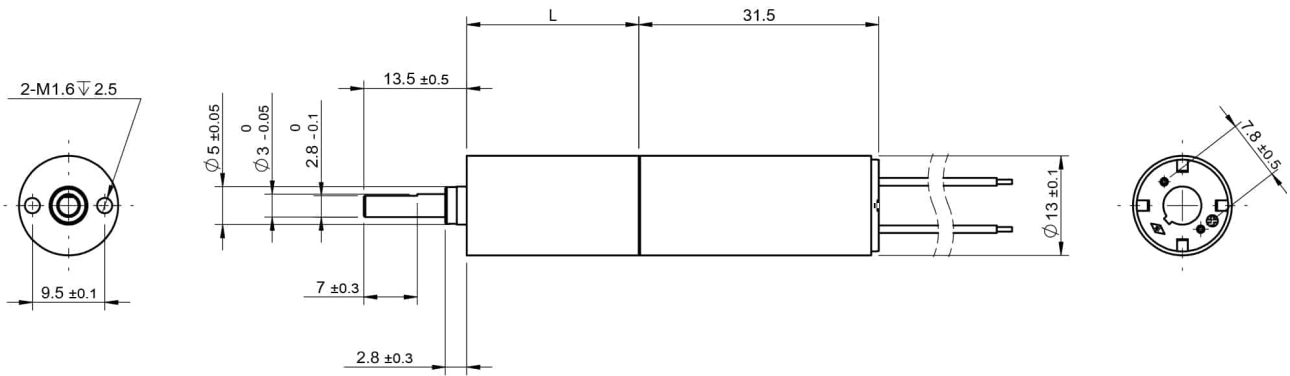
<https://www.kocomotion.de/produkt/13-13p/>

Motor Characteristics	Unit	1331N5M09-87-12.0	1331N7M02-110-6.0	1331N7M01-96-24.0
Rated voltage	V	12.0	6.0	24.0
Max. output power	W	2.22	3.39	3.69
Max. efficiency	%	78	80	79
Back-EMF constant	mV/rpm	1.4	0.5	2.6
Torque constant	mNm/A	13	5.2	24.6
Speed/torque gradient	rpm/mNm	900	900	600
Rotor inertia	gcm ²	0.52	0.52	0.52
Weight	g	20	20	20
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	13 +/- 0.1	13 +/- 0.1	13 +/- 0.1
Motor length	mm	31.5	31.5	31.5
Terminal resistance	Ω	15.7	2.6	38
No-load speed	rpm	8700	11000	9600
No-load current	mA	10	25	8
Stall torque	mNm	9.7	11.8	15.3
Stall current	mA	760	2310	630
Load torque	mNm	2	2	4
Load speed	rpm	6920	9130	6790
Load current	mA	160	410	170

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	16	64	256	1024	4096
Max. rated torque	mNm	80	120	160	180	200	200
Max. momentary torque	mNm	240	360	480	540	600	600
Length L	mm	10.3	13.6	16.9	20.2	23.5	26.8
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



22mm Planetary Gearbox Series

22**...22*P...

22mm Planetary Gearbox Series offers a high-performance gearing solution for demanding precision applications. This family features a robust metal shell and powder metallurgy gear processing for consistent, long-term durability.

- **Flexible Configuration:** Available in 1 to 5 stages with reduction ratios from 5 up to 3968, accommodating a variety of speed and torque requirements.
- **High Torque Output:** Supports maximum rated torques from 100 mNm (1 stage) up to 600 mNm (5 stages), with momentary peak torques up to 1800 mNm for dynamic load handling.
- **Compact Design:** Gearbox lengths range from 23.3 mm to 48.1 mm, optimizing space usage in compact assemblies.
- **Customization Options:** Tailor to application needs with customizable lead wire lengths, shaft lengths, and special coil configurations.
- **Precision Engineering:** Metal shell and precision powder metallurgy gears enhance reliability and quiet operation.

Applications: Ideally suited for *medical equipment*, *scientific instrumentation*, and *industrial automation*, where consistent performance and compactness are critical. Typical uses include drive mechanisms in imaging devices, laboratory automation, and specialized industrial tools.

With configurable gear stages and a robust feature set, the 22mm planetary gearbox series ensures optimal motion control for your most demanding projects.



<https://www.kocomotion.de/produkt/22-22p/>

Motor Characteristics	Unit	2232N5M2B08-63-6.0	2232N9M02-60-6.8	2232N9M01-100-24.0
Rated voltage	V	6.0	6.8	24.0
Max. output power	W	3	3.8	8.3
Max. efficiency	%	81	84	86
Back-EMF constant	mV/rpm	0.9	1.1	2.4
Torque constant	mNm/A	9	10.8	22.8
Speed/torque gradient	rpm/mNm	300	200	300
Rotor inertia	gcm ²	4.4	4.4	4.4
Weight	g	55	55	55
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	22 +/- 0.1	22 +/- 0.1	22 +/- 0.1
Motor length	mm	33.7 +/- 0.5	33.7 +/- 0.5	33.7 +/- 0.5
Terminal resistance	Ω	2.9	3	17.2
No-load speed	rpm	6300	6000	10000
No-load current	A	0.02	0.015	0.008
Stall torque	mNm	18.5	24.2	31.7
Stall current	A	2.07	2.27	1.4
Load torque	mNm	4	5	7
Load speed	rpm	4940	4760	7790
Load current	A	0.46	0.48	0.32

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	5	18-25	66-136	246-735	1079-3968	--
Max. rated torque	mNm	100	300	400	500	600	--
Max. momentary torque	mNm	300	900	1200	1500	1800	--
Length L	mm	23.3	29.5	35.7	41.9	48.1	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Powder metallurgy	-	-	-	-	-

Drawings

26mm Planetary Gearbox Series

25**...26MP...

The **25**...26MP... 26mm Planetary Gearbox Series** delivers robust performance and high precision for critical motion control applications. Designed with versatility and reliability in mind, this series is ideal for medical equipment, scientific instruments, and industrial automation, where efficient power transmission and compact integration are fundamental.



- **Technical Specifications:**

- Available in 1 to 4-stage configurations
- Reduction ratios: 3.7-5.2 (1 stage), 13-27 (2 stage), 50-140 (3 stage), 187-352 (4 stage)
- Max. rated torque: Up to 2500 mNm
- Max. momentary torque: Up to 3750 mNm
- Length range: 21.5-48.5 mm (depending on stage)
- Rugged metal shell for durability
- Powder metallurgy gear processing ensures high efficiency and longevity

- **Practical Applications:**

- Medical devices requiring compact, high-torque actuation
- Precision control in laboratory and scientific equipment
- Automated industrial systems with space and reliability constraints

- **Configurable Options:**

- Custom lead wire lengths
- Adjustable shaft lengths
- Special coil designs for tailored performance

This series stands out for its compact footprint, flexible configuration options, and reliable torque delivery—making it the preferred choice for precision engineering applications where performance and adaptability are paramount.



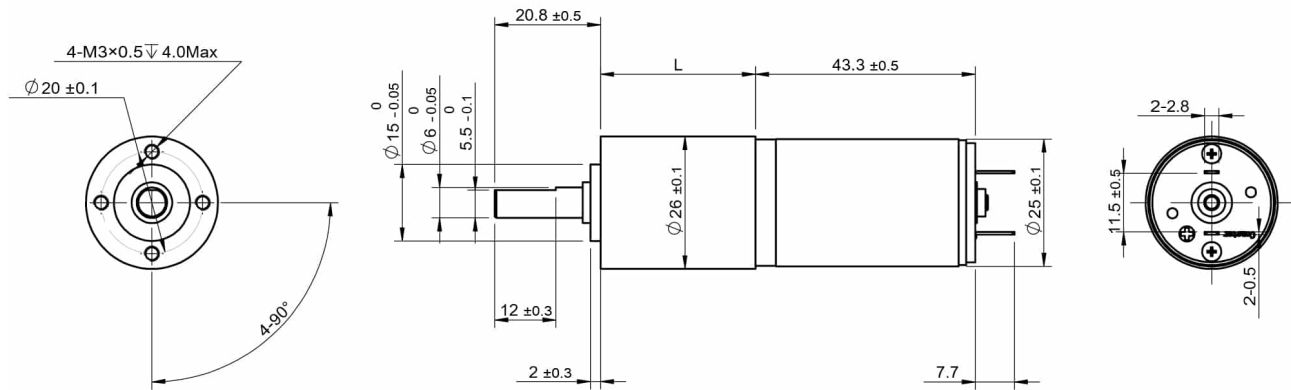
<https://www.kocomotion.de/produkt/25-25mp/>

Motor Characteristics	Unit	2543N9C2B05-65-48.0	2543N9C2B10-90-24.0	2554N9C2B09-60-14.0
Rated voltage	V	48.0	24.0	14.0
Max. output power	W	23.8	36.5	17.8
Max. efficiency	%	77	86	81
Back-EMF constant	mV/rpm	7.3	2.7	2.3
Torque constant	mNm/A	69.5	25.3	22.1
Speed/torque gradient	rpm/mNm	46.5	58.1	52.9
Rotor inertia	gcm ²	13.2	13.2	14.2
Weight	g	96	96	120
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	25 +/- 0.1	25 +/- 0.1	25 +/- 0.1
Motor length	mm	43.3 +/- 0.5	43.3 +/- 0.5	43.3 +/- 0.5
Terminal resistance	Ω	23.5	3.9	2.7
No-load speed	rpm	6500	9000	6000
No-load current	A	0.03	0.035	0.05
Stall torque	mNm	139.7	154.8	113.42
Stall current	A	2.04	6.15	5.19
Load torque	mNm	40	30	20
Load speed	rpm	4640	7260	4940
Load current	A	0.61	1.22	0.96

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	3.7-5.2	13-27	50-140	187-352	--	--
Max. rated torque	mNm	500	750	2000	2500	--	--
Max. momentary torque	mNm	750	1100	3000	3750	--	--
Length L	mm	21.5	30.5	39.5	48.5	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Powder metallurgy	-	-	-	-	-

Drawings



32mm Planetary Gearbox Series

32**...32MP...

32...32MP... 32mm Planetary Gearbox Series** is engineered for high durability, precision, and versatility in advanced motion control systems. Designed with a 32mm outer diameter, this series supports complex application requirements across medical equipment, scientific instrumentation, and industrial automation.



- **Flexible Configurations:** Available with 1-6 gearbox stages, providing a broad reduction ratio spectrum from 16:1 up to 1076:1 for highly adaptable speed and torque profiles.
- **High Performance:** Achieve maximum rated torque up to 1200 mNm (momentary torque up to 3600 mNm), ensuring reliable operation under dynamic or peak load conditions.
- **Durable Construction:** Features a metal shell for mechanical robustness and plastic injection-molded gears for efficient motion transmission at reduced noise levels.
- **Compact Dimensions:** Standard lengths from 35.7 mm to 55.7 mm (depending on stage count) facilitate integration in compact system designs.
- **Customization Options:** Tailor lead wire length, shaft specifications, and coil designs to meet specific application or installation demands.

These planetary gearboxes are optimized for high-precision, continuous duty cycles in environments requiring accuracy and reliability—making them the preferred choice for OEMs and system integrators seeking dependable, high-torque mechanical drive solutions.



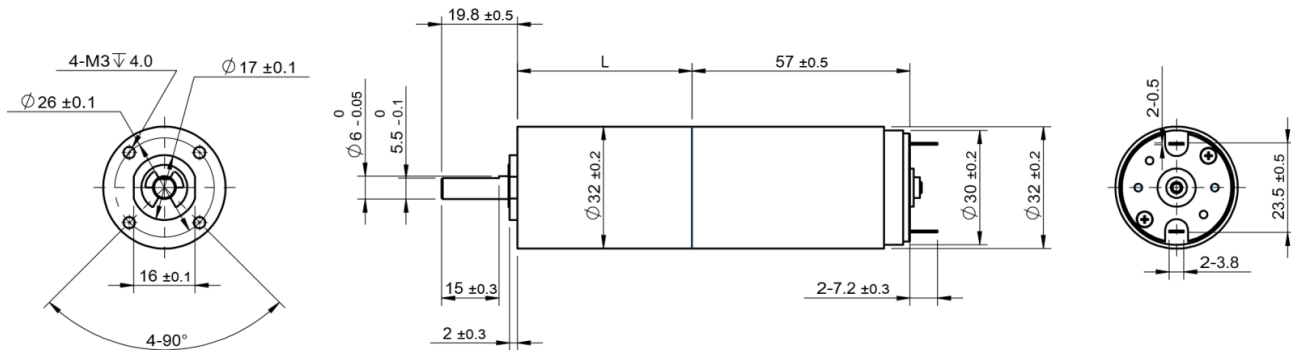
<https://www.kocomotion.de/produkt/32-32mp/>

Motor Characteristics	Unit	3257N9C2B01-56-12.0	3257N9C2B02-64-24.0	3257N9C2B08-74-12.0
Rated voltage	V	12.0	24.0	12.0
Max. output power	W	34.6	50.6	58.9
Max. efficiency	%	74	83	81
Back-EMF constant	mV/rpm	2.1	3.7	3.2
Torque constant	mNm/A	20.1	35.5	30.7
Speed/torque gradient	rpm/mNm	23.7	21.2	24.4
Rotor inertia	gcm ²	42	42	42
Weight	g	230	230	230
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	32 +/- 0.2	32 +/- 0.2	32 +/- 0.2
Motor length	mm	57 +/- 0.5	57 +/- 0.5	57 +/- 0.5
Terminal resistance	Ω	1	2.8	2.4
No-load speed	rpm	5600	6400	7400
No-load current	A	0.24	0.07	0.1
Stall torque	mNm	235.8	301.9	303.5
Stall current	A	12	8.57	10
Load torque	mNm	30	50	50
Load speed	rpm	4890	5340	6810
Load current	A	1.74	1.48	1.73

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	--	16-33	67-188	272-1076	--	--
Max. rated torque	mNm	--	400	800	1200	--	--
Max. momentary torque	mNm	--	1200	2400	3600	--	--
Length L	mm	--	35.7	45.7	55.7	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Plastic injection	-	-	-	-	-

Drawings



43mm 24V Brushless Gear Motor

B043**...42MP...

B043...42MP... Series | 43mm 24V Outerrotor Brushless Gear Motor with Planetary Gearbox**

- **Gearbox Stages:** Configurable from 1 to 6 stages
- **Reduction Ratios:** 3.65–393 (1–3 stages)
- **Max. Rated Torque:** Up to 15,000 mNm
- **Compact Design:** Lengths from 33.8 mm to 61 mm (depending on stages)
- **Durable Materials:** Metal shell; 1-stage features plastic-injection gears
- **24V Brushless Outerrotor:** Ensures high efficiency and reliable performance
- **Customizable:** Lead wire length, shaft length, and special coil options

Designed for demanding automation environments, this gear motor offers precise operation and long service life. Its planetary gearbox delivers high torque density and excellent shock load resistance—ideal for **medical equipment, scientific instruments, or industrial machinery** where smooth, controlled motion is critical.

- 1-stage: 3000 mNm rated torque, reduction 3.65–8.63
- 2-stage: 7500 mNm rated torque, reduction 14–58
- 3-stage: 15,000 mNm rated torque, reduction 67–393

Flexible configuration and robust construction provide superior adaptability and performance for OEMs and system integrators.



<https://www.kocomotion.de/produkt/bo43-42mp/>

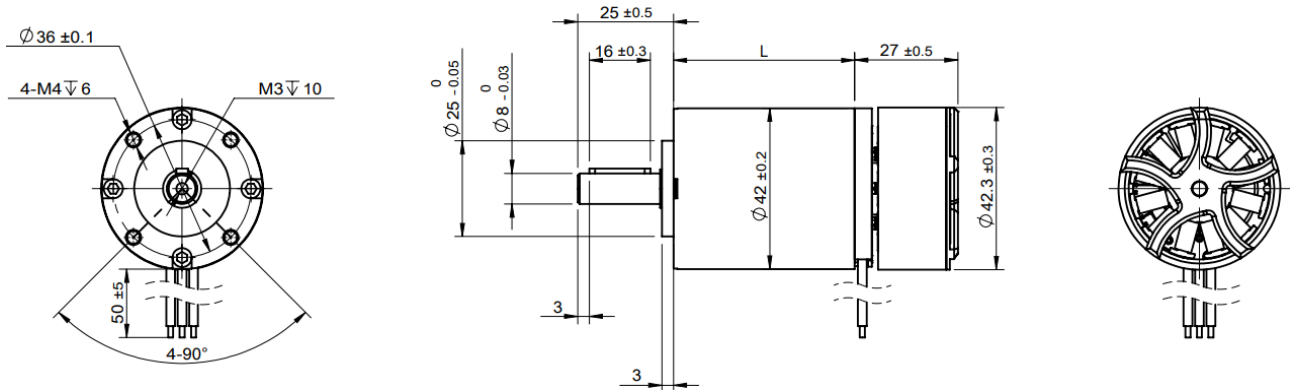


Motor Characteristics	Unit	B04326NBH2B01-92-48.0	B04326NBH2B02-92-36.0	B04326NBH2B03-92-24.0
Rated voltage	V	48.0	36.0	24.0
Max. output power	W	569	711	678
Max. efficiency	%	84.8	84.8	86
Back-EMF constant	mV/rpm	5.18	3.89	2.6
Torque constant	mNm/A	48.5	37.1	24.8
Speed/torque gradient	rpm/mNm	3.9	3.1	3.3
Rotor inertia	gcm ²	153	153	153
Weight	g	132	132	132
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	42.3 +/- 0.3	42.3 +/- 0.3	42.3 +/- 0.3
Motor length	mm	42 +/- 0.2	42 +/- 0.2	42 +/- 0.2
Terminal resistance	Ω	1	0.45	0.21
No-load speed	rpm	9200	9200	9200
No-load current	mA	0.3	0.3	0.5
Stall torque	mNm	2361	2952	2817
Stall current	A	48	80	114
Load torque	mNm	192	190	194
Load speed	rpm	7000	7000	7000
Load current	mA	3.6	4.8	7.2

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	3.65-8.63	14~58	67-393	--	--	--
Max. rated torque	mNm	3000	7500	15000	--	--	--
Max. momentary torque	mNm	6000	15000	30000	--	--	--
Length L	mm	33.8	47.4	61	--	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Plastic injection	-	-	-	-	-

Drawings



48mm Brushless Planetary Gear Motor

B048**...52MP...

B048...52MP... 48mm Planetary Gear Motor Series** offers precision motion control in a compact brushless DC package, specifically engineered for demanding applications requiring high torque and precise variable speed.

- **Planetary Gearbox Flexibility:** Available with 1 to 6 stages, offering reduction ratios from 3.65:1 to 393:1. Suits applications that require a range of speed and torque characteristics.
- **High Performance:** Delivers up to 25,000 mNm rated torque (3-stage), and 50,000 mNm peak (momentary) torque. All-metal construction and precision CNC-machined gears ensure consistent, robust performance and long operational life.
- **Compact Design:** 48mm diameter with gearbox lengths from 38.6 mm (1 stage) up to 69.8 mm (3 stages), optimizing installation in space-limited assemblies.
- **Customizable Options:** Tailor fit with selectable lead wire lengths, special coils, and shaft length modifications to match unique application needs.
- **Applications:** Trusted in **medical equipment** (analysis instruments, pumps), **scientific devices** (precision positioning, laboratory automation), and **industrial automation** (robotics, conveyors).

This series combines reliable brushless motor technology with a rugged gear train for precise, long-lasting motion control in professional environments.



<https://www.kocomotion.de/produkt/bo48-52mp/>

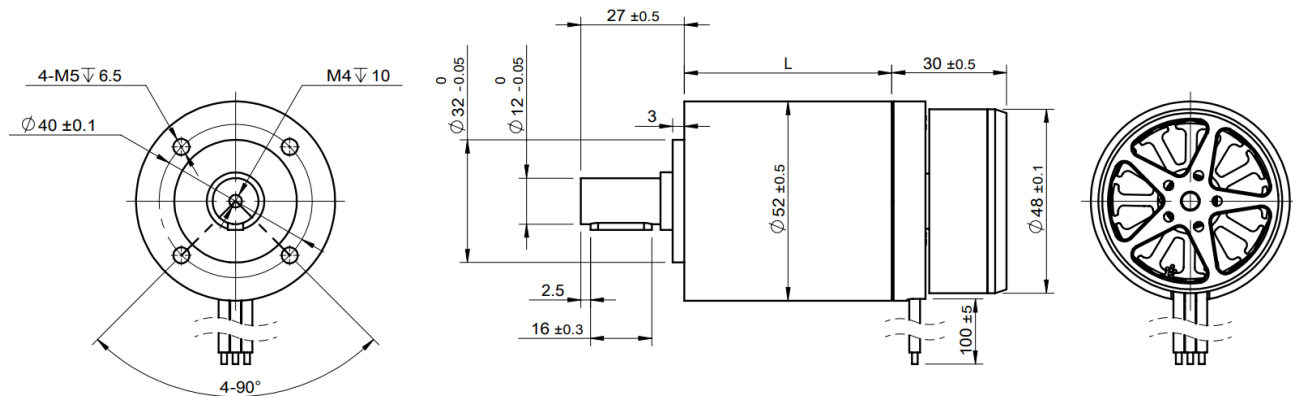


Motor Characteristics	Unit	B04831NH2B01-101-18.0	B04831NH2B02-101-24.0	B04831NH2B03-101-36.0
Rated voltage	V	18.0	24.0	36.0
Max. output power	W	1609	1788	1788
Max. efficiency	%	89.2	89.3	89.3
Back-EMF constant	mV/rpm	1.8	2.4	3.5
Torque constant	mNm/A	16.9	22.5	33.7
Speed/torque gradient	rpm/mNm	1.68	1.51	1.51
Rotor inertia	g·cm ²	306	306	306
Weight	g	211	211	211
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	48 +/- 0.1	48 +/- 0.1	48 +/- 0.1
Motor length	mm	52 +/- 0.5	52 +/- 0.5	52 +/- 0.5
Terminal resistance	Ω	0.05	0.08	0.18
No-load speed	rpm	10160	10160	10160
No-load current	A	1.1	0.9	0.6
Stall torque	mNm	6053	6726	6727
Stall current	A	360	300	200
Load torque	mNm	449	447	457
Load speed	rpm	7600	7700	7700
Load current	mA	23.5	17.6	12.0

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	3.65~8.63	14~58	67~393	--	--	--
Max. rated torque	mNm	4000	12000	25000	--	--	--
Max. momentary torque	mNm	8000	24000	50000	--	--	--
Length L	mm	38.6	54.2	69.8	--	--	--
Shell material		Metal	-	-	-	-	-
Gear processing technology Gear processing technology		Metal CNC	-	-	-	-	-

Drawings



61mm 24V DC Brushless Gear Motor

B061**...62MP...

The B061**...62MP... series represents high-performance, 61mm-diameter 24V DC brushless gear motors tailored for demanding automation environments. Leveraging a robust planetary gearbox design, this series offers:



- **Versatile Gearbox Configurations:** 1-3 stages with reduction ratios from 3.65:1 up to 393:1 and future support for higher stages.
- **High Torque Output:** Max. rated torque reaching **50,000 mNm** (with up to 100,000 mNm momentary torque).
- **Quality Engineering:** Features precision metal shell construction and CNC-machined metal gears for superior durability and performance.
- **Compact Size:** Gearbox lengths from 45.1mm (1 stage) to 80.3mm (3 stages), optimizing integration in space-constrained designs.
- **Customization:** Options for lead wire length, shaft length, and special coil designs adapt to diverse application needs.

Applications include:

- Medical equipment requiring quiet, reliable, and precise drive systems
- Scientific instruments benefiting from high-accuracy, low-backlash motion control
- Industrial automation where robust, long-life motors with adaptable torque and speed profiles are essential

The B061**...62MP... series stands out with its combination of efficiency, torque density, and customization, making it a superior choice for advanced motion solutions.



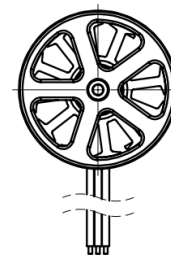
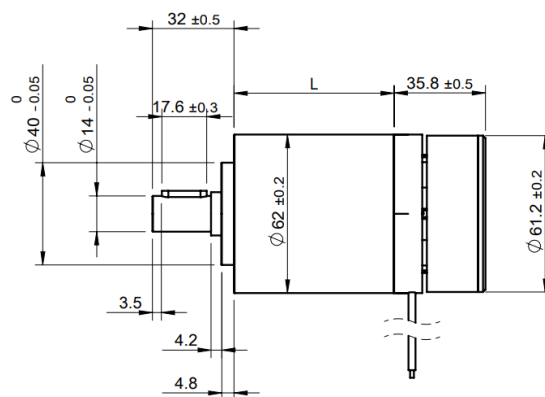
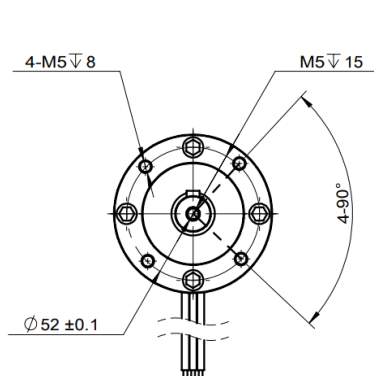
<https://www.kocomotion.de/produkt/bo61-62mp/>

Motor Characteristics	Unit	B06133N2B01-50-48.0	B06133N2B02-50-36.0	B06133N2B03-50-24.0
Rated voltage	V	48.0	36.0	24.0
Max. output power	W	730	744	749
Max. efficiency	%	85.4	85.1	85.6
Back-EMF constant	mV/rpm	9.5	7.2	4.8
Torque constant	mNm/A	91.2	68.3	45.6
Speed/torque gradient	rpm/mNm	0.9	0.9	0.9
Rotor inertia	gcm ²	599	599	599
Weight	g	230	230	230
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	61.2 +/- 0.2	61.2 +/- 0.2	61.2 +/- 0.2
Motor length	mm	62 +/- 0.2	62 +/- 0.2	62 +/- 0.2
Terminal resistance	Ω	0.78	0.43	0.19
No-load speed	rpm	5000	5000	5000
No-load current	mA	0.35	0.5	0.7
Stall torque	mNm	5577	5687	5725
Stall current	mA	61.5	83.7	126.3
Load torque	mNm	558	553	558
Load speed	rpm	3700	3700	3700
Load current	mA	5.5	7.3	11

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	3.65~8.63	14~58	67~393	--	--	--
Max. rated torque	mNm	8000	25000	50000	--	--	--
Max. momentary torque	mNm	16000	50000	100000	--	--	--
Length L	mm	45.1	62.7	80.3	--	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



6mm 3V Micro Planetary Gear Motors

L0616...06PP... /
L0616...06PF... /
L0616...06PR...



L0616...06PP... / L0616...06PF... / L0616...06PR... micro planetary gear motors deliver high-performance motion solutions in a compact 6mm package, engineered for demanding 3V applications. The planetary gearbox architecture ensures robust torque transfer, outstanding efficiency, and long service life—making these units suitable for critical miniature drive applications.

- **Ultra-compact design:** 6mm diameter for seamless integration into space-constrained devices.
- **Optimized for 3V systems:** Reliable operation with low power consumption, suitable for battery-powered technologies.
- **Precision gearing:** Planetary configuration delivers smooth, high-torque performance and superior reliability.
- **Customizable features:** Options include bespoke coil configurations and lead wire length variations to meet specific application requirements.

Engineered for a wide range of demanding uses, these micro gear motors are ideal for:

- Medical equipment (e.g., infusion pumps, surgical tools)
- Security systems and electronic locks
- Audio and visual product mechanisms
- Personal healthcare devices (e.g., electric toothbrushes, trimmers)
- Premium hobby and model applications requiring precise, quiet actuation

With their combination of precision, efficiency, and customization, the L0616...06P Series stands out as a versatile solution for engineers seeking reliable micro-motion control in high-end applications.

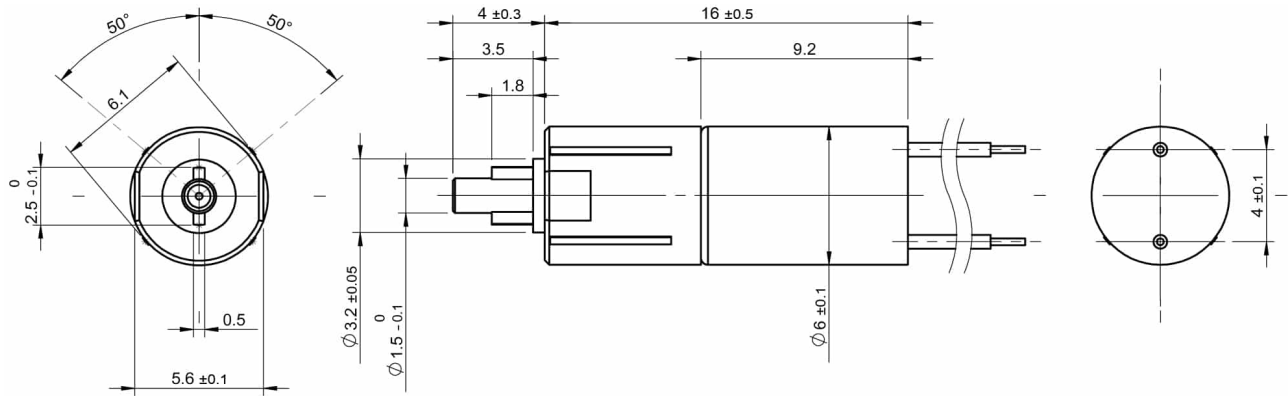


<https://www.kocomotion.de/produkt/l0616-06pp/>

Motor characteristics	Unit	L0616-1300-3.0-06PP25-0001	L0615-1300-3.0-06PF25-0025	L0615-1800-3.0-06PR25-0035
Rated voltage	V	3.0	-	-
Weight	g	1.2	-	-
Operating temperature	°C	-10 +70	-	-
Outer diameter	mm	6 +/- 0.1	-	-
Motor length	mm	16 +/- 0.5	-	-
Terminal resistance	Ω	13.7	-	-
No-load speed	rpm	1300	-	-
No-load current	mA	50	-	-
Max torque	mNm	2.94	-	-
Load torque	mNm	0.2	-	-
Load speed	rpm	1210	-	-
Load current	mA	60	-	-
Reduction ratio		1/25	-	-

Motor Characteristics	Unit	L0616-1300-3.0-06PP25-0001	L0615-1300-3.0-06PF25-0025	L0615-1800-3.0-06PR25-0035
Rated voltage	V	-	3.0	3.0
Weight	g	-	1.2	1.2
Operating temperature	°C	-	-10 +70	-10 +70
Outer diameter	mm	-	6 +/- 0.1	6 +/- 0.1
Motor length	mm	-	16 +/- 0.5	16 +/- 0.5
Terminal resistance	Ω	-	13.7	7.8
No-load speed	rpm	-	1300	1750
No-load current	mA	-	50	55
Max torque	mNm	-	2.94	3.4
Load torque	mNm	-	0.2	0.2
Load speed	rpm	-	1200	1680
Load current	mA	-	60	65
Reduction ratio		-	1/25	1/25

Drawings

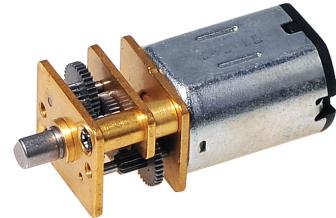


12mm Micro DC Spur Gearmotor

C12**...12MS...

C12**...12MS... 12mm Micro DC Spur Gearmotor Series

The C12**...12MS... series delivers precision performance in a miniature package, engineered for demanding motion control applications requiring compact size and high reliability. This spur gearbox series features all-metal housings and CNC-machined metal gears for superior strength and durability.



- **Gearbox configurations:** 2-7 stages, supporting reduction ratios from 3 up to 1000
- **Rated torque:** up to 100 mNm; momentary torque up to 300 mNm
- **Compact dimensions:** available lengths from 9 mm (standard) to 12 mm (7-stage)
- **Metal shell:** ensures robustness and long service life
- **Precision machining:** Metal CNC gear processing technology for low backlash and high efficiency
- **Options:** Customizable lead wire lengths and special coil configurations for tailored performance

Primary Applications:

- Medical devices (e.g. portable instruments, diagnostic equipment)
- Scientific instrumentation
- Industrial automation equipment

Engineered for integration into compact spaces, the C12**...12MS... gearmotors deliver stable output, precise speed control, and mechanical robustness. Their modular design and customization options make them a preferred choice for OEMs seeking reliable motion solutions in demanding microdrive systems.



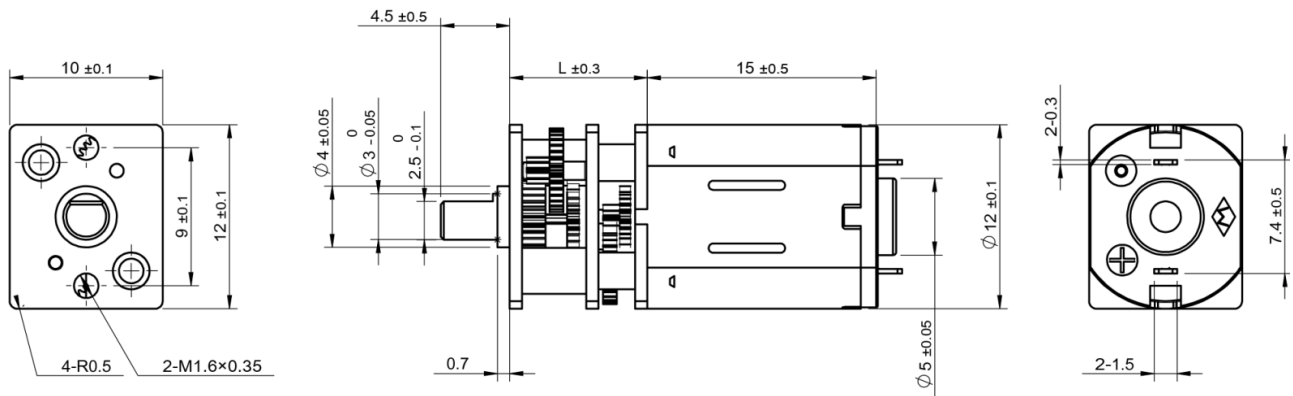
<https://www.kocomotion.de/produkt/c12-12ms/>

Characteristics	Unit	C1215F33-0128	C1215F13-0462	C1215F13-0260
Rated voltage	V	6.0	1.5	3.0
Max. output power	W	0.16	0.40	0.18
Max. efficiency	%	35	51	44.8
Back-EMF constant	mV/rpm	0.6	0.12	0.27
Torque constant	mNm/A	5.75	1.12	2.99
Speed/torque gradient	rpm/mNm	11543	9188	13714
Rotor inertia	gcm ²	0.3	0.3	0.3
Weight	g	5.4	5.4	5.4
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	12 +/- 0.1	12 +/- 0.1	12 +/- 0.1
Motor length	mm	15 +/- 0.5	15 +/- 0.5	15 +/- 0.5
Terminal resistance	Ω	40	1.2	10.8
No-load speed	rpm	8300	11800	9600
No-load current	mA	25	100	40
Stall torque	mNm	0.72	1.28	0.7
Stall current	mA	150	1250	274
Nominal torque	mNm	0.35	0.6	0.29
Nominal speed	rpm	4260	6287	5500
Nominal current	mA	90	640	140

Gearbox Characteristics

Gearbox stages	Unit	2	4	4	5	5	7
Reduction ratio	--	3.5.10	17.20.30.36	50.63.100	110.150	210.250.298.380	372.625.1000
Max. rated torque	mNm	20	30	40	50	80	100
Max. momentary torque	mNm	60	90	120	150	240	300
Length L	mm	9	9	9	9	9	12
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



14mm DC Spur Gearmotor Series

C12**...14MS...

C12...14MS... 14mm DC Spur Gearmotor Series** delivers high-performance motion in a compact form factor, engineered for demanding applications in medical equipment, scientific instruments, and industrial automation.



- **Multiple gearbox configurations:** Choose from 2 to 7-stage metal gearboxes with reduction ratios ranging from 3 to 1000 for precise speed and torque control.
- **Powerful performance:** Achieve maximum rated torques up to 100 mNm and peak momentary torques up to 300 mNm, supporting dynamic loads in compact environments.
- **Rugged construction:** Features a robust metal shell and precision metal CNC gears, ensuring long-term reliability and consistent operation.
- **Compact design:** All models in the series feature lengths from 9 mm to 12 mm, facilitating integration into space-constrained assemblies.
- **Customizable options:** Special coils and lead wire lengths available to tailor the gearmotor to specific project requirements.

This gearmotor family is ideally suited for critical and compact drives in analytical devices, portable laboratory equipment, and miniature industrial actuators—where durability, efficiency, and precise control are essential. Its versatility and robust design make it a reliable choice for advanced automation solutions.



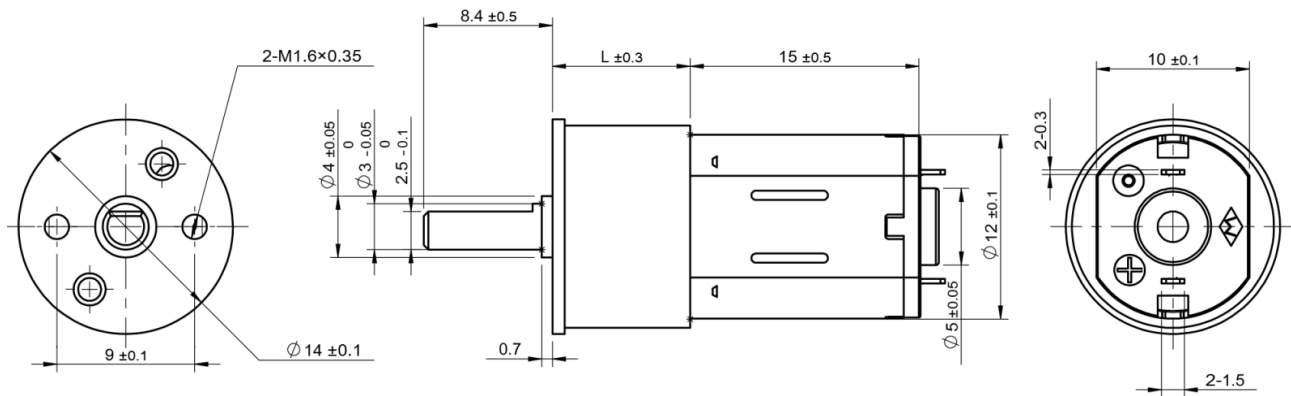
<https://www.kocomotion.de/produkt/c12-14ms/>

Motor Characteristics	Unit	C1215F33-0128	C1215F13-0462	C1215F13-0260
Rated voltage	V	6.0	1.5	3.0
Max. output power	W	0.16	0.4	0.18
Max. efficiency	%	35	51	44.8
Back-EMF constant	mV/rpm	0.60	0.12	0.27
Torque constant	mNm/A	5.75	1.12	2.99
Speed/torque gradient	rpm/mNm	11543	9188	13714
Rotor inertia	gcm ²	0.3	0.3	0.3
Weight	g	5.4	5.4	5.1
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	12 +/- 0.1	12 +/- 0.1	12 +/- 0.1
Motor length	mm	15 +/- 0.5	15 +/- 0.5	15 +/- 0.5
Terminal resistance	Ω	40	1.2	10.8
No-load speed	rpm	8300	11800	9600
No-load current	mA	25	100	40
Stall torque	mNm	0.72	1.28	0.7
Stall current	mA	150	1250	274
Load torque	mNm	0.35	0.6	0.29
Load speed	rpm	4260	6287	5500
Load current	mA	90	640	140

Motor Characteristics

Gearbox stages	Unit	2	4	4	5	5	7
Reduction ratio	--	3.5.10	17.20.30.36	50.63	100.150.210	250.298.380	372.625.1000
Max. rated torque	mNm	20	30	40	60	80	100
Max. momentary torque	mNm	60	90	120	180	240	300
Length L	mm	9	9	9	9	9	12
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



16mm Coreless Motor with Spur Gearbox

1526...16MS...

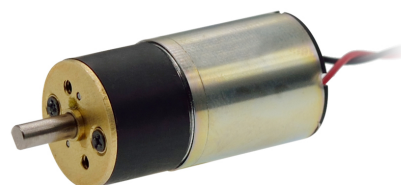
KOCO 1526...16MS... series features 16mm, 18V coreless motors paired with high-quality spur gearboxes engineered for precision, durability, and compact integration. These units combine the efficiency of coreless DC motors with robust, multi-stage gear reductions, making them ideally suited to demanding automation tasks in medical, laboratory, and industrial environments.

- **Gearbox Configuration:** 2-5 stages available, offering reduction ratios from 3:1 up to 360:1, enabling a wide range of speed-torque characteristics tailored to application requirements.
- **Performance:** Maximum rated torque up to 80 mNm and momentary peak torques up to 240 mNm, with a compact length of just 11 mm for flexible installation.
- **Construction:** Gearboxes utilize metal CNC-processed gears and metal shells to ensure high mechanical reliability and long service life even under continuous duty.
- **Customization:** Options include special coils and custom lead wire lengths to perfectly match specific system demands.
- **Applications:** Designed for use in medical devices, scientific instruments, and compact industrial equipment where precision motion, quiet operation, and high torque are required within limited spaces.

Benefits: The 1526...16MS... series stands out by offering exceptional torque density, reliability, and configurability in a compact platform. The use of coreless technology results in lower inertia and smoother control, critical for applications requiring accuracy and repeatability.



<https://www.kocomotion.de/produkt/1526-16ms/>

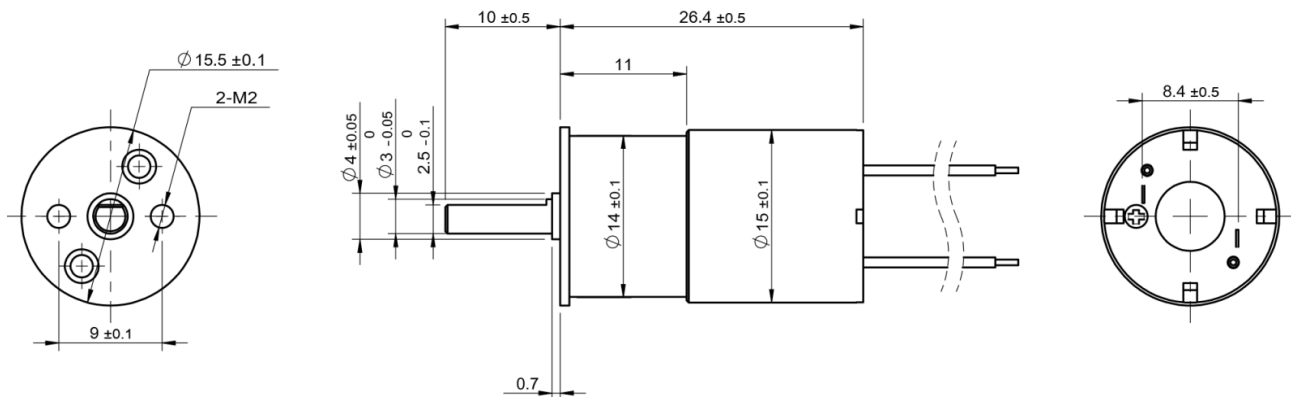


Motor Characteristics	Unit	1515N5M07-220-18.0	1515N5M10-220-12.0
Rated voltage	V	18.0	12.0
Max. output power	W	2.52	4.15
Max. efficiency	%	71	67
Back-EMF constant	mV/rpm	0.8	0.5
Torque constant	mNm/A	7.6	4.6
Speed/torque gradient	rpm/mNm	5000	3640
Rotor inertia	gcm ²	0.21	0.21
Weight	g	12	12
Operating temperature	°C	-10~+80	-10~+80
Outer diameter	mm	15 +/- 0.1	15.5 +/- 0.1
Motor length	mm	26.4 +/- 0.5	26.4 +/- 0.5
Terminal resistance	Ω	30.8	8.1
No-load speed	rpm	22000	24000
No-load current	mA	15	50
Stall torque	mNm	4.4	6.6
Stall current	mA	590	1480
Nominal torque	mNm	1	1.5
Nominal speed	rpm	16890	18540
Nominal current	mA	150	380

Gearbox Characteristics

Gearbox stages	Unit	2	4	4	4	5	5	5	--
Reduction ratio	--	3.7.10	16.17.20.30.35	50.63	70.86	115.150	210.250	360	--
Max. rated torque	mNm	20	30	40	50	60	70	80	--
Max. momentary torque	mNm	60	90	120	150	180	210	240	--
Length L	mm	11	11	11	11	11	11	11	--
Shell material	--	Metal	-	-	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-	-	-

Drawings



2D drawing 1526---16MS---

16mm Coreless Spur Gearbox Motors

1638...16MS...

1638...16MS... 16mm 12V Coreless Spur Gearbox Motor Series delivers high precision and torque for demanding motion control solutions. This range features:

- **Versatile Gearbox Options:** Choose from 2 to 5 stages, reduction ratios spanning 10 to 360, and compact 10.6 mm gearbox length for optimal integration.
- **Robust Torque Performance:** Maximum rated torques range from 20 mNm (2-stage) up to 100 mNm (5-stage), with momentary peaks up to 300 mNm, supporting dynamic load requirements.
- **Reliable Coreless Motor Design:** 12V operation ensures smooth, efficient performance with low electrical noise, making it ideal for sensitive environments.



Key Applications:

- Medical equipment (e.g., infusion pumps, surgical devices)
- Scientific instruments requiring precise actuation
- Industrial automation, robotics, and compact drive systems

Customizable Options:

- Special coil configurations for tailored electrical performance
- Adjustable lead wire lengths to fit unique assembly needs

Designed for reliable, long-term operation in space-constrained and high-precision environments, the 1638...16MS... series offers a flexible foundation for OEMs seeking robust miniature drive solutions with rapid configuration options.



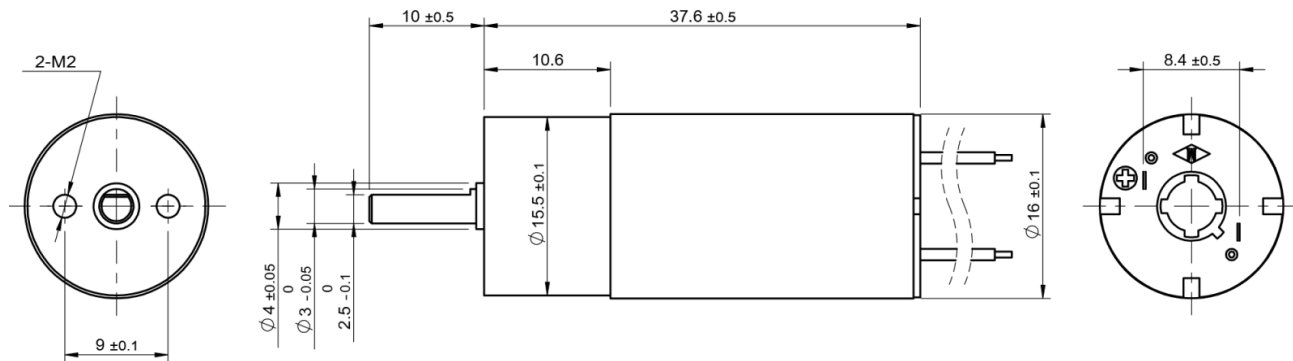
<https://www.kocomotion.de/produkt/1638-16ms/>

Motor Characteristics	Unit	1627N5M21-113-12.0	1627N5M27-66-6.0
Rated voltage	V	12.0	6.0
Max. output power	W	3	1.1
Max. efficiency	%	79	77
Back-EMF constant	mV/rpm	1	0.9
Torque constant	mNm/A	10	8.6
Speed/torque gradient	rpm/mNm	1100	1100
Rotor inertia	gcm ²	0.7	0.7
Weight	g	25	25
Operating temperature	°C	-10~+80	-10~+80
Outer diameter	mm	16 +/- 0.1	16 +/- 0.1
Motor length	mm	37.6 +/- 0.5	37.6 +/- 0.5
Terminal resistance	Ω	11.8	8.2
No-load speed	rpm	11300	6600
No-load current	mA	13	11
Stall torque	mNm	10.1	6.1
Stall current	mA	1020	730
Nominal torque	mNm	1.5	1
Nominal speed	rpm	9620	5530
Nominal current	mA	160	130

Gearbox Characteristics

Gearbox stages	Unit	2	3	4	4	5
Reduction ratio	--	10	21.34	59.75	105.146	203.257.294.360
Max. rated torque	mNm	20	30	50	80	100
Max. momentary torque	mNm	60	90	150	240	300
Length L	mm	10.6	10.6	10.6	10.6	10.6

Drawings



2D drawing 1638---16MS---

10mm Planetary Gearbox Series

C1020...10PP...(1)

The **C1020...10PP...(1) 10mm planetary gearbox series** is engineered for high-precision motion control in limited spaces, ensuring optimal performance and durability in advanced applications. Its compact planetary design provides high torque density and efficiency while maintaining smooth operation and low backlash—critical for sensitive instruments and devices.



- **High precision:** Planetary gearing ensures consistent, repeatable motion output.
- **Space-saving footprint:** 10mm diameter design fits inside compact enclosures and miniaturized devices.
- **Customizable options:** Available with special coil variants and adjustable lead wire lengths for easy integration.
- **Reliability:** Robust construction supports continuous duty and long service life, minimizing maintenance.

Applications:

- Medical equipment (pumps, actuators, precision tools)
- Security systems and electronic locks
- Audio/visual products where accuracy and compactness are critical
- Personal healthcare devices (portable and wearable units)
- High-end hobby and model building projects

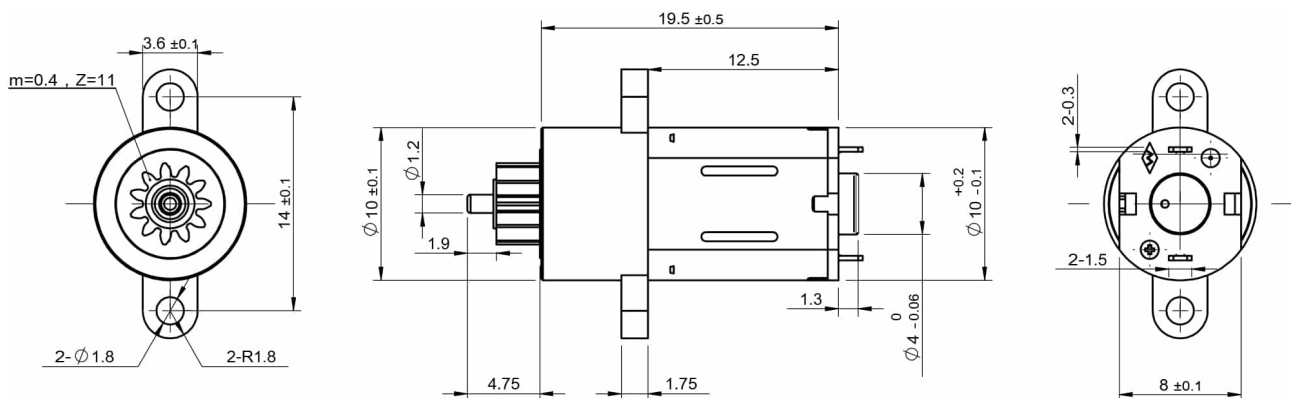
This gearbox series stands out for its blend of miniaturization, torque transmission, and adaptability, helping OEMs and engineers achieve motion control solutions in demanding, space-sensitive environments.



<https://www.kocomotion.de/produkt/c1020-10pp-1-2/>

Motor Specifications	Unit	C1020-110-2.5-10PP171-0051
Rated voltage	V	2.5
Weight	g	3.8
Operating temperature	°C	-10~+70
Outer diameter	mm	10 + 0.2 - 0.1
Motor length	mm	19.5 +/- 0.5
Terminal resistance	Ω	3.7
No-load speed	rpm	110
No-load current	mA	100
Max torque	mNm	37.2
Load torque	mNm	9.8
Load speed	rpm	80
Load current	mA	230
Reduction ratio		1/171

Drawings



10mm Planetary Gearbox Series

C1020...10PP... / C1019...10PRC...(2)



The C1020...10PP... / C1019...10PRC... 10mm Planetary Gearbox Series delivers compact, high-precision performance for advanced motion control requirements. Engineered for consistent torque output and durability, these gearboxes are designed to meet the rigorous demands of modern electromechanical assemblies.

- **Key Features:**

- High-precision 10mm planetary gearbox construction for space-restricted environments
- Robust torque transmission and optimized load distribution via planetary gear mechanism
- Customizable options, including special winding coils and tailored lead wire lengths

- **Applications:**

- Medical equipment—ensures precise positioning and quiet operation in diagnostic or therapeutic devices
- Security systems and locks—enables secure actuation in access control mechanisms
- Audio and visual products—provides stable, smooth movement in compact AV assemblies
- Personal healthcare products—supports reliable drive solutions for portable medical or wellness devices
- High-end hobby products—delivers consistent, fine motion control for specialized hobbyist equipment

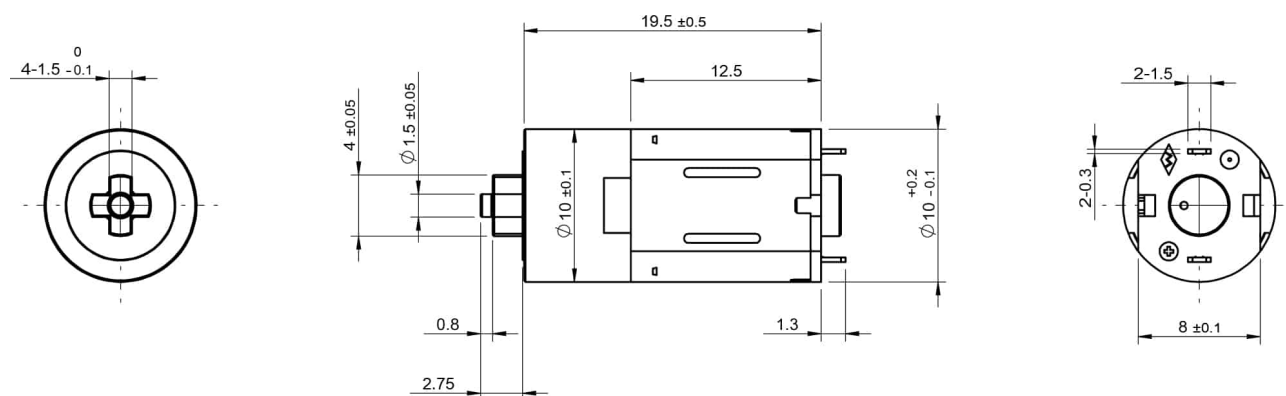
Benefits: With industry-grade reliability and flexibility in customization, this gearbox series supports integration in innovative, size-critical designs where performance and longevity are paramount. Choose the C1020...10PP... / C1019...10PRC... series for superior efficiency and versatile application coverage.



<https://www.kocomotion.de/produkt/c1020-10pp-c1019-10prc-2/>

Motor Specifications	Unit	C1020-110-2.5-10PP171-0053	C1019-80-3.0-10PRC171-0108	C1019-110-3.0-10PRC171-0078
Rated voltage	V	2.5	3.0	3.0
Weight	g	3.8	3.8	3.8
Operating temperature	°C	-10~+70	-10~+70	-10~+70
Outer diameter	mm	10 + 0.2 - 0.1	10 + 0.2 - 0.1	10 + 0.2 - 0.1
Motor length	mm	19.5 +/- 0.5	19.5 +/- 0.5	19.5 +/- 0.5
Terminal resistance	Ω	3.7	10.5	5.6
No-load speed	rpm	110	80	115
No-load current	mA	100	40	75
Max torque	mNm	37.2	25	38
Load torque	mNm	9.8	9.8	9.8
Load speed	rpm	80	48	85
Load current	mA	230	140	195
Reduction ratio		1/171	1/171	1/171

Drawings



10mm Precision Planetary Gearboxes

C1020...10PP... / C1019...10PP... / C1019...10PFC...(3)



C1020...10PP... / C1019...10PP... / C1019...10PFC... Planetary Gearbox Series offers advanced precision in a compact 10mm form factor, engineered for integration into demanding miniature drive systems.

• **Technical Features:**

- Compact 10mm planetary gearbox design for space-critical installations
- High-precision gear trains ensure consistent torque transmission and operational stability
- Available with special coils and customizable lead wire lengths to match application requirements

• **Typical Applications:**

- Medical equipment requiring precise, repeatable actuation
- Security systems and locks for enhanced reliability and security
- Audio and visual products demanding quiet, accurate motion control
- Personal healthcare devices prioritizing performance in compact designs
- High-end hobby products where finesse and durability are paramount

• **Competitive Advantages:**

- Excellent performance-to-size ratio for OEM integration
- Configurable electrical and mechanical options for tailored solutions

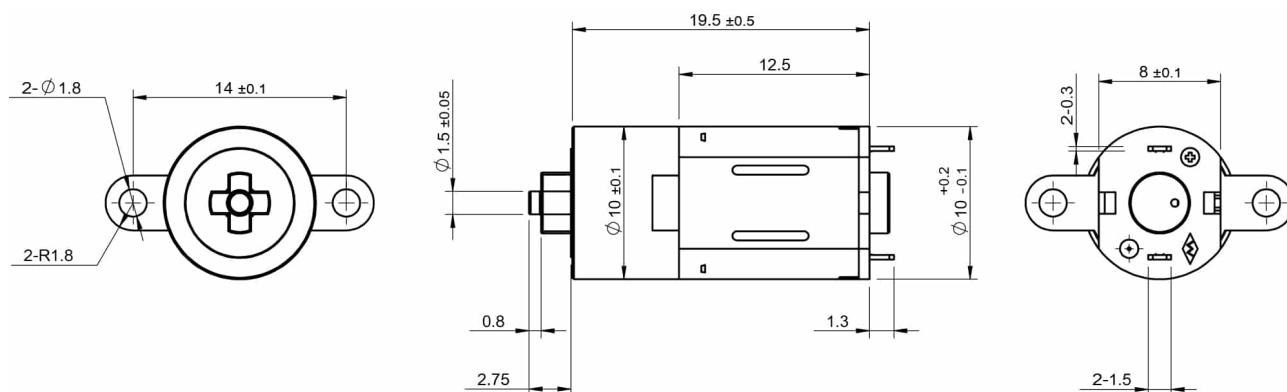
Engineered for superior performance in precision-driven markets, this gearbox series provides the reliability and customization flexibility required for OEMs and system integrators across various industries.



<https://www.kocomotion.de/produkt/c1020-10pp-c1019-10pp-c1019-10pfc-3/>

Motor Specifications	Unit	C1019-110-2.5-10PP171-0050	C1019-180-3.0-10PFC171-0097
Rated voltage	V	2.5	3.0
Operating temperature	°C	-10~+70	-10~+70
Outer diameter	mm	10 + 0.2 - 0.1	10 + 0.2 - 0.1
Motor length	mm	19.5 +/- 0.5	19.5 +/- 0.5
Terminal resistance	Ω	3.5	1.8
No-load speed	rpm	110	178
No-load current	mA	80	90
Max torque	mNm	37.2	37.2
Load torque	mNm	9.8	9.8
Load speed	rpm	80	153
Load current	mA	240	320
Reduction ratio		1/171	1/171

Drawings



12mm Planetary Gearbox Series

C1222...12PP... / C1222...12PFC...

C1222...12PP... / C1222...12PFC... is a high-performance 12mm planetary gearbox series engineered for meticulous motion control in compact spaces. This product line is tailored to meet the stringent requirements of advanced industrial and commercial applications.



- **Key Features:**

- Robust 12mm planetary gear design for high torque density and reliable operation
- Precision-manufactured for smooth and efficient power transmission
- Customizable options, including special coil configurations and various lead wire lengths
- Compact footprint facilitates integration into small devices and intricate assemblies

- **Typical Applications:**

- Medical equipment requiring consistent, reliable actuation
- Security systems and locking mechanisms demanding compact, high-torque solutions
- Audio and visual products where precision motion is critical
- Personal healthcare products necessitating quiet and efficient operation
- High-end hobby products benefiting from miniature, high-performance drive solutions

- **Benefits:**

- Superior torque-to-size ratio, ideal for space-constrained environments
- Flexible customization maximizes integration potential and application-specific performance
- Engineered for durability and longevity in high-duty cycle scenarios

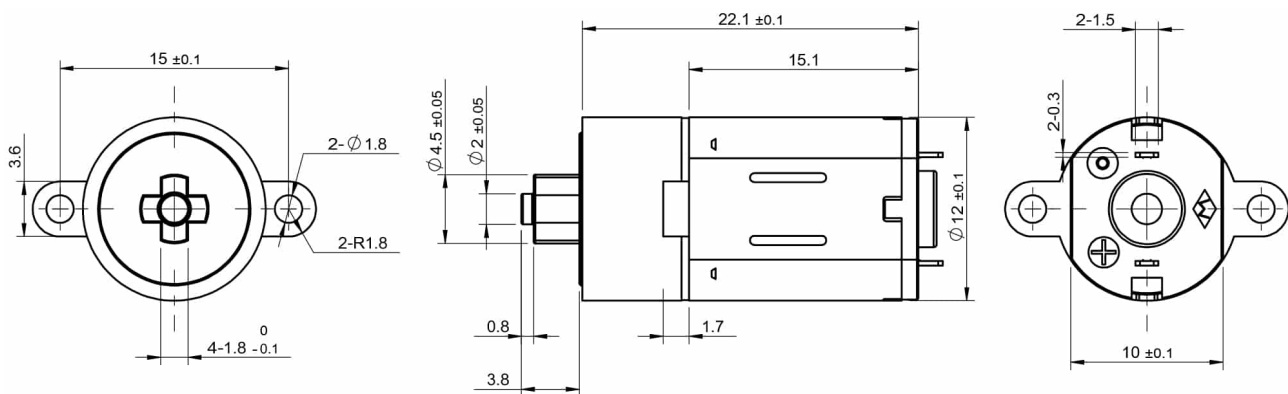
This series delivers a compelling blend of reliability, flexibility, and performance, making it a preferred choice for innovative OEM designs requiring compact yet robust gearbox solutions.



<https://www.kocomotion.de/produkt/c1222-12pp-c1222-12pfc/>

Motor Specifications	Unit	C1222-95-2.5-12PP120-0141	C1222-88-5.0-12PP120-0142	C1222-80-2.5-12PFC120-0228
Rated voltage	V	2.5	5.0	2.5
Weight	g	6.5	6.5	6.5
Operating temperature	°C	-10~+70	-10~+70	-10~+70
Outer diameter	mm	12 $\pm$ 0.1	12 $\pm$ 0.1	12 $\pm$ 0.1
Motor length	mm	22.1 $\pm$ 0.1	22.1 $\pm$ 0.1	22.1 $\pm$ 0.1
Terminal resistance	Ω	3.5	17.8	5.3
No-load speed	rpm	95	88	80
No-load current	mA	60	35	50
Max torque	mNm	68.6	62.7	50
Load torque	mNm	14.7	14.7	15
Load speed	rpm	75	66	56
Load current	mA	180	100	185
Reduction ratio		1/120	1/120	1/120

Drawings



16mm 6V Micro DC Spur Gearmotor

C1630...16MS...

The C1630...16MS... micro DC gearmotor series sets industry standards for compact power and precision motion. With a durable 16mm diameter profile and advanced metal CNC-processed spur gearing, this family offers exceptional performance in space-constrained environments.



- **Precision Spur Gearbox:** Available in 2 to 5 stages, supporting reduction ratios from 3 to 360:1 for optimal speed and torque adjustment.
- **High Torque Density:** Max. rated torque up to 80 mNm and momentary peaks to 240 mNm enable reliable drive in demanding miniature applications.
- **Compact Form Factor:** Gearbox length is a streamlined 11mm, facilitating integration into tight spaces without sacrificing performance.
- **Rugged Construction:** Metal shell and CNC gear processing ensure long-term durability and consistent output accuracy.
- **Customization:** Options for special coils and lead wire lengths support tailored solutions.

Typical Applications:

- Medical devices requiring silent, precise actuation
- Scientific instruments demanding stable, low-noise drive
- Industrial automation components where compact power is critical

Experience the reliable, flexible performance engineers trust for integration in advanced laboratory, medical, and industrial assemblies.



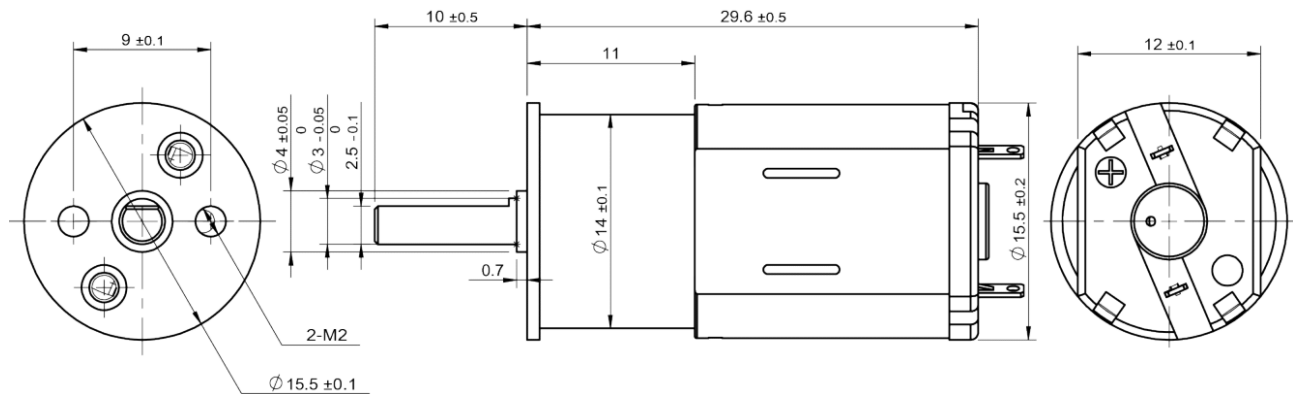
<https://www.kocomotion.de/produkt/c1630-16ms/>

Motor Characteristics	Unit	C1620F13-0032	C1627F13-0013	C1627F13-0050
Rated voltage	V	6.0	12.0	4.5
Max. output power	W	0.73	1.02	0.77
Max. efficiency	%	50	49.9	52.9
Back-EMF constant	mV/rpm	0.47	0.93	0.4
Torque constant	mNm/A	4.47	7.65	3.81
Speed/torque gradient	rpm/mNm	4950	3750	3776
Rotor inertia	gcm ²	0.5	0.5	0.5
Weight	g	10.7	10.7	10.7
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	15.5 +/- 0.2	15.5 +/- 0.2	15.5 +/- 0.2
Motor length	mm	29.6 +/- 9.5	29.6 +/- 0.5	29.6 +/- 0.5
Terminal resistance	Ω	10.3	28.2	5.5
No-load speed	rpm	11700	12100	10500
No-load current	mA	51	25	60
Stall torque	mNm	2.36	3.23	2.78
Stall current	mA	580	447	790
Nominal torque	mNm	2.1	0.88	0.686
Nominal speed	rpm	1305	8800	7910
Nominal current	mA	520	140	240

Gearbox Characteristics

Gearbox stages	Unit	2	4	4	4	5	5	5	--
Reduction ratio	--	3.7.10	16.17.20.30.35	50.63	70.86	115.150	210.250	360	--
Max. rated torque	mNm	20	30	40	50	60	70	80	--
Max. momentary torque	mNm	60	90	120	150	180	210	240	--
Length L	mm	11	11	11	11	11	11	11	--
Shell material	--	Metal	-	-	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-	-	-

Drawings



14mm 6V DC Spur Gear Motor

C1631...14MS...

The C1631...14MS... family delivers high-precision motion control in a compact 14mm package, engineered for 6V DC operation and outstanding reliability. This spur gear motor line is designed to meet demanding requirements in medical devices, scientific instrumentation, and industrial systems requiring accurate, repeatable positioning in limited space.



- **Key Technical Specifications:**

- Gearbox stages: 2 or 4, optimizing torque and speed adaptation
- Reduction ratios: 63, 115, 130, 150, 180, 210, 250, 260, 300, 350 (model dependent)
- Max. rated torque: up to 100 mNm
- Max. momentary torque: up to 300 mNm
- Length (L): 12 mm
- Metal shell and Metal CNC gear processing for durability and performance

- **Applications:**

- Medical equipment actuators and lab automation
- Precision drives in scientific instruments
- Industrial automation systems with tight mechanical constraints

- **Options:** Custom special coils and lead wire length modifications available for specialized integration needs.

Benefits: The robust CNC-processed metal gears and compact build maximize service life, reduce maintenance, and ensure quiet, efficient operation. High reduction ratio availability and torque capacity support versatility across a wide range of low-voltage, space-limited applications where reliability and consistent performance are critical.



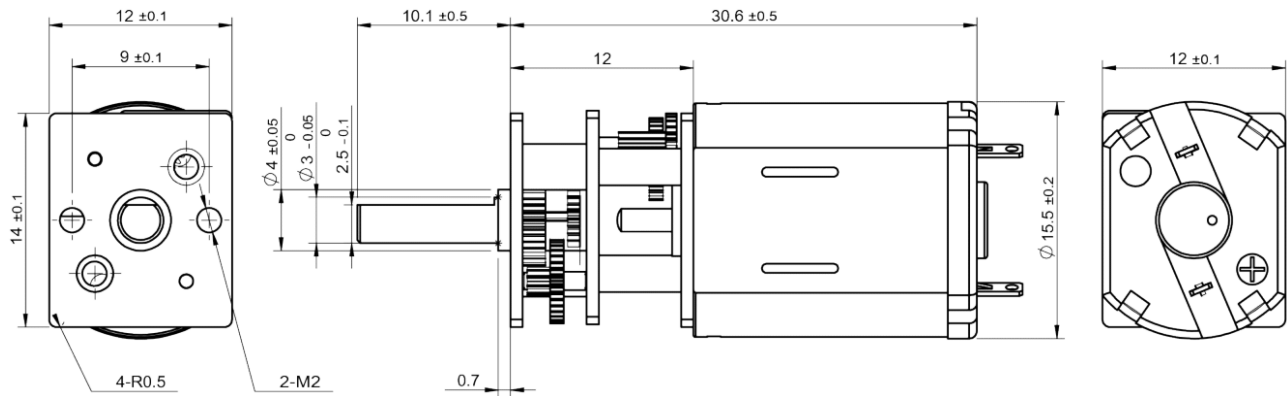
<https://www.kocomotion.de/produkt/c1631-14ms/>

Motor Characteristics	Unit	C1620F13-0032	C1627F13-0013	C1627F13-0050
Rated voltage	V	6.0	12.0	4.5
Max. output power	W	0.73	1.02	0.77
Max. efficiency	%	50	49.9	52.9
Back-EMF constant	mV/rpm	0.47	0.93	0.4
Torque constant	mNm/A	4.47	7.65	3.81
Speed/torque gradient	rpm/mNm	4950	3750	3776
Rotor inertia	gcm ²	0.5	0.5	0.5
Weight	g	10.7	10.7	10.7
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	15.5 +/- 0.2	15.5 +/- 0.2	15.5 +/- 0.2
Motor length	mm	30.6 +/- 0.5	30.6 +/- 0.5	30.6 +/- 0.5
Terminal resistance	Ω	10.3	28.2	5.5
No-load speed	rpm	11700	12100	10500
No-load current	mA	51	25	60
Stall torque	mNm	2.36	3.23	2.78
Stall current	mA	580	447	790
Nominal torque	mNm	2.1	0.88	0.686
Nominal speed	rpm	1305	8800	7910
Nominal current	mA	520	140	240

Gearbox Characteristics

Gearbox stages	Unit	2	4	4	4	--	--	--	--
Reduction ratio	--	63	115.130.150.180	210.250.260	300.350	--	--	--	--
Max. rated torque	mNm	60	70	80	100	--	--	--	--
Max. momentary torque	mNm	180	210	240	300	--	--	--	--
Length L	mm	12	12	12	12	--	--	--	--
Shell material	--	Metal	-	-	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-	-	-

Drawings



13mm Precision DC Spur Gear Motor

C16**...13MS...

C16...13MS... Spur Gear Motor Series** sets the standard for compact, high-performance motion control in critical applications. Its 13mm metal spur gearbox integrates advanced **metal CNC gear processing** technology with a rugged metal housing to ensure durability and reliable operation.



- **Versatility:** Available in 2 to 5 gearbox stages, offering reduction ratios from 3 up to 360, enabling precise speed and torque customization for varied application needs.
- **Performance:** Delivers **maximum rated torque** from 20 mNm to 80 mNm and **momentary peak torque** up to 240 mNm. Compact length (11-12 mm) allows for integration in space-constrained designs.
- **Build Quality:** Precision-machined metal gears and robust metal shell support high reliability, low backlash, and consistent power transmission.
- **Customization:** Options include bespoke lead wire lengths and special coil winding configurations, supporting easy integration into customized assemblies.

Typical Applications:

- Medical equipment (infusion pumps, micro-dosing devices)
- Scientific instruments (analytical, optical, or test equipment)
- Industrial automation (precision adjustment or low-power actuation)

This series is ideally suited for engineers and OEMs seeking reliable, high-precision miniature geared motors where space, performance, and customization are essential.



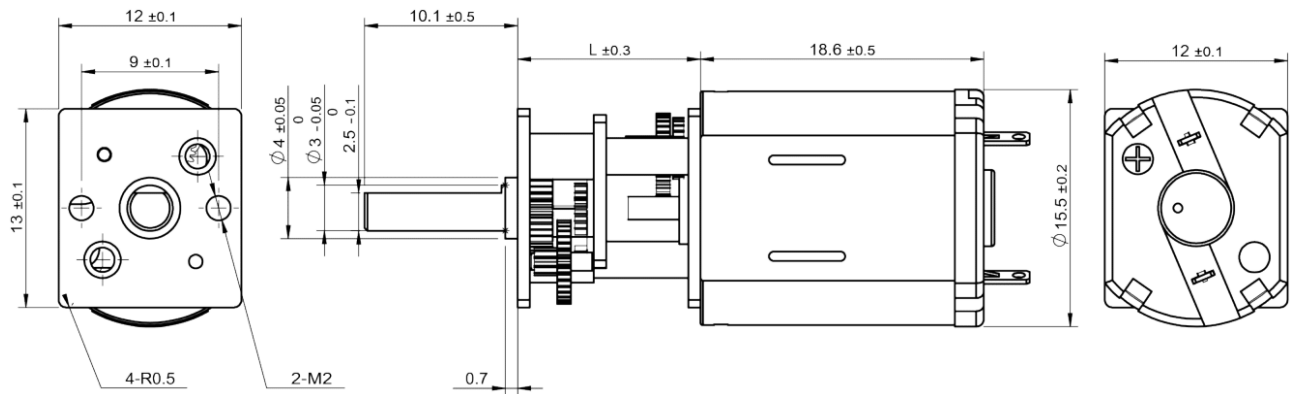
<https://www.kocomotion.de/produkt/c16-13ms/>

Motor Characteristics	Unit	C1627F34AH-0055	C1620F13-0032
Rated voltage	V	6.0	6.0
Max. output power	W	0.85	0.73
Max. efficiency	%	51.9	50
Back-EMF constant	mV/rpm	0.64	0.47
Torque constant	mNm/A	6.28	4.47
Speed/torque gradient	rpm/mNm	2293	4950
Rotor inertia	gcm ²	0.5	0.5
Weight	g	16.7	11
Operating temperature	°C	-10~+80	-10~+80 °C
Outer diameter	mm	15.5 +/- 0.2	15.5 +/- 0.2
Motor length	mm	18.6 +/- 0.5	18.6 +/- 0.5
Terminal resistance	Ω	8.8	10.3
No-load speed	rpm	8600	11700
No-load current	mA	55	51
Stall torque	mNm	3.75	2.36
Stall current	mA	652	580
Nominal torque	mNm	0.79	2.1
Nominal speed	rpm	6800	1305
Nominal current	mA	180	520

Gearbox Characteristics

Gearbox stages	Unit	2	4	4	4	5	5	5	--
Reduction ratio	--	3.7.10	16.17.20.30.35	50.63	70.86	115.150	210.250	360	--
Max. rated torque	mNm	20	30	40	50	60	70	80	--
Max. momentary torque	mNm	60	90	120	150	180	210	240	--
Length L	mm	11	11	11	11	11	11	12	--
Shell material	--	Metal	-	-	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-	-	-

Drawings



10mm Planetary Gearbox Series

10**...10*P... /
B10**...10*P... /
C10**...10*P...



The 10mm Planetary Gearbox Series offers a compact and robust solution for demanding motion control tasks. Built with precision metal injection molded gears and a durable metal housing, this series ensures reliable performance in environments where space and durability are critical.

• Technical Specifications:

- Gearbox stages: 1 to 6
- Reduction ratios: 4:1, 16:1, 64:1, 256:1, 1024:1, 4096:1
- Max. rated torque: 5-60 mNm
- Max. momentary torque: up to 180 mNm
- Length: 11.7-27.2 mm
- Shell material: Metal
- Gear processing: Metal injection technology

• Application Areas:

- Medical equipment (e.g., infusion pumps, diagnostic instruments)
- Scientific instruments requiring precision actuation
- Industrial automation, compact drives, and robotics

• Key Advantages:

- Highly compact yet delivers high output torque
- Wide range of gear ratios with multi-stage design
- Long service life due to metal construction
- Customizable options—shaft length and special coils for flexible integration

This gearbox series is ideal for precision-driven applications where footprint and performance are critical, providing engineers with robust, scalable motion solutions.



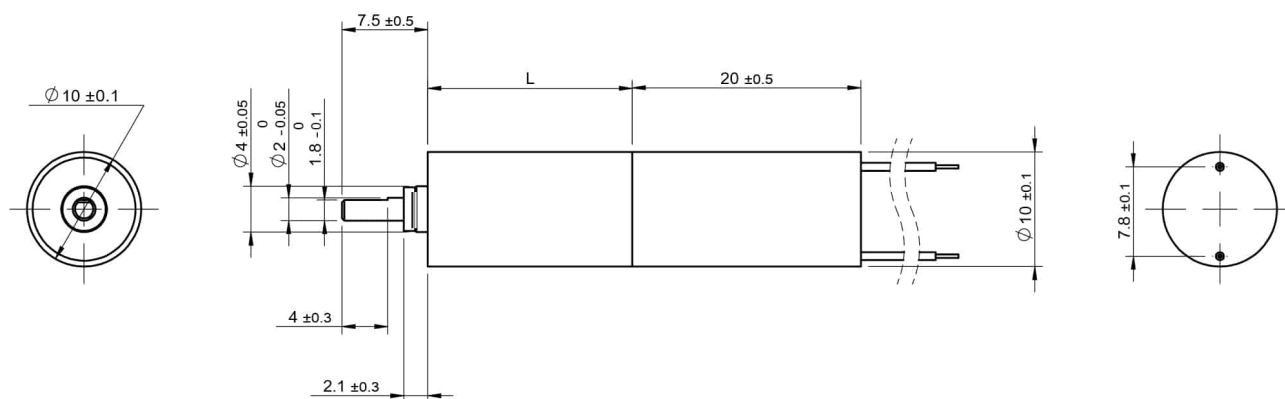
<https://www.kocomotion.de/produkt/10-10p-b10-10p-c10-10p/>

Motor Specifications	Unit	1020N5M52-115-3.0	B1020N03-85-3.7	C1012F43-0113-3.0
Rated voltage	V	3.0	3.7	3.0
Max. output power	W	0.57	0.4	0.17
Max. efficiency	%	74	43	45
Back-EMF constant	mV/rpm	0.26	0.38	0.21
Torque constant	mNm/A	2.44	3.67	1.94
Speed/torque gradient	rpm/mNm	6088	4474	25800
Rotor inertia	gcm ²	0.07	0.06	0.04
Weight	g	6.1	6.8	3
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	10 +/- 0.1	10 +/- 0.1	10 +/- 0.1
Motor length	mm	20 +/- 0.5	20 +/- 0.5	20 +/- 0.5
Terminal resistance	Ω	3.8	6.2	11.1
No-load speed	rpm	11500	8500	12900
No-load current	mA	16	70	30
Stall torque	mNm	1.89	1.9	0.5
Stall current	mA	790	600	288
Load torque	mNm	0.5	1	0.17
Load speed	rpm	8460	4300	8400
Load current	mA	220	350	120

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	16	64	256	1024	4096
Max. rated torque	mNm	5	10	30	40	50	60
Max. momentary torque	mNm	15	30	90	120	150	180
Length L	mm	11.7	14.8	17.9	21	24.1	27.2
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal injection	-	-	-	-	-

Drawings



12mm Planetary Gearbox Series

12**...12*P... /
B12**...12*P...

The **12mm planetary gearbox series** is engineered for demanding applications requiring reliable torque transmission and compact dimensions. Leveraging advanced metal CNC gear processing and robust metal shells, this gearbox family offers superior mechanical precision and long service life.



- **Stage Configurations:** Available with 1 to 6 gearbox stages, supporting a broad range of reduction ratios (4:1, 16:1, 64:1, 256:1, 1024:1, and 4096:1).
- **Output Performance:** Maximum rated torque up to 200 mNm and momentary peak torques up to 600 mNm, ensuring reliable operation in high-load scenarios.
- **Construction:** All-metal housing and precision-machined gears deliver enhanced durability and smooth motion control, even under continuous operation.
- **Compact Design:** Gearbox lengths range from 12.8 mm to 29.3 mm, permitting integration in space-constrained assemblies typical in medical devices and miniature automation systems.
- **Customizable Options:** Shaft length adjustments and special coil configurations available to address diverse application requirements.

Designed for use in medical equipment, scientific instruments, and industrial machinery, the 12mm gearbox series offers unparalleled precision, reliability, and flexibility for OEM integrations. Its scalable torque capabilities make it ideal for drive systems demanding both high performance and miniaturization.



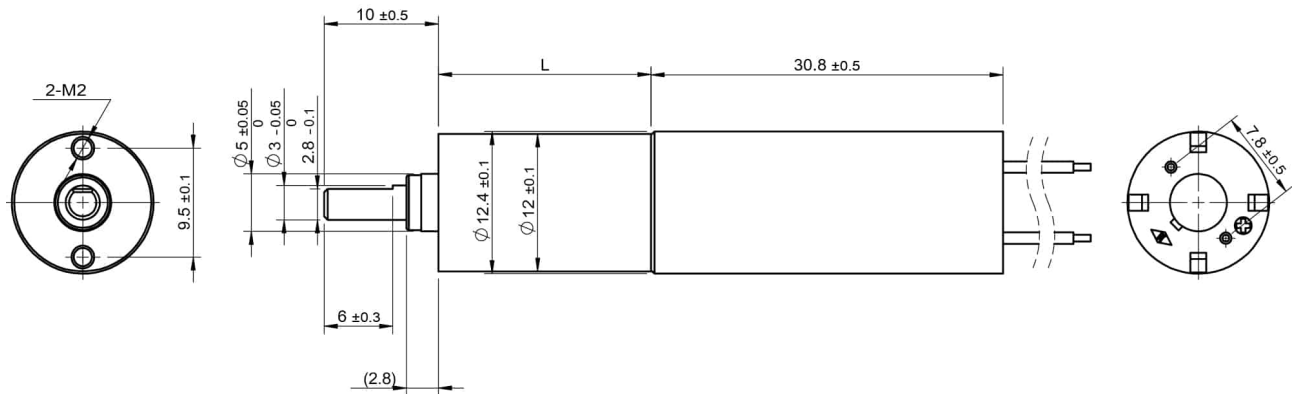
<https://www.kocomotion.de/produkt/12-12p-b12-12p/>

Motor Specifications	Unit	1230N5M15-113-12.0	1230N7M**-100-6.0	B1220N2B01-175-5.0
Rated voltage	V	12.0	6.0	5.0
Max. output power	W	3.36	3.03	2.5
Max. efficiency	%	79	79	51
Back-EMF constant	mV/rpm	1	0.6	0.3
Torque constant	mNm/A	10	5.7	2.5
Speed/torque gradient	rpm/mNm	990	860	3030
Rotor inertia	gcm ²	0.25	0.25	0.25
Weight	g	17.7	17.7	9.5
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	12.4 +/- 0.1	12.4 +/- 0.1	12.4 +/- 0.1
Motor length	mm	30.8 +/- 0.5	30.8 +/- 0.5	30.8 +/- 0.5
Terminal resistance	Ω	10.4	2.9	2
No-load speed	rpm	11300	10000	17500
No-load current	mA	15	25	180
Stall torque	mNm	11.4	11.6	5.8
Stall current	mA	1150	2070	2500
Load torque	mNm	3	2	1.4
Load speed	rpm	8320	8270	11600
Load current	mA	310	380	780

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	16	64	256	1024	4096
Max. rated torque	mNm	80	120	160	180	200	200
Max. momentary torque	mNm	240	360	180	540	600	600
Length L	mm	12.8	16.1	19.4	22.7	26	29.3
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



16mm Planetary Gearbox Series

16**...16*P... /
B16**...16*P... /
C16**...16*P...



The **16mm planetary gearbox series** is engineered to provide exceptional torque handling and compact integration for demanding applications. Designed with a robust metal shell and precision-manufactured powder metallurgy gears, this series offers outstanding durability and smooth operation, even in high-load scenarios.

- **Versatile Staging:** Supports 1 to 6 gearbox stages, allowing reduction ratios ranging from 4:1 up to 3027:1 for optimal adaptation to diverse speed and torque requirements.
- **High Torque Capacity:** Delivers max. rated torque values from 80 to 240 mNm, and max. momentary torque from 240 to 720 mNm, ensuring high reliability under peak loads.
- **Precision Construction:** Metal housing and powder metallurgy gears contribute to long service life and consistent transmission accuracy.
- **Compact Design:** Overall lengths from 15.05 mm to 29.65 mm suit space-constrained installations.
- **Customizable Options:** Shaft length and special coil configurations available for specific integration needs.

Ideally suited for **medical equipment**, **scientific instruments**, and compact **industrial automation**, this gearbox series enables precise, reliable motion control and robust performance in mission-critical environments. Its modular architecture offers unparalleled flexibility for OEMs and system designers.



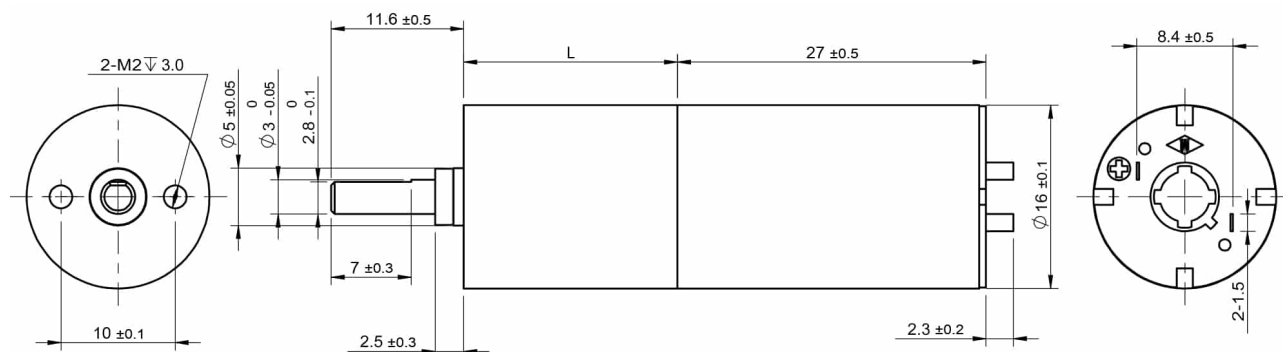
<https://www.kocomotion.de/produkt/16-16p-b16-16p-c16-16p/>

Motor Specifications	Unit	1627N5M21-113-12.0	B1635N2B01-450-12.0	C1627F34AH-0055-6.0
Rated voltage	V	12.0	12.0	6.0
Max. output power	W	3	100	0.85
Max. efficiency	%	79	81	51.9
Back-EMF constant	mV/rpm	1	0.3	0.64
Torque constant	mNm/A	10	2.5	6.28
Speed/torque gradient	rpm/mNm	1100	530	2293
Rotor inertia	gcm ²	0.7	1.5	0.6
Weight	g	25	40	16.7
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	16 +/- 0.1	16 +/- 0.1	16 +/- 0.1
Motor length	mm	27 +/- 0.5	27 +/- 0.5	27 +/- 0.5
Terminal resistance	Ω	11.8	0.35	8.8
No-load speed	rpm	11300	45000	8600
No-load current	A	0.013	0.35	0.055
Stall torque	mNm	10.1	85	3.75
Stall current	A	1.02	34	0.65
Load torque	mNm	1.5	1.5	0.79
Load speed	rpm	9620	43800	6800
Load current	A	0.16	0.96	0.18

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	14~29	53~157	231~690	1014~3027	--
Max. rated torque	mNm	80	120	160	200	240	--
Max. momentary torque	mNm	240	360	480	600	720	--
Length L	mm	15.05	18.7	22.35	26	29.65	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Powder metallurgy	-	-	-	-	-

Drawings



20mm Planetary Gearbox Series

19**...20*P... /
B20**...20*P... /
C20**...20*P...



KOCO 20mm Planetary Gearbox Series provides advanced motion control solutions for precision-driven applications. Designed with a durable metal shell and high-precision plastic injection gears, this series delivers dependable performance and extended operational life in compact systems.

- **Flexible Multi-stage Design:** Available in 1 to 6 gearbox stages, supporting a wide range of reduction ratios (6:1, 36:1, 216:1, 256:1) for optimal torque-speed matching.
- **Performance Specifications:** Rated torque options from 50 to 600 mNm (momentary torque up to 1200 mNm) accommodate a variety of load requirements. Gearbox lengths range from 17.6 mm to 33.5 mm, ensuring space-efficient installation in space-constrained assemblies.
- **Quality Construction:** Metal housing maximizes reliability and mechanical strength, while precision-engineered plastic gears ensure smooth, low-noise operation.
- **Customization:** Options for shaft length and specialized coil configurations enable seamless integration with different drive requirements.

Applications: Ideal for use in medical equipment, scientific instruments, and compact industrial automation systems where accuracy, reliability, and quiet operation are critical. This gearbox series is specifically designed for OEMs and engineers seeking a compact yet high-torque gearbox platform adaptable to exacting motion control needs.



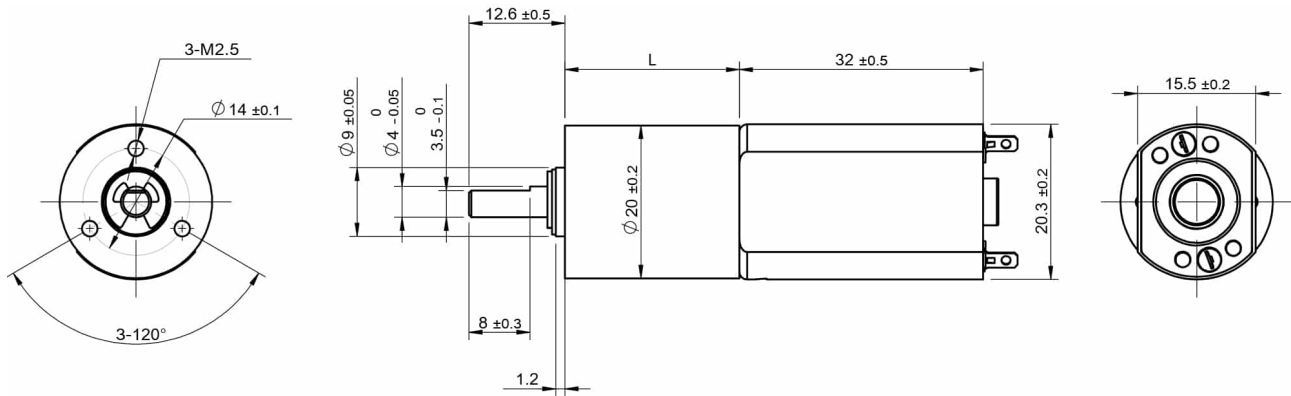
<https://www.kocomotion.de/produkt/19-20p-b20-20p-c20-20p/>

Motor Specifications	Unit	1925N9M02-80-12.0	B2040NH2B21-158-24.0	C2032F41-0141-6.0
Rated voltage	V	12.0	24.0	6.0
Max. output power	W	3.7	8.67	2.1
Max. efficiency	%	79	60	57
Back-EMF constant	mV/rpm	1.5	1.44	0.74
Torque constant	mNm/A	14.2	13.7	7.06
Speed/torque gradient	rpm/mNm	500	754.3	724
Rotor inertia	gcm ²	0.6	2	--
Weight	g	32	55	33
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	20.3 +/- 0.2	20.3 +/- 0.2	20.3 +/- 0.2
Motor length	mm	32 +/- 0.5	32 +/- 0.5	32 +/- 0.5
Terminal resistance	Ω	9.6	15	3.8
No-load speed	rpm	8000	15800	7400
No-load current	A	0.015	0.08	0.1
Stall torque	mNm	17.5	21	10.5
Stall current	A	1.25	1.6	1.56
Load torque	mNm	4	4	1.8
Load speed	rpm	6170	12800	6300
Load current	A	0.3	0.37	0.35

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	6	36	216	256	--	--
Max. rated torque	mNm	50	150	300	600	--	--
Max. momentary torque	mNm	100	300	600	1200	--	--
Length L	mm	17.6	22.9	28.2	33.5	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Plastic injection	-	-	-	-	-

Drawings



24mm Planetary Gearbox Series

24**...24*P... /
B20**...24*P... /
C24**...24*P...



24mm Planetary Gearbox Series offers high-precision, high-torque transmission in a compact form factor, making it an excellent choice for demanding motion control requirements in industrial and medical environments.

- **Technical Specifications:**

- Gearbox stages: 1 to 6 for flexible reduction setups
- Reduction ratios: Up to 256:1 for high-output torque applications
- Max. rated torque: Up to 1500 mNm, with momentary peak torque reaching 3000 mNm
- Shell material: Durable metal housing for enhanced mechanical stability
- Gear processing: Advanced plastic injection molding for precision and noise reduction
- Dimensions: Lengths ranging from 24.5 mm to 38.65 mm depending on configuration

- **Applications:**

- Medical equipment: Reliable motion control for imaging, diagnostics, and device automation
- Scientific instruments: Precision actuation for laboratory and analytical systems
- Industrial equipment: Robust performance for factory automation, robotics, and compact machinery

- **Benefits & Options:**

- High power density and efficiency in a small footprint
- Customizable features including shaft length and special coil options
- Consistent quality and long operational life for critical applications

This series ensures reliability and adaptability, optimizing performance for diverse automated and precision-driven environments.



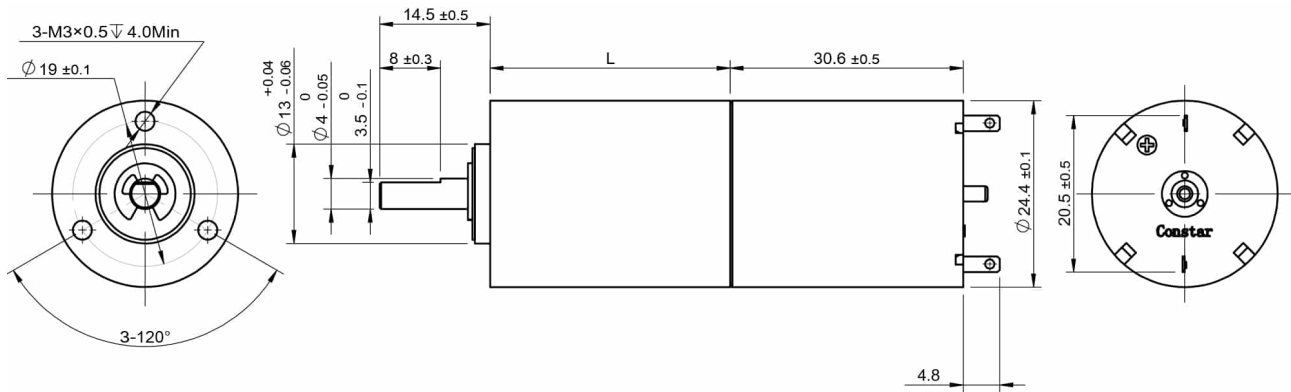
<https://www.kocomotion.de/produkt/24-24p-b20-24p-c24-24p/>

Motor Specifications	Unit	2433N5M2B01-76-4.5	B2040NH2B21-158-24.0	C2430R43-0010-12.0
Rated voltage	V	4.5	24.0	12.0
Max. output power	W	10.9	8.67	2.59
Max. efficiency	%	89	60	62.5
Back-EMF constant	mV/rpm	0.6	1.44	1.89
Torque constant	mNm/A	5.6	13.7	17.07
Speed/torque gradient	rpm/mNm	140	754.3	382
Rotor inertia	gcm ²	2.2	2	--
Weight	g	66	55	14.5
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	24.4 +/- 0.1	24.4 +/- 0.1	24.4 +/- 0.1
Motor length	mm	30.6 +/- 0.5	30.6 +/- 0.5	30.6 +/- 0.5
Terminal resistance	Ω	0.46	15	11
No-load speed	rpm	7600	15800	6150
No-load current	A	0.03	0.08	0.035
Stall torque	mNm	55	21	16.1
Stall current	A	9.78	1.6	9.78
Load torque	mNm	10	4	1.96
Load speed	rpm	6220	12800	5400
Load current	A	1.8	0.37	0.15

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	--	36	216	256	--	--
Max. rated torque	mNm	--	500	1000	1500	--	--
Max. momentary torque	mNm	--	1000	2000	3000	--	--
Length L	mm	--	24.5	31.5	38.65	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Plastic injection	-	-	-	-	-

Drawings



28mm Planetary Gearbox Series

30**...28*P... /
B29**...28*P... /
C28**...28*P...



28mm Planetary Gearbox Series delivers robust, precise motion control in a compact envelope, specifically developed for demanding industrial, scientific, and medical applications.

- **Gearbox Stages:** Available in configurations from 1 to 6 stages, enabling a wide range of reduction ratios (4~939) for versatile speed and torque management.
- **Rated Torque:** Supports maximum rated torque values from 200 mNm up to 1,000 mNm, with momentary peaks reaching 3,000 mNm, making it suitable for high-load intermittent operations.
- **Construction:** The gearbox features a metal shell for durability and precision polymer gears (plastic injection) for quiet operation and enhanced efficiency.
- **Compact Design:** Lengths range from 24.5 mm to 43.7 mm, optimizing the gearbox for space-constrained environments without compromising performance.
- **Application Flexibility:** Ideal for integration in medical devices, laboratory automation, analytical instrumentation, and industrial automation, where reliable torque delivery and smooth rotation are essential.
- **Customization:** Optional configurations include various shaft lengths and special coils, accommodating unique project demands and custom motor-gearbox assemblies.

With its combination of compact size, multiple reduction ratios, and robust construction, the 28mm planetary gearbox series offers system designers a versatile and reliable solution for precision motion requirements across a wide range of technical fields.



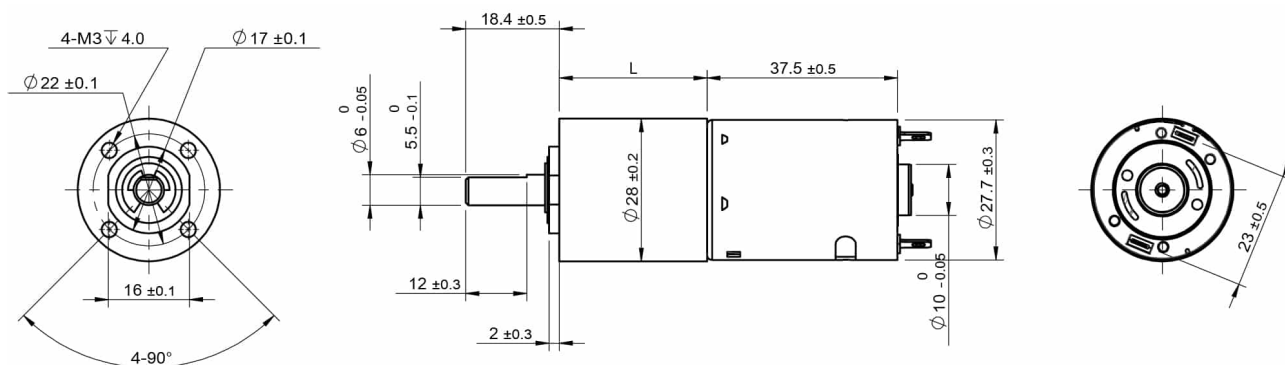
<https://www.kocomotion.de/produkt/30-28p-b29-28p-c28-28p/>

Motor Specifications	Unit	3068N9C2B10-100-24.0	B2950NH2B01-130-24.0	C2838R41-0007-9.0
Rated voltage	V	24.0	24.0	9.0
Max. output power	W	88.7	105	19.03
Max. efficiency	%	83	75	75
Back-EMF constant	mV/rpm	2.4	1.8	0.68
Torque constant	mNm/A	22.7	17.3	6.94
Speed/torque gradient	rpm/mNm	29.6	41.9	240
Rotor inertia	gcm ²	33	5	--
Weight	g	245	140	70
Operating temperature	°C	-10~+80	-10~+80	-10~+80
Outer diameter	mm	27.7 +/- 0.3	27.7 +/- 0.3	27.7 +/- 0.3
Motor length	mm	28 +/- 0.2	28 +/- 0.2	28 +/- 0.2
Terminal resistance	Ω	1.6	1.32	1.1
No-load speed	rpm	10000	13000	13200
No-load current	A	0.12	0.3	0.25
Stall torque	mNm	338.3	310	55
Stall current	A	15	18.2	18.2
Load torque	mNm	40	28	8.33
Load speed	rpm	8820	11800	11200
Load current	A	1.88	1.9	1.45

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4~5	14~35	51~139	189~939	--	--
Max. rated torque	mNm	200	300	600	1000	--	--
Max. momentary torque	mNm	600	900	1800	3000	--	--
Length L	mm	24.5	30.9	37.3	43.7	--	--
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Plastic injection	-	-	-	-	-

Drawings



8mm Planetary Gearbox Series

L0830...08PP...

L0830...08PP... 8mm Planetary Gearbox Series offers high-precision gear reduction in an ultra-compact package, engineered for demanding applications where optimal torque and reliability are essential.



- **Compact 8mm Diameter:** Enables integration where space is at a premium without compromising performance.
- **High Efficiency and Low Backlash:** Planetary gearing ensures smooth, consistent torque delivery and precise motion control.
- **Versatile Customization:** Available with special coil configurations and customized lead wire lengths to suit varied design and installation requirements.

Typical Applications Include:

- Precision medical devices and diagnostic equipment
- Electronic security systems and intelligent locking mechanisms
- Audio/visual handling systems
- Personal healthcare apparatus such as portable pumps or dispensers
- High-end hobby and model products requiring reliable, compact actuation

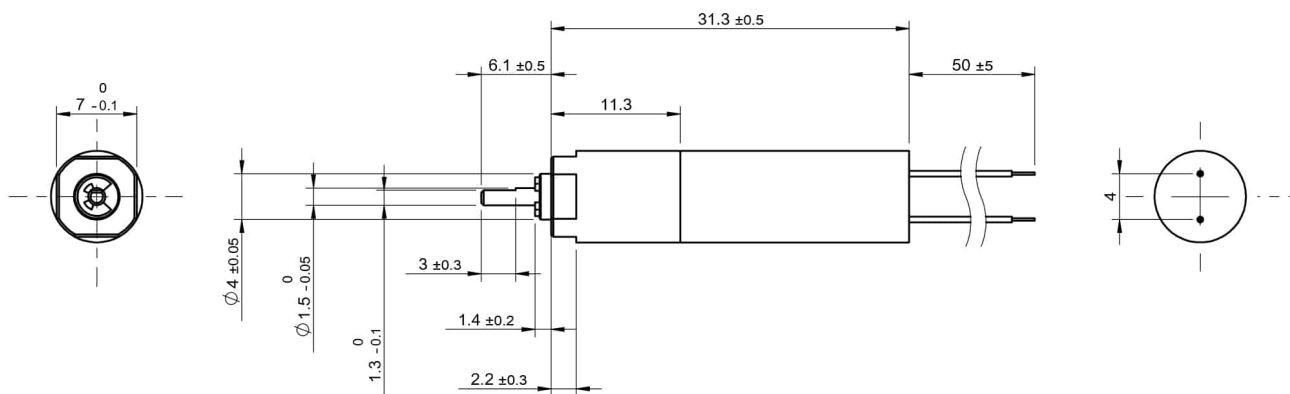
Designed to meet OEM demands for compactness and accuracy, the L0830...08PP... series supports advanced motion control in critical environments. Its planetary gearing delivers superior load distribution, extending product service life and reliability, making it a preferred solution for cutting-edge miniature automation projects.



<https://www.kocomotion.de/produkt/l0830-08pp/>

Motor Specifications	Unit	L0831-620-3.0-08PP28-0017	L0830-92-3.5-08PP152-0080
Rated voltage	V	3.0	3.5
Weight		5.07	5.07
Operating temperature	°C	-10~+70	-10~+70
Outer diameter	mm	8	8
Motor length	mm	31.3 +/- 0.5	31.3 +/- 0.5
Terminal resistance	Ω	1.75	8.5
No-load speed	rpm	620	92
No-load current	mA	150	50
Max torque	mNm	45	76
Load torque	mNm	10	10
Load speed	rpm	480	82
Load current	mA	560	100
Reduction ratio		1/28	1/152

Drawings



16mm Planetary Gearbox Series

L1638...16PP... / C1642...16PP...

The **L1638...16PP... / C1642...16PP... 16mm Planetary Gearbox Series** provides high-precision, compact drive solutions suitable for demanding environments where consistent performance is essential. Designed for integration with advanced motion control systems, this series stands out due to its versatility and robust engineering.

- **16mm diameter** planetary gearbox for minimal footprint and flexible installation
- **Precision gear train** ensures reliable torque transmission and quiet operation
- **Customizable options** including special coils and lead wire lengths to suit application-specific needs

These gearboxes are engineered for use in a wide range of applications, such as:

- Medical equipment requiring compact, accurate actuators
- Security systems and electronic locks demanding long-term reliability
- High-fidelity audio/visual products and personal healthcare devices where smooth, low-noise performance is vital
- High-end hobby products requiring precise, durable gearing solutions

Key benefits:

- Long service life with minimal maintenance requirements
- Supports customized configurations for specific project requirements
- Excellent for OEM designs due to compact form factor and installation versatility

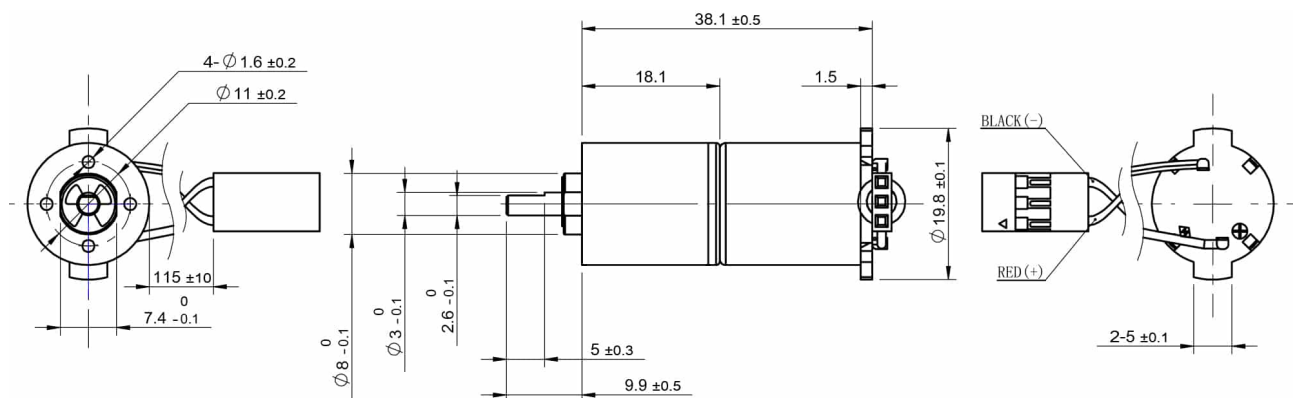
Choose the L1638...16PP... / C1642...16PP... series for advanced automation and precision control in compact applications.



<https://www.kocomotion.de/produkt/l1638-16pp-c1642-16pp/>

Motor Specifications	Unit	L1638-56-6.0-16PP144-0243	C1642-1025-3.0-16PP16-023
Rated voltage	V	6.0	3.0
Weight		24.7	24.7
Operating temperature	°C	-10~+70	-10~+70
Outer diameter	mm	19.8 +/- 0.1	19.8 +/- 0.1
Motor length	mm	38.1 +/- 0.1	38.1 +/- 0.1
Terminal resistance	Ω	8.7	3
No-load speed	rpm	56	1025
No-load current	mA	40	160
Max torque	mNm	500	50
Load torque	mNm	150	15
Load speed	rpm	40	720
Load current	mA	200	1000
Reduction ratio		1/144	1/16

Drawings



8mm Coreless DC Servo Motors

08**M5...M...

08**M5...M... Series 8mm Coreless DC Servo Motors

combine outstanding power density and advanced control in a micro-sized package, making them ideal for highly demanding and space-critical precision applications.



• Technical Specifications:

- Motor diameter: 8 mm; length: 6.7 mm (motor body)
- Max speed: up to 30,000 rpm
- Encoder integration: 2 or 3 channels, TTL output, 5V supply
- Resolution: 16, 32, 64, 256, or 512 counts per turn

• Gearbox Options:

- CNC-machined all-metal gearboxes, 1-6 stages
- Reduction ratios: 4:1 to 4096:1
- Rated torque: 5-40 mNm, with momentary peaks to 120 mNm
- Gearbox lengths: 9.6-23.1 mm

• Custom Options: Shaft lengths and coil windings tailored to application requirements.

• Typical Applications:

- Medical (infusion pumps, surgical tools)
- Robotics (micro-actuators, compact grippers)
- Precision instrumentation (optics, micro-positioning stages)

Benefits: The innovative coreless motor design yields exceptionally low inertia and rapid acceleration, while high-resolution encoder feedback ensures precision and repeatability. Durable CNC gear construction and advanced customization options enable robust, high-performance operation in the most space-limited automated systems.



<https://www.kocomotion.de/produkt/08m5-m-2/>

Motor Specifications	Unit	0816N5M10-90-3.0	0816N5M27-165-6.0	0816N5M31-120-3.0
Rated voltage	V	3.0	3.0	3.0
Back-EMF constant	mV/rpm	0.32	0.36	0.23
Torque constant	mNm/A	3.06	3.39	2.22
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	8 +/- 0.1	8 +/- 0.1	8 +/- 0.1
Motor length	mm	15.6	15.6	15.6
Terminal resistance	Ω	14.2	20.6	8.5
No-load speed	rpm	9000	16000	12000
No-load current	mA	8	15	25
Stall torque	mNm	0.6	0.94	0.73
Stall current	mA	210	290	350
Nominal torque	mNm	0.3	0.42	0.15
Nominal speed	rpm	5490	8800	9500
Nominal current	mA	88	140	90

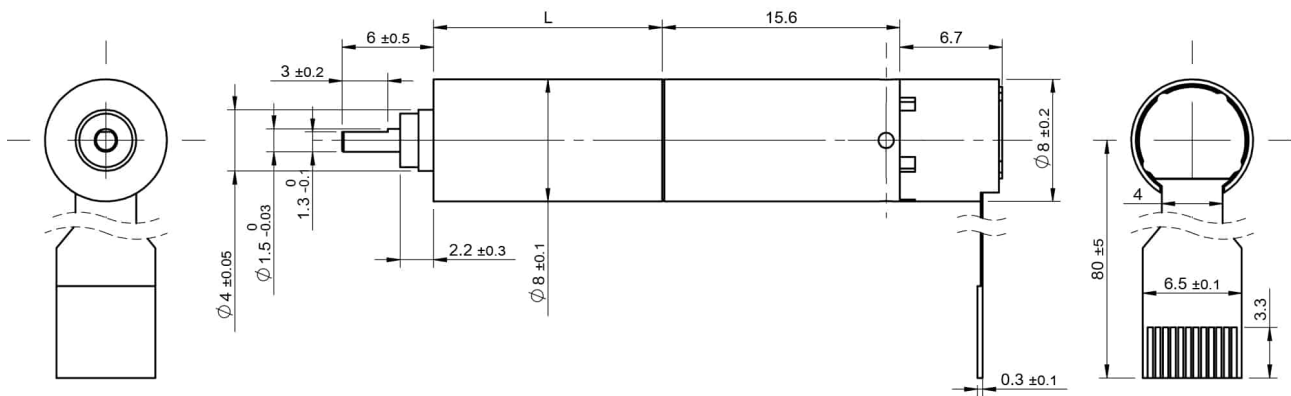
Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16.32.64.256.512	16.32.64.256.512
Supply voltage	V	5.0	5.0
Max. speed	rpm	30000	30000
Phase shift	°e	90±45	90±45
Output signal		TTL	TTL
Diameter	mm	8	8
Length L	mm	6.7	6.7

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	16	64	256	1024	4096
Max. rated torque	mNm	5	10	20	30	35	40
Max. momentary torque	mNm	15	30	60	90	105	120
Length L	mm	9.6	12.3	15	17.7	20.4	23.1
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



10mm Coreless DC Servo Motor

10**M7...M...

The **10**M7...M...** series micro DC servo motors are engineered for applications that demand precise motion control in an ultra-compact footprint. Utilizing a coreless brushed design, these 10mm motors deliver fast dynamic response, superior efficiency, and minimal cogging effects—making them the preferred choice for high-precision applications.



- **Key Specifications:**

- Voltage options: 6.0 V and 12.0 V
- High no-load speeds up to 12,700 rpm
- Nominal torque range: 0.88–2.1 mNm
- Low nominal currents: 120–430 mA
- Operating temperature: -20 °C to +85 °C

- **Encoder & Gearbox Options:**

- Incremental encoders: up to 3 channels, 512 cpt, TTL outputs, 30,000 rpm max
- Precision gearboxes: Metal CNC gears, up to 6 stages, 4096:1 reduction, and max rated torque up to 60 mNm

- **Customization:** Shaft length, specialized coils, and lead wire length adjustments to suit bespoke requirements.

- **Applications:** Ideally suited for **medical equipment**, **robotics**, and **precision instruments** where space constraint, reliability, and highly responsive actuation are essential.

Benefit from robust design, flexibility, and high performance in your critical micro-motion applications with the 10mm DC coreless brushed servo motor series.



<https://www.kocomotion.de/produkt/10m7-m/>

Motor Specifications	Unit	1026N7M03-125-6.0	1026N7M01-125-12.0	1026N7M04-130-12.0
Rated voltage	V	6.0	12.0	12.0
Back-EMF constant	mV/rpm	0.53	1.07	0.91
Torque constant	mNm/A	5.05	10.19	8.69
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	10 +/- 0.2	10 +/- 0.2	10 +/- 0.2
Motor length	mm	25.7	25.7	25.7
Terminal resistance	Ω	6	23.7	29.6
No-load speed	rpm	11000	11000	12700
No-load current	mA	30	15	15
Stall torque	mNm	4.9	5	3.39
Stall current	mA	1000	510	405
Nominal torque	mNm	2	2.1	0.88
Nominal speed	rpm	6500	6400	9400
Nominal current	mA	430	220	120

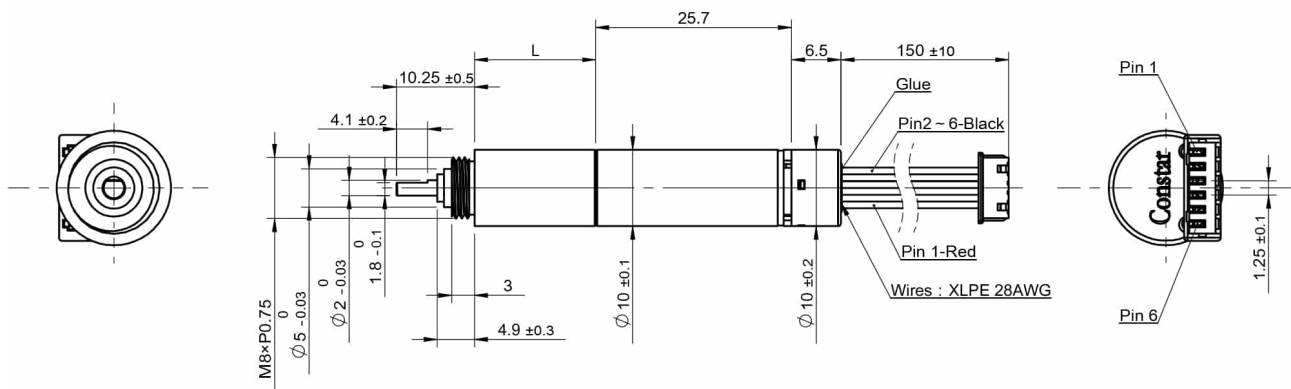
Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	12.16.64.256.512	12.16.64.256.512
Supply voltage	V	5.0	5.0
Max. speed	rpm	30000	30000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL
Diameter	mm	10	10
Length L	mm	6.5	6.5

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	16	64	256	1024	4096
Max. rated torque	mNm	5	10	30	40	50	60
Max. momentary torque	mNm	15	30	90	120	150	180
Length L	mm	9.7	12.8	15.9	19	22.1	25.2
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



10mm Micro DC Servo Motor

10**NH...M...

10**NH...M... Series: Micro DC Coreless Brushless Servo Motors

Engineered for high-precision requirements, the 10mm micro BLDC servo motor family delivers unmatched speed and torque performance in compact form factors. This series is built with a coreless, brushless configuration to provide high efficiency, low noise operation, and extended service life—critical for advanced automation and instrumentation.



- **Key Specifications:** Nominal voltage: 7.4 V No-load speed: 38,200 rpm; Nominal speed: 30,750 rpm Nominal torque: 1.7 mNm; Stall torque: 8.7 mNm Torque constant: 1.75 mNm/A Operating temperature: -20°C to +85°C
- Nominal voltage: 7.4 V
- No-load speed: 38,200 rpm; Nominal speed: 30,750 rpm
- Nominal torque: 1.7 mNm; Stall torque: 8.7 mNm
- Torque constant: 1.75 mNm/A
- Operating temperature: -20°C to +85°C
- **Encoder & Gearbox Options:** Encoders with 2 or 3 channels, TTL output, up to 512 counts/turn Integrated metal CNC gearboxes: 1-6 stages, ratios up to 4096:1, rated torque up to 60 mNm
- Encoders with 2 or 3 channels, TTL output, up to 512 counts/turn
- Integrated metal CNC gearboxes: 1-6 stages, ratios up to 4096:1, rated torque up to 60 mNm
- **Customizable Features:** Shaft length and special coil options available for application-specific requirements.
- **Primary Applications:** Designed for precise control in medical equipment, robotics, and precision instruments, where compact size and reliability are paramount.

Choose the 10**NH...M... series for robust, high-speed micro motion solutions with extended adaptability and reliable performance in demanding environments.



<https://www.kocomotion.de/produkt/10nh-m/>

Motor Specifications	Unit	B1023NH2B05-382-7.4
Rated voltage	V	7.4
Back-EMF constant	mV/rpm	0.18
Torque constant	mNm/A	1.75
Operating temperature	°C	-20~+85
Outer diameter	mm	10 +/- 0.1
Motor length	mm	30 +/- 0.5
Terminal resistance	Ω	1.4
No-load speed	rpm	38200
No-load current	A	0.3
Stall torque	mNm	8.7
Stall current	A	5.3
Nominal torque	mNm	1.7
Nominal speed	rpm	30750
Nominal current	A	1.27

Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	12.16.64.256.512	12.16.64.256.512
Supply voltage	V	5.0	5.0
Max. speed	rpm	40000	40000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL

Gearbox Characteristics

12mm Coreless DC Servo Motors

12**M7...M...

12mm Micro DC Coreless Brushed Servo Motor Series

- **High-Performance Coreless Design:** Delivers superior speed and efficiency with voltages of 4.5 V, 6.0 V, and 12.0 V available. No-load speeds reach up to 16,200 rpm, supporting rapid positioning tasks.
- **Precision Motion Control:** Stall torques up to 5.98 mNm and precise nominal torque/speed characteristics ensure optimal performance in space-constrained applications such as medical equipment, robotics, and precision instruments.
- **Flexible Integration:** Optional metal gearboxes offer multiple reduction ratios (4:1 to 4096:1) and torque capacities up to 200 mNm, providing tailored speed-torque profiles. Encoders support up to 512 counts per turn, TTL outputs, and a maximum speed of 30,000 rpm for accurate feedback and closed-loop control.
- **Robust & Customizable:** Operates reliably from -20°C to +85°C. Options include custom shaft lengths, lead wire lengths, and special coil configurations for application-specific requirements.



Applications: Optimized for medical devices, robotics actuators, and precision instrumentation where compact size, efficiency, and accurate control are critical. Combining high torque density, flexible configuration, and coreless technology, this servo motor series ensures competitive performance in demanding motion control environments.



<https://www.kocomotion.de/produkt/12m7-m-2/>

Motor Specifications	Unit	1230N7M04-48-4.5	1220N7M64-140-6.0	1220N7M65-162-12.0
Rated voltage	V	4.5	6.0	12.0
Back-EMF constant	mV/rpm	0.91	0.41	0.71
Torque constant	mNm/A	8.72	3.94	6.81
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	12 +/- 0.1	12 +/- 0.1	12 +/- 0.1
Motor length	mm	20.3	20.3	20.3
Terminal resistance	Ω	8.5	3.8	22
No-load speed	rpm	4800	14000	16200
No-load current	mA	15	60	20
Stall torque	mNm	4.48	5.98	3.58
Stall current	mA	530	1580	550
Nominal torque	mNm	2	2.78	2.45
Nominal speed	rpm	2760	7500	5200
Nominal current	mA	235	770	380

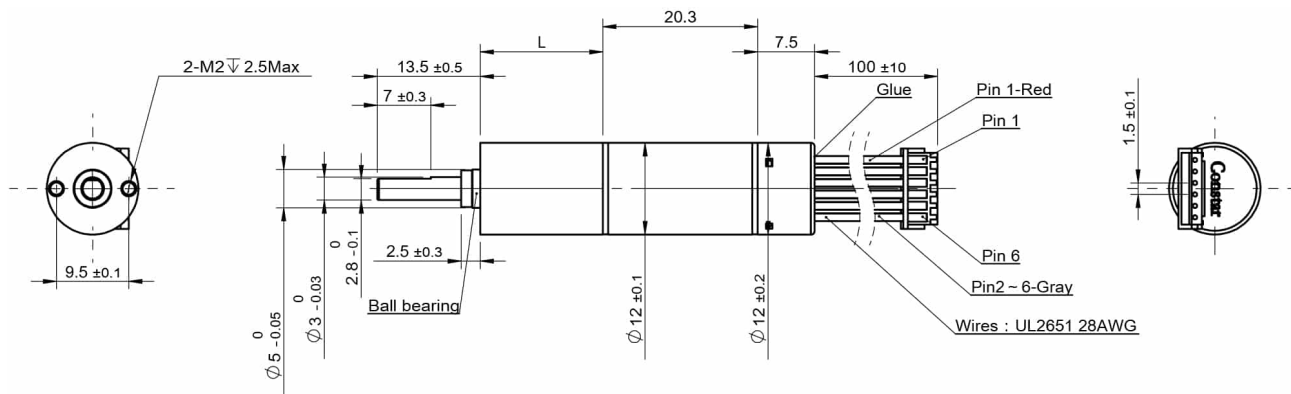
Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16.32.64.256.512	16.32.64.256.512
Supply voltage	V	5.0	5.0
Max. speed	rpm	30000	30000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL
Diameter	mm	8	8
Length L	mm	6.7	6.7

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5	6
Reduction ratio	--	4	16	64	256	1024	4096
Max. rated torque	mNm	80	120	160	180	200	200
Max. momentary torque	mNm	240	360	480	540	600	600
Length L	mm	12.8	16.1	19.4	22.7	26	29.3
Shell material	--	Metal	-	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-	-

Drawings



13mm Micro Coreless DC Servo Motors

13**M7...M...

13mm Micro DC Servo Motors - Coreless Brushed Series

- **Advanced Technology:** Coreless brushed DC motors deliver superior efficiency, fast response, and reduced cogging for precise motion control.
- **Performance Range:** Available in multiple variants with supply voltages of 12 V, 15 V, and 24 V, no-load speeds up to 13,500 rpm, and nominal torques up to 1.2 mNm. Low no-load currents (10–20 mA) and wide operating temperature range (–20°C to +85°C) ensure suitability for continuous and reliable operation.
- **Customization:** Several options such as shaft length, special coils, and configurable lead wire lengths allow for customization to application-specific requirements.
- **Integrated Solutions:** Compatible with miniature encoders (up to 512 counts per turn, TTL output) and precision gearboxes (up to 1024:1 reduction, 200 mNm max torque), supporting flexible integration in automation and mechatronics solutions.
- **Target Applications:** Preferred choice for medical devices, robotics, and high-precision instruments requiring compact dimensions and high dynamic performance.

Benefits: These motors offer a unique combination of compact size, low inertia, high efficiency, and customization—minimizing energy loss and maximizing dynamic response for demanding industrial and OEM applications.



<https://www.kocomotion.de/produkt/13m7-m/>



Motor Specifications	Unit	1331N7M08-100-12.0	1331N7M04-135-15.0	1331N7M07-90-24.0
Rated voltage	V	12.0	15.0	24.0
Back-EMF constant	mV/rpm	1.19	1.09	2.58
Torque constant	mNm/A	11.33	10.43	24.63
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	13 +/- 0.1	13 +/- 0.1	13 +/- 0.1
Motor length	mm	29.8	29.8	29.8
Terminal resistance	Ω	12.6	12.5	79
No-load speed	rpm	10000	13500	9000
No-load current	mA	10	20	10
Stall torque	mNm	10.68	12.31	7.24
Stall current	mA	950	1200	300
Nominal torque	mNm	0.84	1.2	0.48
Nominal speed	rpm	9200	12100	8400
Nominal current	mA	80	140	50

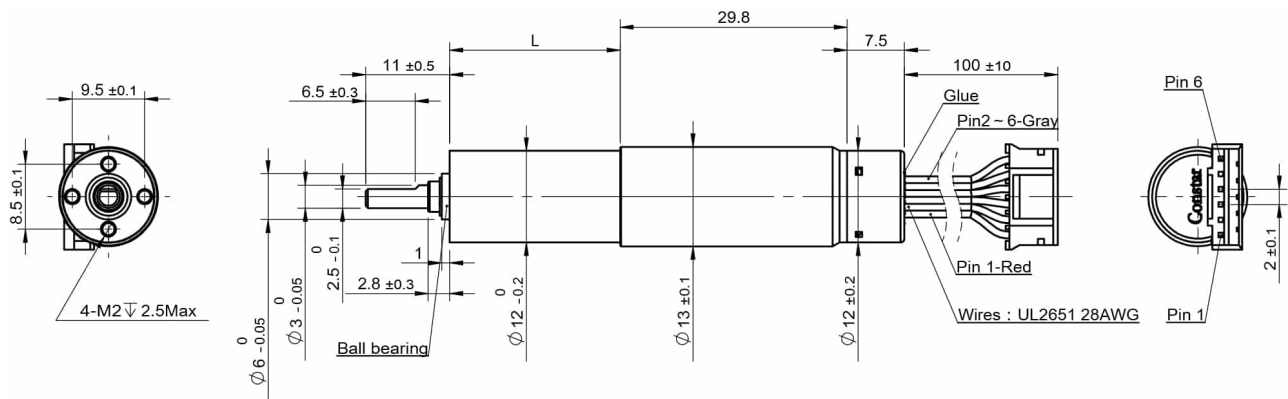
Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16.32.64.256.512	16.32.64.256.512
Supply voltage	V	5.0	5.0
Max. speed	rpm	30000	30000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL
Diameter	mm	12	12
Length L	mm	7.5	7.5

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5
Reduction ratio	--	4	16	64	256	1024
Max. rated torque	mNm	80	120	160	180	200
Max. momentary torque	mNm	240	360	180	540	600
Length L	mm	14.4	18.4	22.4	26.4	30.4
Shell material	--	Metal	-	-	-	-
Gear processing technology	--	Metal CNC	-	-	-	-

Drawings



13mm Coreless Brushless DC Servo Motor

13**NH...M...

Product Overview

The 13**NH...M... series is a high-performance 13mm micro DC servo motor featuring a coreless, brushless architecture for optimal dynamic response and energy efficiency. Designed for demanding motion control tasks, this compact motor is well-suited for integration into applications requiring precision and reliability in constrained spaces.



• Key Technical Specifications

- Operating voltage: 12.0 V
- No-load speed: 25,000 rpm
- No-load current: 0.1 A
- Nominal torque: 1.7 mNm at 15,300 rpm
- Stall torque: 6.4 mNm; stall current: 1.6 A
- Torque constant: 4.3 mNm/A
- Operating temperature: -20 ~ +85°C

• Modular Options

- High-resolution TTL encoder (16-512 cpt, 2/3 channel, 5 V supply)
- Precision gearboxes (1-6 stages, ratios 4-1024, max rated torque up to 200 mNm)
- Custom shaft lengths and special coil options available

• Applications

- Medical equipment (pumps, handheld devices)
- Robotics (grippers, micro-actuators)
- Precision instruments (optical positioning, miniature drives)

Benefits

- Coreless design delivers smooth, low-cogging operation crucial for fine positioning
- Brushless control assures long life and minimal maintenance
- Flexible encoder and gearbox configurations maximize versatility and application fit



<https://www.kocomotion.de/produkt/13nh-m/>

Motor Specifications	Unit	BH1340NH2B01-250-12.0
Rated voltage	V	12.0
Back-EMF constant	mV/rpm	0.45
Torque constant	mNm/A	4.3
Operating temperature	°C	-20~+85
Outer diameter	mm	13 +/- 0.1
Motor length	mm	44 +/- 0.5
Terminal resistance	Ω	7.5
No-load speed	rpm	25000
No-load current	A	0.1
Stall torque	mNm	6.4
Stall current	A	1.6
Nominal torque	mNm	1.7
Nominal speed	rpm	15300
Nominal current	A	0.51

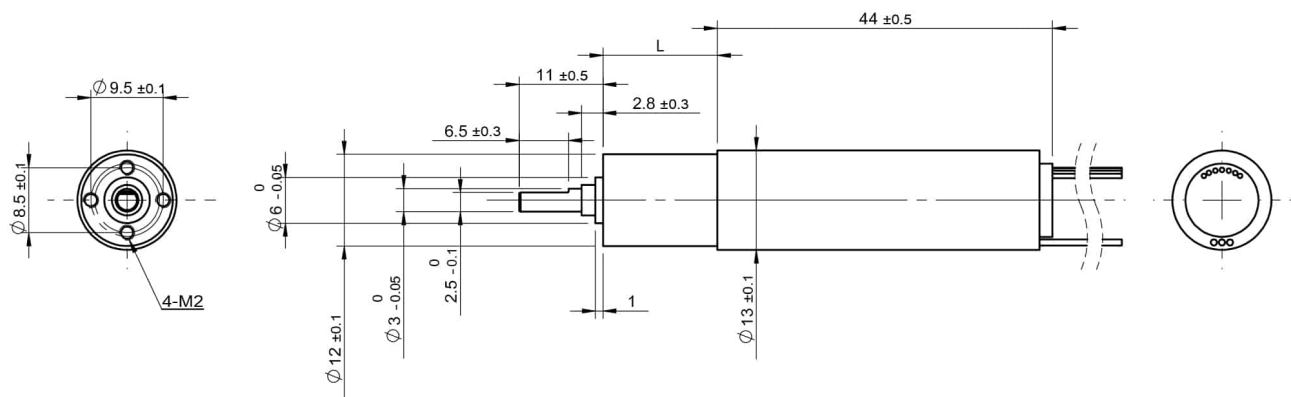
Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16.32.64.256.512	16.32.64.256.512
Supply voltage	V	5.0	5.0
Max. speed	rpm	40000	40000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4	5
Reduction ratio	--	4	16	64	256	1024
Max. rated torque	mNm	80	120	160	180	200
Max. momentary torque	mNm	240	360	480	540	600
Length L	mm	14.4	18.4	22.4	26.4	30.4
Shell material	--	-	-	-	-	-
Gear processing technology	--	-	-	-	-	-

Drawings



16mm Micro DC Coreless Servo Motors

16**M9...M...

16mm Micro DC Coreless Servo Motor Series

Designed for high-precision and compact motion solutions, the 16mm Micro DC Coreless Servo Motor series delivers exceptional performance where space and accuracy are critical. These coreless brushed motors combine lightweight construction with high dynamic responsiveness, making them highly suitable for advanced automation needs.



• Technical Specifications:

- Operating voltage: 12 V, 15 V, 24 V — supporting diverse application requirements
- No-load speed: Up to 14,500 rpm and stall torque up to 13.6 mNm
- Low no-load current (from 10 mA) yields high efficiency, while precise torque constant up to 17.61 mNm/A ensures controlled actuation
- Operating temperature range: -20°C to +85°C for robust deployment in various environments

• Modularity & Options:

- Integrated encoder compatibility: 2 or 3-channel, counts per turn from 16 to 512, max speed up to 30,000 rpm
- Gearbox solutions: 1-6 stages, rated torque up to 1200 mNm, metal CNC gear options
- Customizable: Shaft length, special coil designs, and flexible lead wire configurations

• Typical Applications:

- Medical equipment requiring precise, smooth motion in compact assemblies
- Robotics and automation projects demanding efficiency and high speed
- Precision instruments, analytical systems, and laboratory automation

Competitive Advantages: Stable performance in demanding conditions, flexible integration with encoders/gearboxes, and robust, lightweight construction make this motor family a preferred choice for OEMs requiring reliability in miniaturized designs.



<https://www.kocomotion.de/produkt/16m9-m/>

Motor Specifications	Unit	1625N9M06-110-12.0	1625N9M04-140-15.0	1625N9M08-127-24.0
Rated voltage	V	12.0	15.0	24.0
Back-EMF constant	mV/rpm	1.08	1.02	1.84
Torque constant	mNm/A	10.33	9.74	17.61
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	16 +/- 0.1	16 +/- 0.1	16 +/- 1
Motor length	mm	24.6	24.6	24.6
Terminal resistance	Ω	13	10.6	39
No-load speed	rpm	11000	14500	12700
No-load current	mA	10	20	15
Stall torque	mNm	9.45	13.59	10.58
Stall current	mA	920	1420	620
Nominal torque	mNm	2.43	2.35	1.4
Nominal speed	rpm	8150	12000	11000
Nominal current	mA	250	260	100

Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16,32,64,256, 512	16,32,64,256, 512
Supply voltage	V	5.0	5.0
Max. speed	rpm	30000	30000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL
Diameter	mm	15	15
Length L	mm	6.8	6.8

Gearbox Characteristics

16mm Coreless DC Servo Motors

16**NH...M...

16**NH...M... Series | 16mm Micro DC Servo Motors

- **Technology:** Coreless brushless DC architecture delivers high speed, efficiency, and minimal cogging for precision control.
- **Model Variants:**
 - 24V - No-load speed: 51,000 rpm, Nominal torque: 14 mNm
 - 32V - No-load speed: 42,500 rpm, Nominal torque: 17 mNm
 - 48V - No-load speed: 56,000 rpm, Nominal torque: 13 mNm
- **Encoder Options:** Up to 3 channels, TTL output, resolutions from 16 to 1024 cpt, 5V logic, and max speeds up to 100,000 rpm.
- **Robust Operation:** Wide operating temperature range (-20°C to +85°C) guarantees reliability in demanding environments.
- **Customizable:** Shaft length and coil configurations available to match specific integration requirements.



Applications:

- Medical devices (pumps, diagnostic instruments)
- Robotics (precision actuators, joint drives)
- Precision instrumentation (laboratory automation, metrology equipment)

Combining high-speed capability, torque performance, and compact design, the 16**NH...M... series is engineered for demanding applications that require precise motion control in space-restricted environments. Flexible encoder and customization options ensure seamless integration and optimal performance for OEM and automation projects.



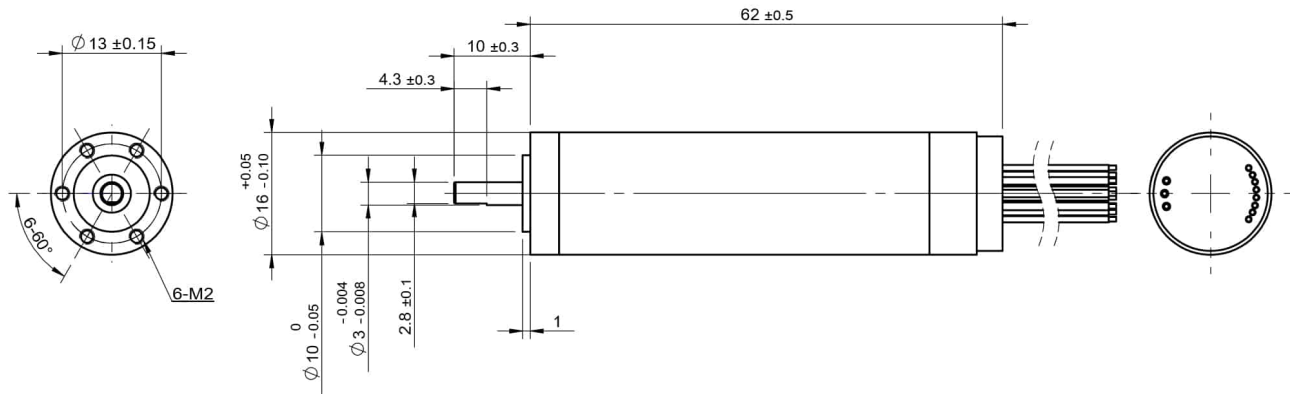
<https://www.kocomotion.de/produkt/16nh-m/>

Motor Specifications	Unit	BH1659NH2B01-510-24.0	BH1659NH2B02-425-32.0	BH1659NH2B03-560-48.0
Rated voltage	V	24.0	32.0	48.0
Back-EMF constant	mV/rpm	0.469	0.749	0.853
Torque constant	mNm/A	4.5	7.1	8.1
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	16 + 0.05 - 0.10	16 + 0.05 - 0.10	16 + 0.05 - 0.10
Motor length	mm	62 +/- 0.5	62 +/- 0.5	62 +/- 0.5
Terminal resistance	Ω	0.5	1.42	1.52
No-load speed	rpm	51000	42500	56000
No-load current	A	0.2	0.12	0.15
Stall torque	mNm	213.9	160	256
Stall current	A	48	22.5	31.6
Nominal torque	mNm	14	17	13
Nominal speed	rpm	47700	38000	53200
Nominal current	A	3.3	2.5	1.7

Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16,32,64,256,512, 1024	16,32,64,256,512, 1024
Supply voltage	V	5.0	5.0
Max. speed	rpm	100000	100000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL

Drawings



19mm Coreless Brushless DC Servo Motors

19**NH...M...

19**NH...M... Series: High-Performance 19mm Coreless Brushless DC Servo Motors

The 19**NH...M... family delivers exceptional dynamics in compact form with their 19mm diameter coreless, brushless construction. These micro DC servo motors provide high-speed operation, superior torque-to-weight ratio, and precision control—ideal for critical applications where space and performance are paramount.



- **No-load speed:** Up to 48,200 rpm across voltage options (24V, 36V, 48V)
- **Torque:** Nominal torque up to 21 mNm and stall torque up to 358.8 mNm
- **Brushless, coreless design:** Provides low inertia, rapid acceleration, and minimal cogging for smooth motion control
- **Encoder options:** Integrated encoders with up to 3 channels; selectable counts per turn (16 to 1024 cpt) and TTL signal output
- **Electrical features:** Terminal resistance from 0.36Ω to 1.41Ω; Back-EMF constants from 0.496 to 0.992 mV/rpm; operational from -20°C to +85°C
- **Customization:** Options for shaft length, special coils, and lead wire length adaptation

Applications: Suited for medical equipment (e.g., compact pumps, laboratory automation), high-precision robotics and actuator systems, and sensitive measuring or instrumentation devices.

Benefits: High-speed performance in a micro form factor; reliable, maintenance-free operation due to brushless technology; easy integration with advanced encoder feedback for position/speed monitoring. An excellent choice for demanding automation and mechatronic designs requiring accuracy, responsiveness, and miniature footprint.



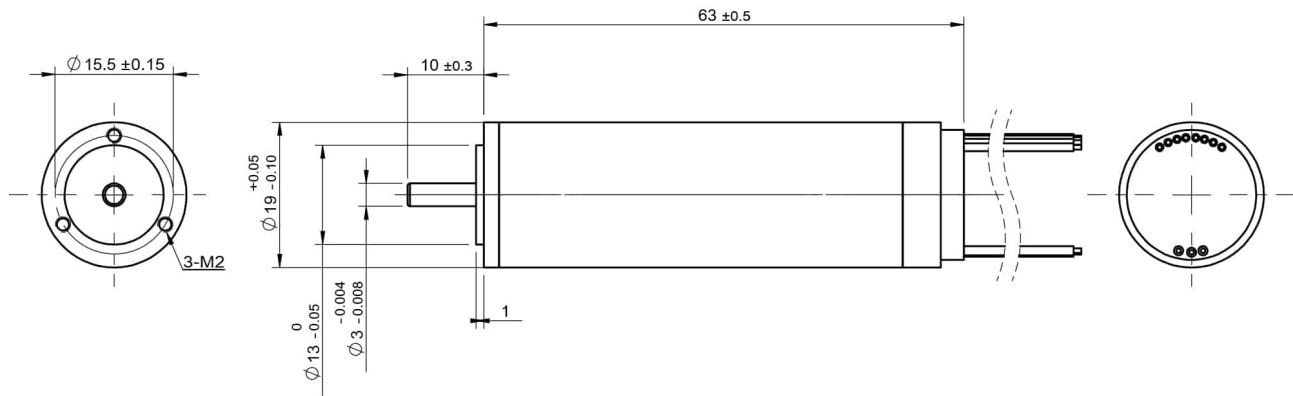
<https://www.kocomotion.de/produkt/19nh-m/>

Motor Specifications	Unit	BH1960NH2B01-482-24.0	BH1960NH2B02-482-36.0	BH1960NH2B03-482-48.0
Rated voltage	V	24.0	36.0	48.0
Back-EMF constant	mV/rpm	0.496	0.744	0.992
Torque constant	mNm/A	4.738	7.104	9.471
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	19 + 0.05 - 0.10	19 + 0.05 - 0.10	19 + 0.05 - 0.10
Motor length	mm	63 +/- 0.5	63 +/- 0.5	63 +/- 0.5
Terminal resistance	Ω	0.36	0.71	1.41
No-load speed	rpm	48200	48200	48200
No-load current	A	0.24	0.2	0.14
Stall torque	mNm	314.7	358.8	321
Stall current	A	66.67	50.7	34.04
Nominal torque	mNm	21	18	18
Nominal speed	rpm	45070	45800	45550
Nominal current	A	4.56	2.73	2

Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16,32,64,256,512, 1024	16,32,64,256,512, 1024
Supply voltage	V	5.0	5.0
Max. speed	rpm	100000	100000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL

Drawings



22mm Coreless Brushless DC Servo Motors

22**NH...M...(1)

22**NH...M...(1) Series - 22mm Coreless Brushless DC Servo Motors



- **Compact High-Performance Design:** 22mm diameter coreless construction ensures lightweight operation and minimal inertia, enabling rapid acceleration and exceptional efficiency.
- **Technical Specifications:**
 - Nominal voltages: 24V, 36V, 48V (custom coil options available)
 - No-load speeds up to 49,200 rpm; nominal speeds up to 48,732 rpm
 - Available stall torque: up to 442 mNm; nominal torque: 16 mNm
 - Low no-load current and high torque constant deliver optimized power usage
 - Operating temperature range: -20°C to +85°C
- **Encoder Options:**
 - Up to 3 channels, TTL output
 - Counts per turn: 16 to 1024 cpt
 - Supports maximum speeds up to 100,000 rpm
 - Supply voltage: 5V
- **Applications:**
 - Medical equipment (pumps, surgical tools)
 - Robotics (actuators, end effectors)
 - Precision instrumentation (analytical, optical devices)
- **Customization & Integration:** Optional shaft lengths and lead wire configurations, as well as tailored windings, maximize adaptability for varied installation and performance requirements.

Engineered for superior dynamic performance and precision feedback, this series is ideal for original equipment manufacturers and system integrators seeking reliable, compact motion solutions in advanced automation, healthcare, and robotics markets.



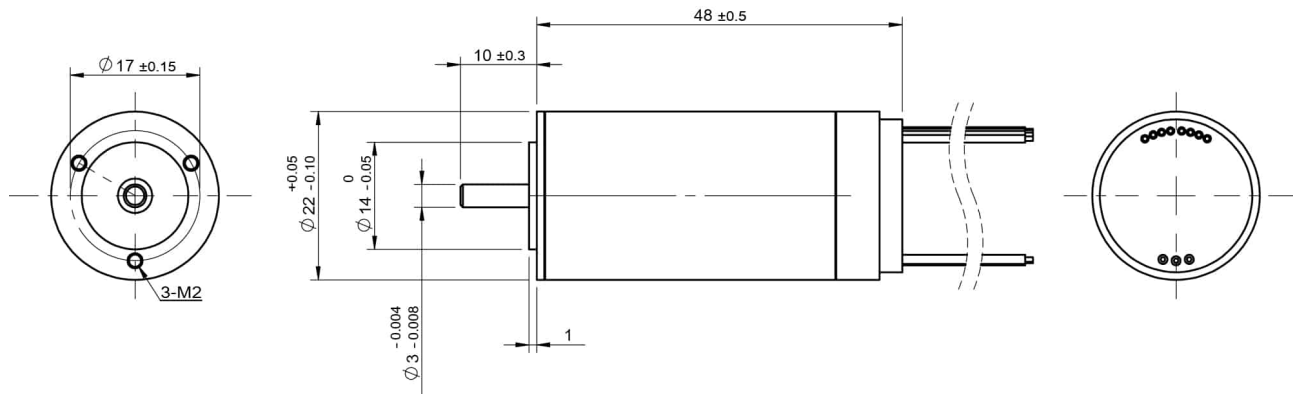
<https://www.kocomotion.de/produkt/22nh-m-1/>

Motor Specifications	Unit	BH2245NH2B01-492-24.0	BH2245NH2B02-505-36.0	BH2245NH2B03-492-48.0
Rated voltage	V	24.0	36.0	48.0
Back-EMF constant	mV/rpm	0.486	0.71	0.972
Torque constant	mNm/A	4.64	6.78	9.281
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	22 + 0.05 - 0.10	22 + 0.05 - 0.10	22 + 0.05 - 0.10
Motor length	mm	48 +/- 0.5	48 +/- 0.5	48 +/- 0.5
Terminal resistance	Ω	0.28	0.55	1.13
No-load speed	rpm	49200	49200	49200
No-load current	A	0.33	0.26	0.16
Stall torque	mNm	396	442	392
Stall current	A	85.71	65.46	42.48
Nominal torque	mNm	16	16	16
Nominal speed	rpm	47232	48732	47232
Nominal current	A	3.75	2.54	1.85

Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16,32,64,256,512, 1024	16,32,64,256,512, 1024
Supply voltage	V	5.0	5.0
Max. speed	rpm	100000	100000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL

Drawings



22mm Coreless Brushless DC Servo Motors

22**NH...M...(2)

22**NH...M...(2) Series - 22mm Micro Coreless Brushless DC Servo Motors

- **Construction:** Advanced coreless, brushless design for low inertia and exceptional dynamic response in a compact 22 mm housing.
- **Performance:**
 - No-load speed up to 50,000 rpm and nominal torque of 14 mNm.
 - Voltage range: 24-48 V with stall torque up to 575 mNm and continuous operation at high speeds (nominal speed: 48,750 rpm).
 - Low terminal resistance (down to 0.19 Ω) ensures energy-efficient operation.
 - Operating temperature range: -20°C to +85°C for application versatility.
- **Encoder Options:**
 - Integrated encoders with 2 or 3 channels.
 - Selectable resolution from 16 to 1024 counts per turn (cpt).
 - TTL output, 5 V supply, max. encoder speed 100,000 rpm.
- **Configurations:** Customizable shaft length, special coil options, and lead wire lengths available on request.
- **Applications:** Precision medical equipment, robotics, and instrumentation requiring compact, high-speed, and reliable servo performance.



Benefit from smooth, cog-free motion, superior efficiency, and robust construction for demanding automation and motion control environments.



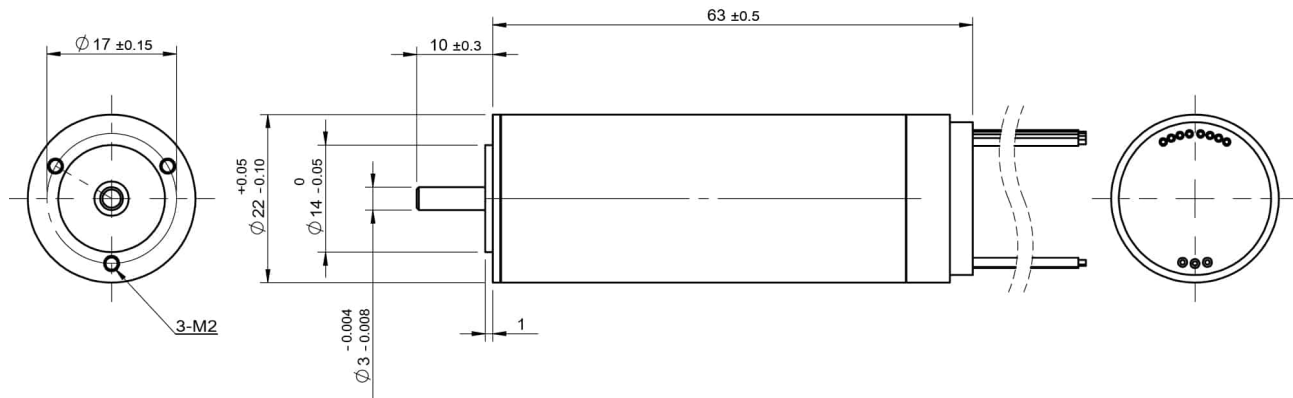
<https://www.kocomotion.de/produkt/22nh-m-2/>

Motor Specifications	Unit	BH2260NH2B01-500-24.0	BH2260NH2B02-500-36.0	BH2260NH2B03-500-48.0
Rated voltage	V	24.0	36.0	48.0
Back-EMF constant	mV/rpm	0.478	0.718	0.957
Torque constant	mNm/A	4.569	6.854	9.137
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	22 + 0.05 - 0.10	22 + 0.05 - 0.10	22 + 0.05 - 0.10
Motor length	mm	63 +/- 0.5	63 +/- 0.5	63 +/- 0.5
Terminal resistance	Ω	0.19	0.43	0.76
No-load speed	rpm	50000	50000	50000
No-load current	A	0.4	0.26	0.21
Stall torque	mNm	575	572	575
Stall current	A	126.32	83.72	42.48
Nominal torque	mNm	14	14	14
Nominal speed	rpm	48750	48750	48750
Nominal current	A	3.55	2.35	1.78

Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16,32,64,256,512, 1024	16,32,64,256,512, 1024
Supply voltage	V	5.0	5.0
Max. speed	rpm	100000	100000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL

Drawings



25 mm Coreless DC Servo Motors

25**C9...M...

The **25**C9...M...** series comprises high-performance 25 mm micro DC servo motors, utilizing a coreless brushed design for optimized efficiency and control accuracy. These motors support a broad voltage range (12 V, 24 V, and 30 V) and deliver exceptional torque outputs up to 196.9 mNm, ensuring reliable operation in demanding precision environments.



- **Technical Specifications:**

- Coreless brushed DC technology for smooth, low-inertia drive
- Voltage options: 12.0 V, 24.0 V, 30.0 V
- No-load speeds: 9000-9800 rpm
- Stall torque: up to 196.9 mNm
- Nominal torque: up to 37.6 mNm
- Nominal current: as low as 710 mA
- Operates in wide temperature range: -20°C to +85°C

- **Options & Accessories:**

- Incremental encoders: 2/3 channel, up to 1024 cpt, TTL output
- Integrated metal gearboxes: up to 6 stages, rated torque up to 2500 mNm
- Custom shaft length and special coil configurations

- **Typical Applications:**

- Medical equipment requiring precise, responsive position control
- Advanced robotics for compact, high-torque actuation
- Precision instruments and measurement devices

- **Competitive Advantages:**

- Coreless architecture for reduced cogging and superior speed stability
- Flexible configuration for demanding integration requirements
- High reliability in constrained or mobile systems



<https://www.kocomotion.de/produkt/25c9-m-2/>

Motor Specifications	Unit	2543N9C2B09-95-12.0	2543N9C2B10-94-24.0	2543N9C2B11-98-30.0
Rated voltage	V	12.0	24.0	30.0
Back-EMF constant	mV/rpm	1.26	2.65	3.04
Torque constant	mNm/A	11.98	25.31	29.06
Operating temperature	°C	-20~+85	-20~+85	-20~+85
Outer diameter	mm	25 +/- 0.2	25 +/- 0.2	25 +/- 0.2
Motor length	mm	43.3	43.3	43.3
Terminal resistance	Ω	0.95	3.4	3.9
No-load speed	rpm	9500	9000	9800
No-load current	mA	80	35	40
Stall torque	mNm	142.8	140.3	196.9
Stall current	mA	12000	5600	7100
Nominal torque	mNm	20	37.6	19.6
Nominal speed	rpm	8200	6600	8900
Nominal current	mA	1800	1500	710

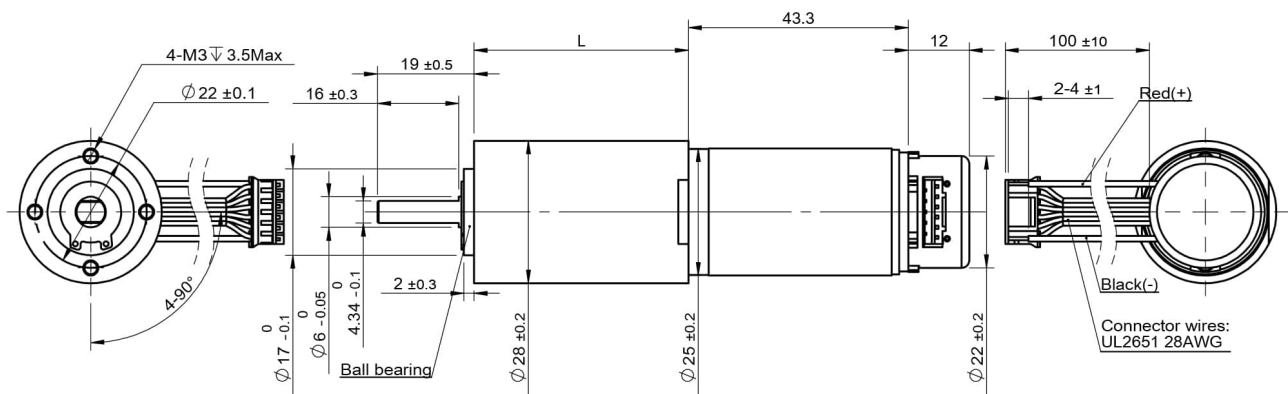
Encoder Characteristics

Number of channels	Unit	2	3
Counts per turn	cpt	16,32,64,128,256, 512,1024	16,32,64,128,256, 512,1024
Supply voltage	V	5.0	5.0
Max. speed	rpm	30000	30000
Phase shift	°e	90±45	90±45
Output signal	--	TTL	TTL
Diameter	mm	22	22
Length L	mm	12	12

Gearbox Characteristics

Gearbox stages	Unit	1	2	3	4
Reduction ratio	--	3.7.4.3.5.2	13.7,16,18.3, 19.2,22,27	51,79,99, 115,139	189,218, 337,721
Max. rated torque	mNm	500	750	2000	2500
Max. momentary torque	mNm	750	1100	3000	3750
Length L	mm	21.5	30.5	39.5	48.5
Shell material	--	Metal	-	-	-
Gear processing technology	--	Metal CNC	-	-	-

Drawings



12mm DC Sonic Motor Family

1239ZDF

1239ZDF Series: 12mm DC Sonic Motors

The 1239ZDF family is designed for applications demanding high-frequency vibration and compact integration, such as electric toothbrushes, health care devices, and cleaning equipment. With a nominal voltage of 3.7V, these motors deliver rapid response and efficient power consumption in space-constrained environments.



- **High-Performance Vibration:** Operating frequency ranges from 180-350 Hz, with no-load vibration rates up to 40,800 times/minute (model dependent), ensuring thorough cleaning and stimulation.
- **Consistent Torque Output:** Robust starting torque of 11 mNm and reliable rated load handling for demanding, high-precision duty cycles.
- **Energy Efficient:** No-load current from 130-140 mA and low load currents tailored for battery-driven devices.
- **Compact & Lightweight:** Weighing only 16.7-16.8g and engineered for easy integration into portable or miniaturized products.
- **Flexible Integration:** Options include various shaft lengths and custom coil designs to meet specific OEM requirements.
- **Wide Temperature Operation:** Perform reliably from -10°C to +60°C, suiting harsh or variable field conditions.

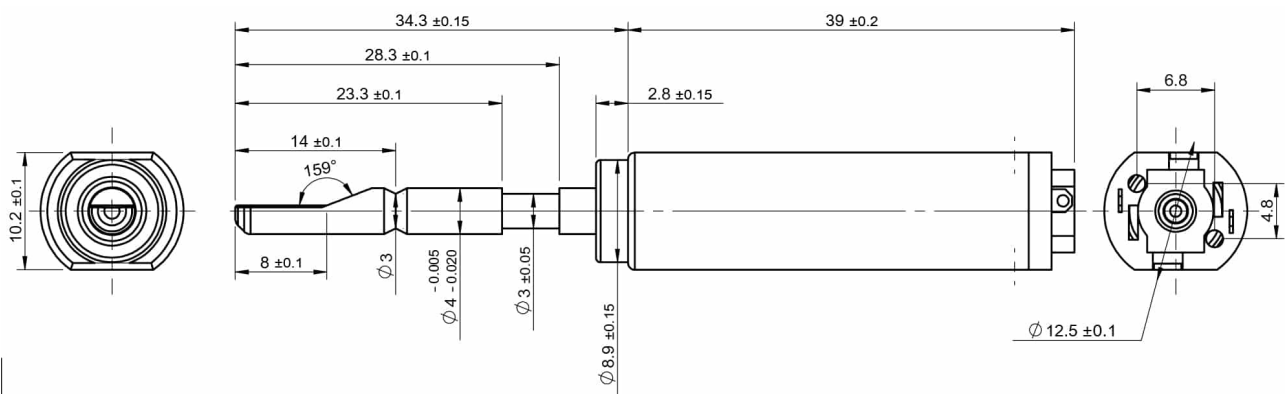
Applications: Electric toothbrushes, health care equipment, and other compact, precision cleaning solutions. Choose the 1239ZDF series for high-frequency, reliable, and customizable motion—backed by robust DC sonic technology.



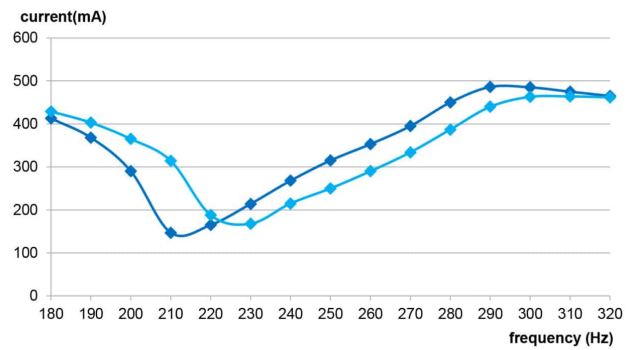
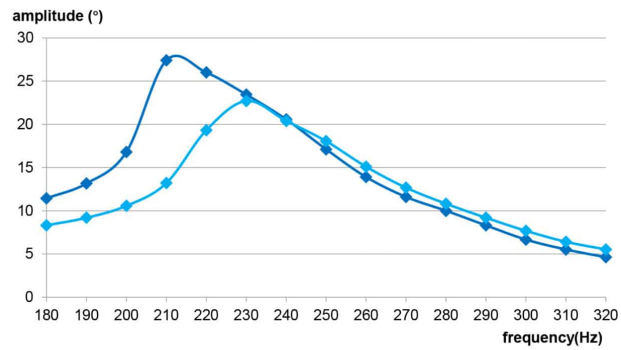
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Motor Specifications	Unit	1239ZDF-ET-L2-33-3.7	1239ZDF-ET-L4-3.7	1239ZDF-1-L8-3.7
Rated voltage	V	3.7	3.7	3.7
Load current	mA	320	400	350
Rotor inertia	gcm ²	0.65	0.65	0.65
Weight	g	16.8	16.7	16.7
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	12.5 +/- 0.1	12.5 +/- 0.1	12.5 +/- 0.1
Motor length	mm	39 +/- 0.2	39 +/- 2	39 +/- 0.2
Winding resistance	Ω	5.3	4.0	4.0
Operating frequency range	Hz	180~350	180~350	180~350
No-load vibration frequency	Times/minute	40800	36000	36000
No-load current	mA	130	140	140
Starting torque	mNm	11	11	11
Starting current	A	0.8	0.8	0.9
Rated load (Brush head)	g	3.8	3.8	3.8
Load vibration frequency	Times/minute	30000	30000	30000

Drawings



Speed/Thrust Curves



13mm DC Sonic Motor Family

1339ZDF

1339ZDF DC Sonic Motor Family delivers tailored motion solutions for compact, high-performance systems where reliability and quiet operation are critical. With a 13mm diameter, these DC sonic motors excel in modern devices requiring both precision and durability.

**• Key Technical Features:**

- Compact 13mm form factor for easy integration into space-limited applications
- DC sonic motor technology ensures smooth, quiet, and highly efficient motion
- Multiple customization options: selectable lead wire length, shaft length, and special coil configurations to suit diverse application needs

• Applications:

- Electric toothbrushes for quiet, precise oral care
- Healthcare and personal care products needing consistent, low-noise operation
- Portable and automated cleaning equipment for both consumer and light industrial environments

• Benefits:

- Reliable, maintenance-minimized operation for high-cycle use
- Easy adaptation to OEM requirements and custom projects
- Supports product innovation—high performance in reduced footprint scenarios

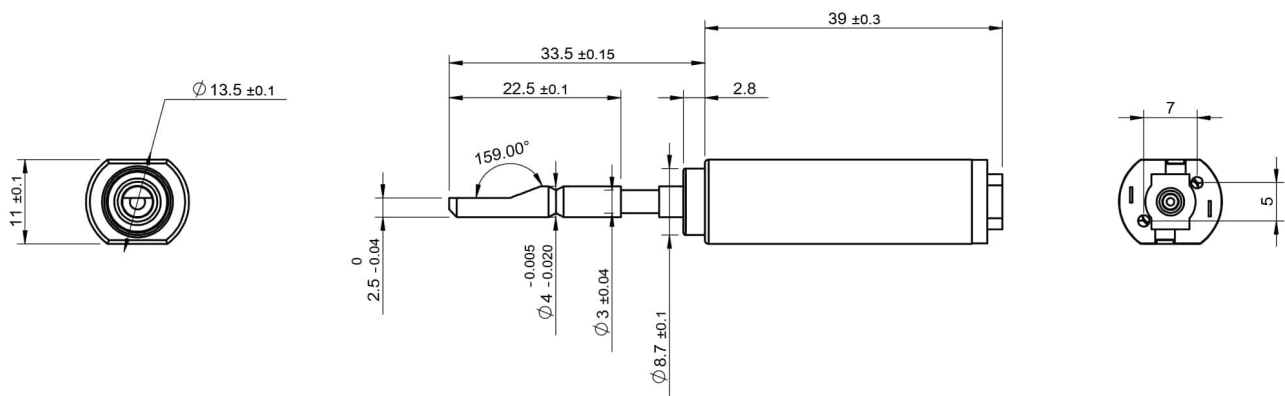
Engineered for flexibility and long service intervals, the 1339ZDF family is ideal for advanced motion-driven systems across healthcare, cleaning, and personal care sectors.



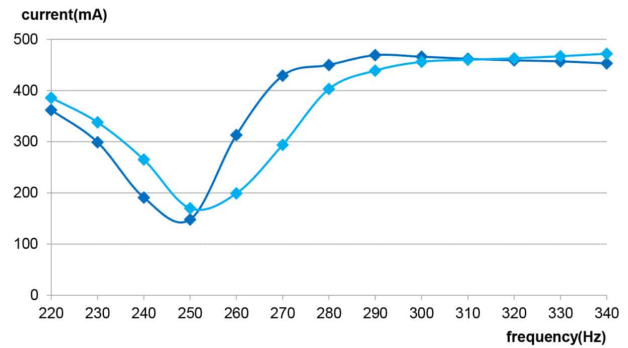
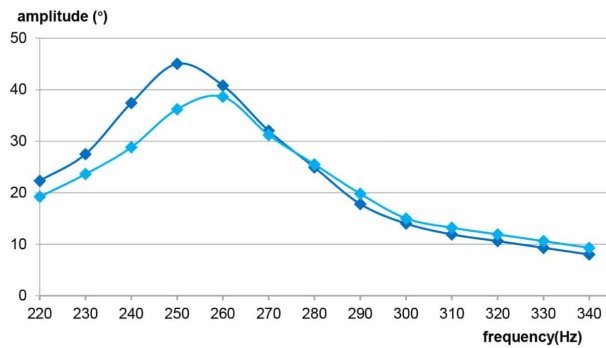
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Motor Characteristics	Unit	1339ZDF-1-L2-3.7	1339ZDF-1-L3-2.5	1339ZDF-1-L4-5.0
Rated voltage	V	3.7	2.5	5.0
Load current	mA	400	330	480
Rotor inertia	gcm ²	0.75	0.75	0.75
Weight	g	19	19	19
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	13.5 +/- 0.1	13.5 +/- 0.1	13.5 +/- 0.1
Motor length	mm	39 +/- 0.3	39 +/- 0.3	39 +/- 0.3
Winding resistance	Ω	4	4	4
Operating frequency range	Hz	220-360	220-360	220-360
No-load vibration frequency	Times / minute	39600	39600	39600
No-load current	mA	90	75	110
Starting torque	mNm	11	8	15
Starting current	A	0.9	0.7	1.2
Rated load (Brush head)	g	3.8	3.8	3.8
Load vibration frequency	Times / minute	31200	31200	31200

Drawings



Speed/Thrust Curves



14mm DC Sonic Motors

1434ZDF

1434ZDF 14mm DC Sonic Motor Family offers precision vibration technology for applications requiring compact size and robust operation. Designed for high-frequency performance, these motors are ideal for integration into:

- Electric toothbrushes
- Health care products
- Cleaning equipment

Key Technical Specifications:

- Operating Voltage: 2.5 V or 3.7 V variants
- Resistance: 3.8 Ω
- Operating Frequency Range: 220-360 Hz
- No-load Vibration Frequency: 39,600 times/minute
- Starting Torque: Up to 12 mNm
- No-load Current: 80-95 mA, Load Current: 340-440 mA
- Rotor Inertia: 1.0 gcm²
- Operating Temperature: -10°C to +60°C
- Compact Weight: 19 g

Benefits & Competitive Advantages:

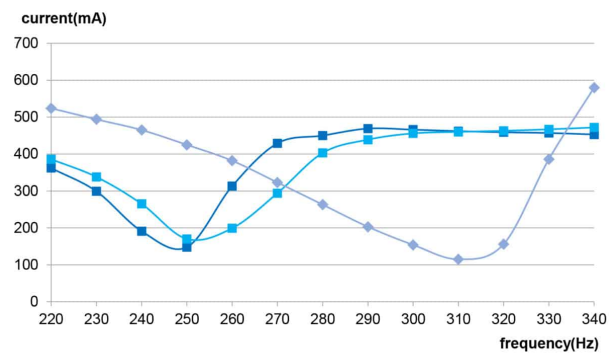
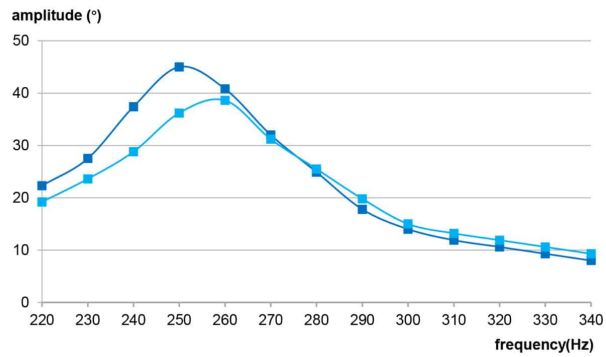
- Small form factor with strong vibration output for space-constrained designs
- Wide frequency range enables optimized cleaning and care performance
- Low power consumption supports portable and battery-powered devices
- Customizable options available for lead wires, shaft length, and coil configuration to meet specific application demands
- Engineered for reliability and extended service life in intensive duty cycles



<https://www.kocomotion.de/produkt/1434zdf/>



Speed/Thrust Curves



15mm DC Sonic Micro Motor

1538ZDF

1538ZDF Series - 15mm DC Sonic Motor

- **Versatile Performance:** Designed for efficiency and reliability, the 1538ZDF series offers voltage options of 2.5V and 3.7V, with resistance at 3.8Ω. The motor delivers up to 40,800 vibration cycles per minute in no-load conditions and maintains consistent output with a starting torque of up to 13 mNm.
- **High Precision & Reliability:** Consistent operating frequency range (200–360 Hz), low rotor inertia (1.1 gcm²), and stable current draw (starting current up to 0.9A) enable fine vibration control critical for personal care and sensitive applications.
- **Application-Focused:** Ideal for electric toothbrushes, health care products, and portable cleaning equipment, where low noise, precise actuation, and compact design are essential.
- **Robust Construction:** Operating temperature range of -10°C to +60°C and a compact 20g body ensure suitability for integration in portable, battery-powered designs.
- **Customizable Options:** A range of configuration options including lead wire length, shaft length, and special coils support tailored solutions for specialized OEM requirements.

Competitive Advantages: The 1538ZDF motors deliver consistent high-frequency vibration under load, with low weight and energy-efficient current consumption (no-load current as low as 90mA). Flexible design options enable rapid integration into new device generations.

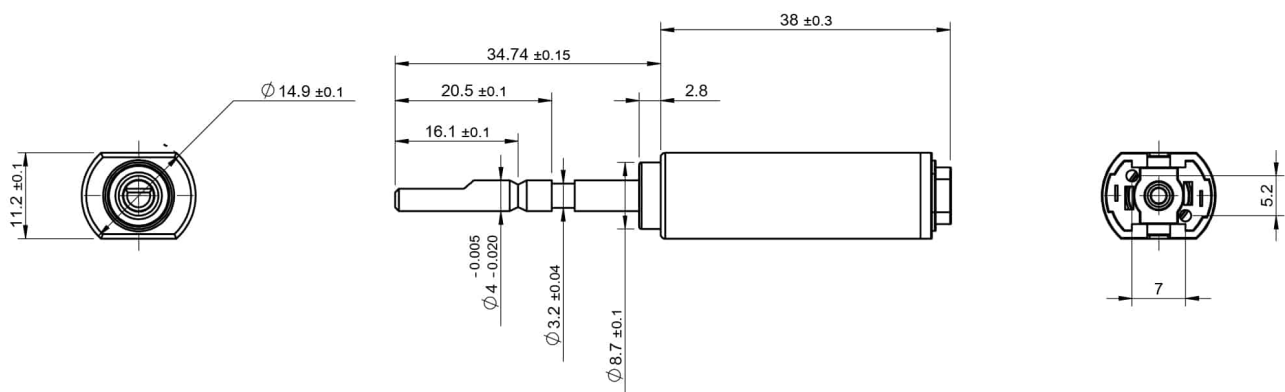


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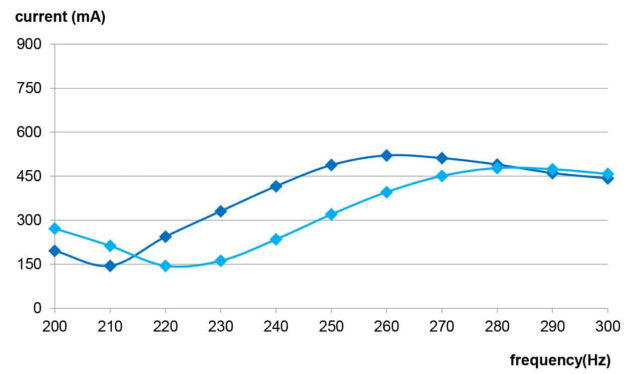
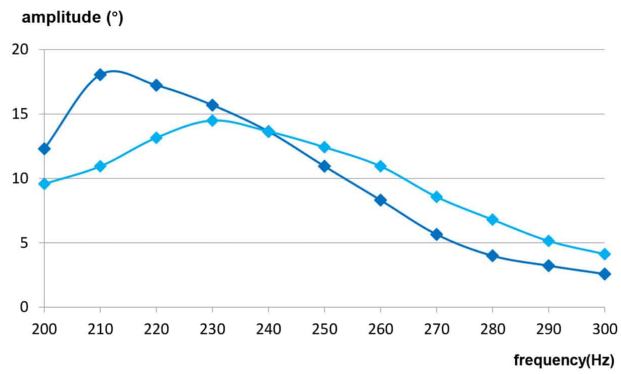


Motor Characteristics	Unit	1538ZDF-1-L4-3.7	1538ZDF-ET-L9-3.7	1538ZDF-1-L1-2.5
Rated voltage	V	3.7	3.7	2.5
Load current	mA	350	380	320
Rotor inertia	gcm ²	1.1	1.1	1.1
Weight	g	20	20	20
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	14.9 +/- 0.1	14.9 +/- 0.1	14.9 +/- 0.1
Motor length	mm	38 +/- 0.3	38 +/- 0.3	38 +/- 0.3
Winding resistance	Ω	3.8	3.8	3.8
Operating frequency range	Hz	200-360	200-360	200-360
No-load vibration frequency	Times / minute	40800	40800	40800
No-load current	mA	90	95	90
Starting torque	mNm	13	13	9
Starting current	A	0.9	0.9	0.7
Rated load (Brush head)	g	3.9	3.9	3.9
Load vibration frequency	Times / minute	31200	31200	31200

Drawings



Speed/Thrust Curves



16mm Sonic Electric Toothbrush Motor

1640ZDF

1640ZDF 16mm Sonic Electric Toothbrush Motors are precision-engineered solutions designed to drive high-performance oral care and portable cleaning equipment. With a compact diameter of 16mm and a lightweight 25g build, these motors deliver up to **42,000 vibrations per minute** at 3.7V, enabling effective sonic action while maintaining low operational noise.



- **Performance Specifications:**

- Voltage: 3.7 V
- Operating frequency range: 220-360 Hz
- No-load vibration frequency: up to 42,000 times/min
- No-load current: 85-90 mA
- Starting torque: 14-15 mNm
- Rated load (brush head): 3.6-3.9 g
- Load vibration frequency: 36,000 times/min
- Operating temperature: -10°C to +60°C
- Rotor inertia: 1.2 gcm²

- **Applications:**

- Electric toothbrushes
- Health care products
- Precision cleaning equipment

- **Key Benefits:**

- High-efficiency operation with stable output for extended motor life
- Quiet, consistent vibration ideal for consumer and professional oral care devices
- Customizable options: lead wire length, shaft length, and special coil configurations for application-specific integration

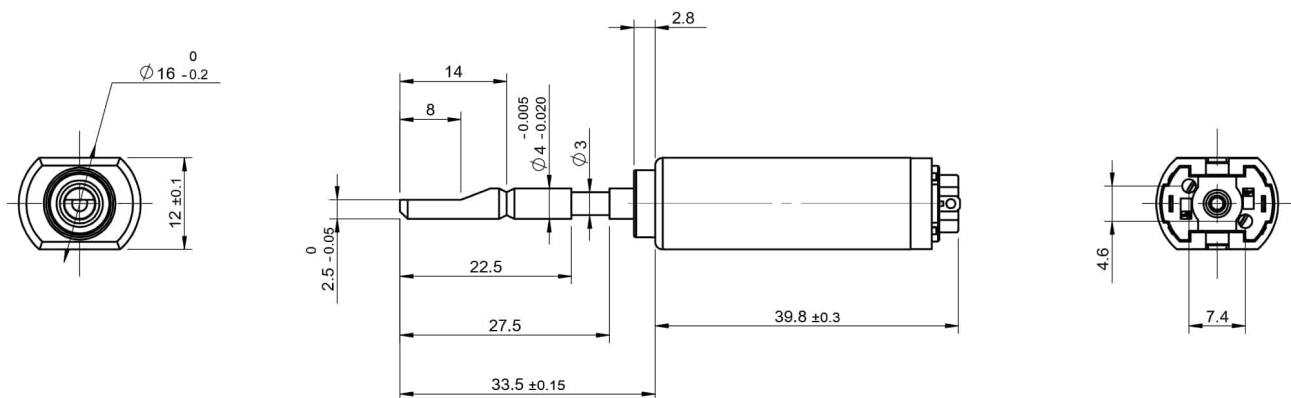
1640ZDF motors are trusted in solutions requiring compact form factors, energy efficiency, and reliable high-frequency vibration—making them the preferred choice for innovative health and hygiene devices.



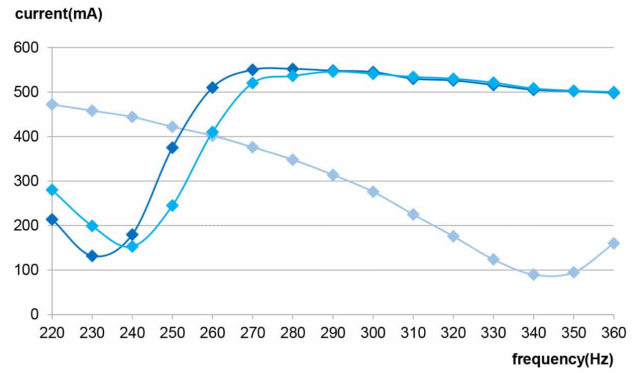
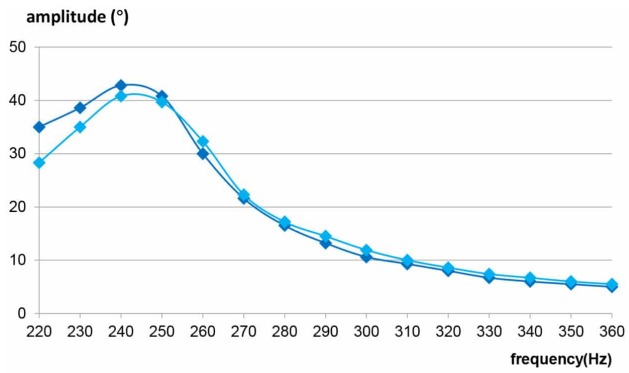
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Characteristics	Unit	1640ZDF-1-L2-3.7	1640ZDF-T-1A-L36-3.7	1640ZDF-ET-L4-3.7
Rated voltage	V	3.7	3.7	3.7
Load current	mA	350	370	330
Rotor inertia	gcm ²	1.2	1.2	1.2
Weight	g	25	25	25
Operating temperature	°C	-10 +60	-10 +60	-10 +60
Outer diameter	mm	16 - 0.2	16 - 0.2	16 - 0.2
Motor length	mm	39.8 +/- 0.3	39.8 +/- 0.3	39.8 +/- 0.3
Winding resistance	Ω	3.7	3.7	4
Operating frequency range	Hz	220-360	220-360	220-360
No-load vibration frequency	Times / minute	40800	42000	40800
No-load current	mA	90	90	85
Starting torque	mNm	15	15	14
Starting current	A	1.0	1.0	0.9
Rated load (Brush head)	g	3.6	3.9	3.9
Load vibration frequency	Times / minute	36000	36000	36000

Drawings



Speed/Thrust Curves



16mm DC Sonic Motor Family

1640ZDT

KOCO 1640ZDT 16mm DC Sonic Motor Family delivers highly efficient vibration performance in a compact form factor, ideally suited for applications demanding precise motion control and reliability.

**• Key Technical Specifications:**

- Diameter: 16 mm, weight range: 21.8-23.6 g
- Nominal voltage: 3.7 V
- Operating frequency: 200-400 Hz
- No-load vibration frequency: up to 48,000 times/minute
- No-load current: as low as 85 mA (model dependent)
- Starting torque: 17-19 mNm
- Rated load (brush head): 4.6-5.0 g
- Operating temperature: -10 to +60 °C

• Applications:

- Electric toothbrushes
- Health care equipment
- Cleaning devices

• Main Benefits:

- High-frequency vibration ensures thorough cleaning and precise operation
- Compact, lightweight design facilitates integration into handheld and portable OEM devices
- Customizable options for shaft length and specialized coil configurations
- Low current operation supports extended battery life in cordless products
- Broad temperature range for demanding service conditions

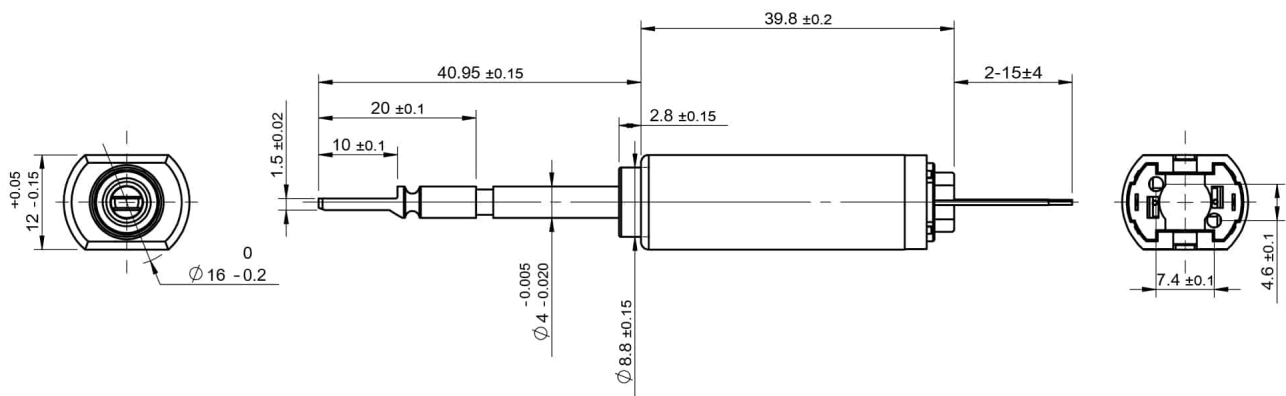
This motor family is engineered to meet stringent requirements in personal care, health, and cleaning segments, providing robust, consistent performance with flexible customization for OEM integration.



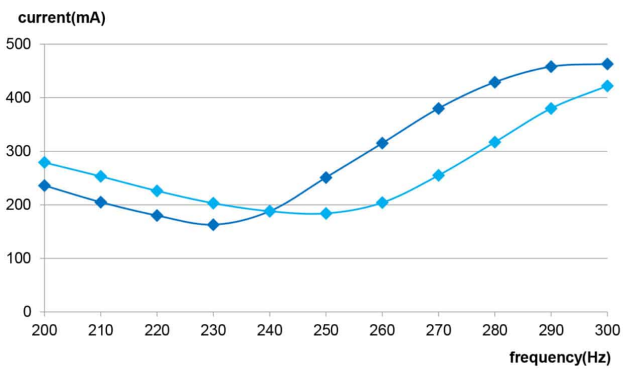
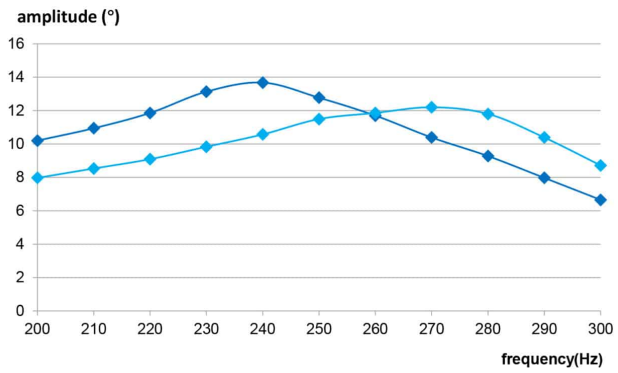
<https://www.kocomotion.de/produkt/1640zdt/>

Motor Specifications	Unit	1640ZDT-1-L196-30-3.7	1640ZDT-2-L197-30-3.7	1640ZDT-2T-L207-15-3.7
Rated voltage	V	3.7	3.7	3.7
Load current	mA	450	380	350
Rotor inertia	gcm ²	0.35	0.27	0.27
Weight	g	23.6	21.8	22
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	16 - 0.2	16 - 0.2	16 - 0.2
Motor length	mm	39.8 +/- 0.2	39.8 +/- 0.2	39.8 +/- 0.2
Winding resistance	Ω	3.7	4	4
Operating frequency range	Hz	200~400	200~400	200~400
No-load vibration frequency	Times/minute	45600	45600	48000
No-load current	mA	90	85	85
Starting torque	mNm	19	17	17
Starting current	A	0.9	0.8	0.8
Rated load (Brush head)	g	4.6	4.6	5.0
Load vibration frequency	Times/minute	31200	31200	31200

Drawings



Speed/Thrust Curves



18mm DC Sonic Vibration Motor

1839ZDF

The 1839ZDF family offers precision-engineered 18mm DC sonic vibration motors, designed for high-frequency and demanding vibratory applications. Operating at 3.7V, these motors deliver powerful performance with specifications tailored for reliability and efficiency.



- **High-Performance Vibration:** Capable of delivering up to 40,000 times per minute no-load vibration frequency and up to 33,600 times per minute under typical brush head loads.
- **Robust Torque & Efficiency:** Provides starting torque ratings up to 22 mNm and starting currents from 1.0 to 1.1A, ensuring rapid initiation and consistent output for critical operations.
- **Optimized for Applications:** Ideal for integration into electric toothbrushes, healthcare products, and cleaning equipment, where sustained high-frequency vibration and compact design are essential.
- **Compact and Lightweight:** Weighing 29-30g with rotor inertia as low as 1.6 gcm², suitable for handheld and portable devices.
- **Flexible Configuration:** Customization options include lead wires length, shaft length, and special coil windings to meet specific installation and performance requirements.
- **Reliable Operation in Challenging Environments:** Guaranteed performance across a wide operating temperature range of -10°C to +60°C, supporting long-term durability.

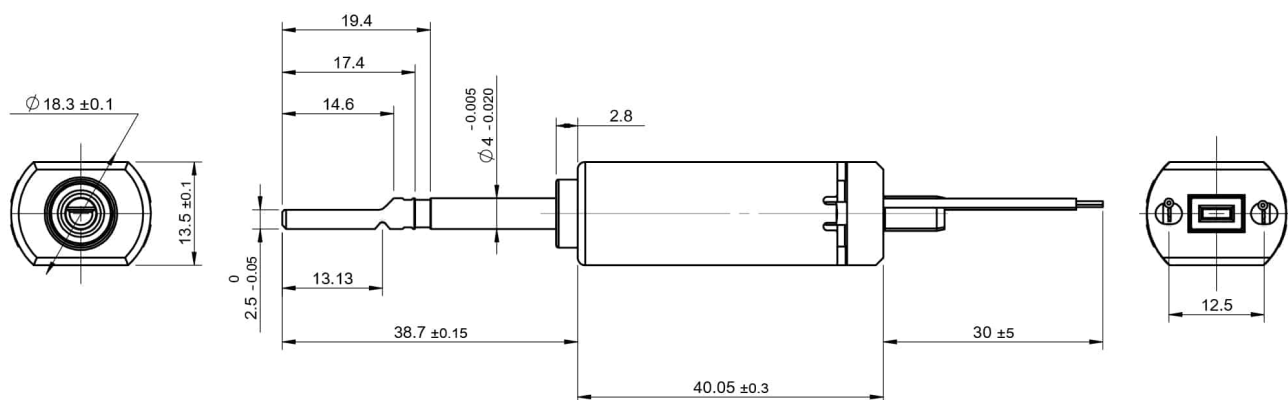
Choose the 1839ZDF series for compact, high-frequency vibration solutions optimized for modern, precision applications demanding both adaptability and reliability.



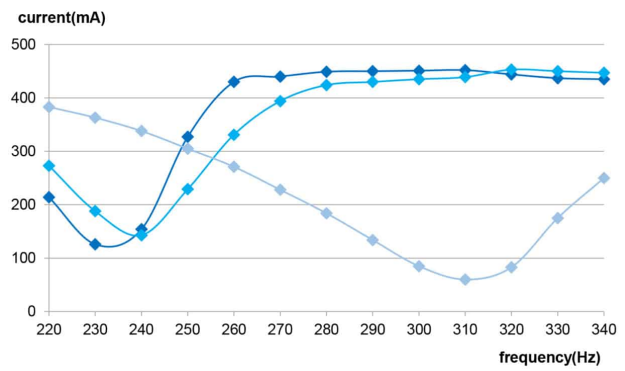
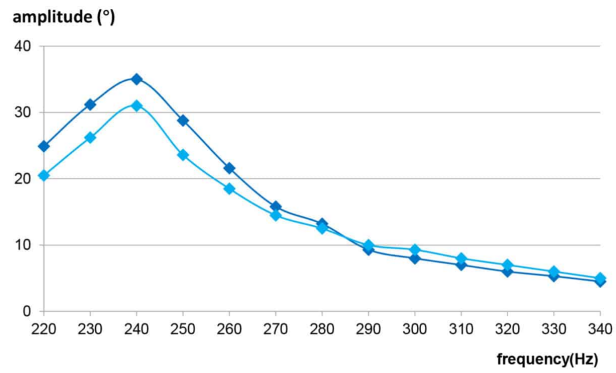
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Characteristics	Unit	1839ZDF-1-L5-3.7	1839ZDF-1AD-L23-40-3.7	1839ZDF-ET-L2-3.7
Rated voltage	V	3.7	3.7	3.7
Load current	mA	400	460	380
Rotor inertia	gcm ²	1.7	1.8	1.6
Weight	g	29	30	29
Operating temperature	°C	-10 +60	-10 +60	-10 +60
Outer diameter	mm	18.3 +/- 0.1	18.3 +/- 0.1	18.3 +/- 0.1
Motor length	mm	40.05 +/- 0.3	40.05 +/- 0.3	40.05 +/- 0.3
Winding resistance	Ω	3.3	3.7	3.7
Operating frequency range	Hz	240~350	220~340	240~350
No-load vibration frequency	Times / minute	40000	34800	40000
No-load current	mA	90	75	80
Starting torque	mNm	18	22	18
Starting current	A	1.1	1.0	1.0
Rated load (Brush head)	g	3.8	3.9	3.8
Load vibration frequency	Times / minute	33600	31200	33600

Drawings



Speed/Thrust Curves



18mm DC Sonic Motor Family

1840ZDT

The 1840ZDT 18mm DC Sonic Motor family delivers high-performance, compact linear motion solutions engineered for modern consumer and industrial equipment. This motor range is ideal for applications that demand reliable vibration and precise torque, such as electric toothbrushes, health care devices, and cleaning tools.

**• Technical Specifications:**

- Voltage: 3.7 V DC
- Operating frequency range: 200~400 Hz
- No-load vibration frequency: up to 45,600 times/minute
- Starting torque: up to 22 mNm
- Operating temperature: -10°C to +60°C
- Rated load (brush head): up to 4.5 g
- Lightweight: from 25 g to 27 g
- Rotor inertia provided for accuracy in dynamic applications

• Key Benefits:

- Designed for highly dynamic environments requiring sustained vibration
- Efficient energy consumption and low starting current ensure compatibility with battery-powered devices
- Broad operating frequency enables precise control
- Customizable shaft length and coil specifications for OEM requirements

• Typical Applications:

- Electric toothbrush actuators
- Portable health care equipment
- High-performance cleaning systems

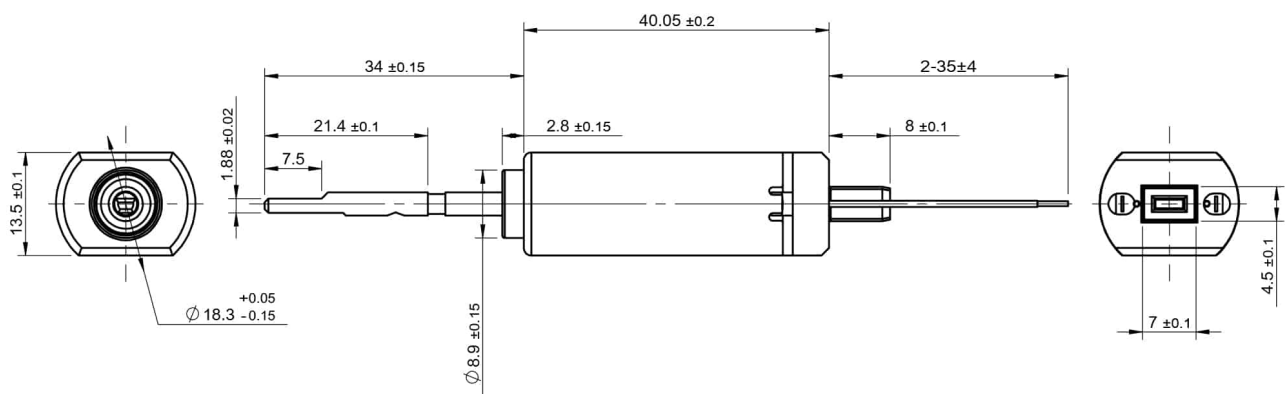
This family is engineered for durability, reliability, and integration flexibility, making it an excellent choice for next-generation compact vibration-intensive devices.



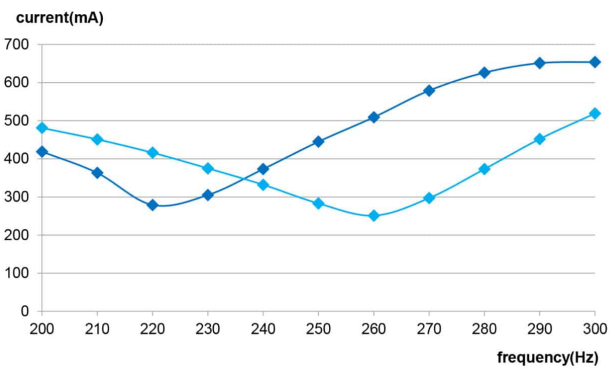
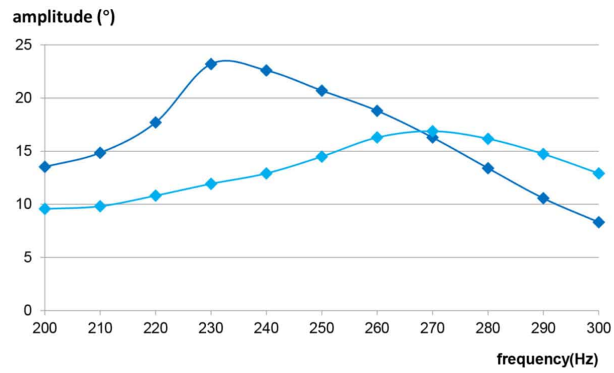
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Motor Specifications	Unit	1840ZDT-2-L202-30-3.7	1840ZDT-3T-L212-35-3.7	1840ZDT-1-L1-30-3.7
Rated voltage	V	3.7	3.7	3.7
Load current	mA	240	400	480
Rotor inertia	gcm ²	0.27	0.47	0.26
Weight	g	25	27	27
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	18.3 + 0.05 - 0.15	18.3 + 0.05 - 0.15	18.3 + 0.05 - 0.15
Motor length	mm	40.05 +/- 0.2	40.05 +/- 0.2	40.05 +/- 0.2
Winding resistance	Ω	8	5.1	3.1
Operating frequency range	Hz	200~400	200~400	200~400
No-load vibration frequency	Times/minute	45600	43200	45600
No-load current	mA	55	70	105
Starting torque	mNm	19	21	22
Starting current	A	0.8	0.9	1
Rated load (Brush head)	g	4.2	3.5	4.5
Load vibration frequency	Times/minute	33600	34800	33000

Drawings



Speed/Thrust Curves



19mm DC Sonic Motor Family

1941ZDF

The **1941ZDF 19mm DC sonic motor family** delivers precision, efficiency, and versatility in compact drive applications. Engineered for high-vibration performance, these DC motors support a wide **operating frequency range of 200–360 Hz** and feature powerful starting torque (up to 22 mNm), making them highly suitable for ultrasonic and oscillating motion requirements.



- **Voltage Options:** 2.5 V and 3.7 V configurations accommodate diverse power environments.
- **Vibration:** No-load frequency up to 38,400 times/min; stable loaded operation at 36,000 times/min.
- **Current Efficiency:** Low no-load current (80–95 mA) and starting current (1–1.1 A) optimize energy consumption.
- **Durability:** Operating temperature range of -10 to +60°C meets challenging ambient demands.
- **Mechanical Properties:** Lightweight (31 g), with precise rotor inertia for smooth operation. Rated for brush head loads up to 3.8 g.
- **Customization:** Options for lead wire length, shaft length, and special coils to tailor motor integration to specific requirements.

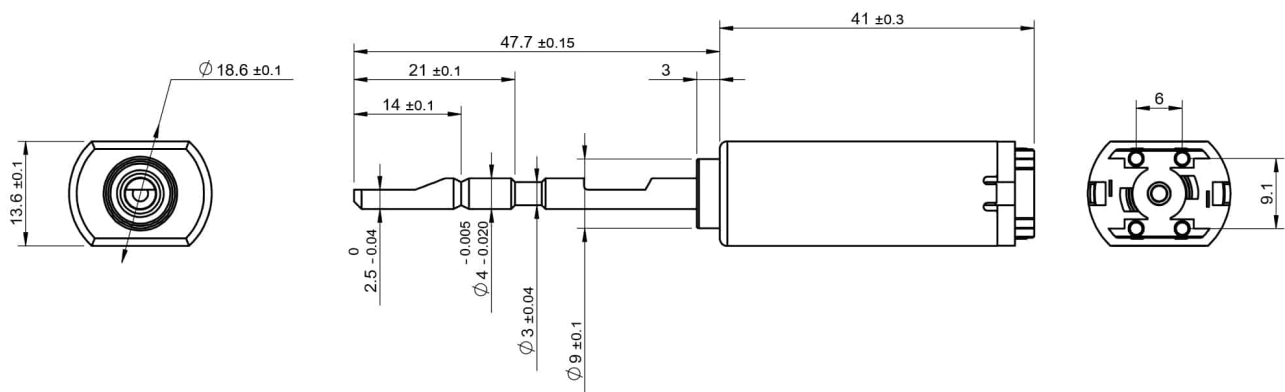
Common applications include **electric toothbrushes, health care devices, and cleaning equipment**, where high-frequency, reliable drive solutions are essential for product performance and longevity. The flexibility, robust construction, and efficiency of the 1941ZDF family make it an industry-leading choice for precision vibratory motion applications.



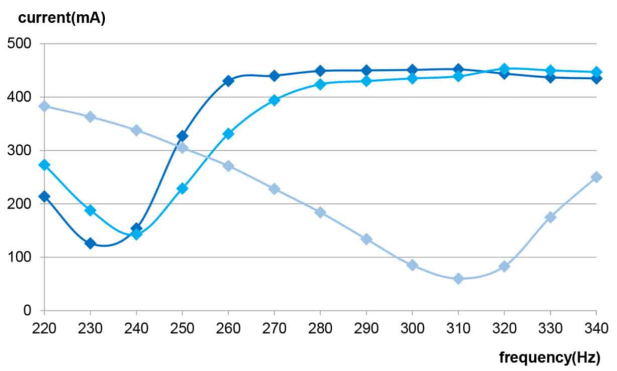
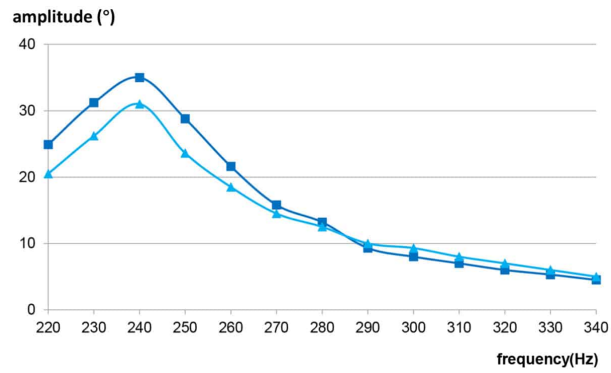
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Motor Characteristics	Unit	1941ZDF-1-L3-2.5	1941ZDF-1-L2-30-3.7	1941ZDF-1K-L4-30-3.7
Rated voltage	V	2.5	3.7	3.7
Load current	mA	360	400	420
Rotor inertia	gcm ²	1.8	1.8	1.8
Weight	g	31	31	31
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	18.6 +/- 0.1	18.6 +/- 0.1	18.6 +/- 0.1
Motor length	mm	41 +/- 0.3	41 +/- 0.3	41 +/- 0.3
Winding resistance	Ω	3.5	3.5	3.7
Operating frequency range	Hz	200-360	200-360	200-360
No-load vibration frequency	Times / minute	38400	38400	38400
No-load current	mA	80	90	95
Starting torque	mNm	22	22	21
Starting current	A	1.1	1.1	1
Rated load (Brush head)	g	3.8	3.8	3.8
Load vibration frequency	Times / minute	36000	36000	36000

Drawings



Speed/Thrust Curves

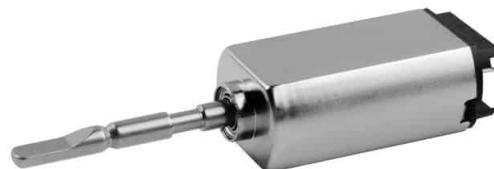


20mm DC Toothbrush Motor

2038ZDF/2040ZDF

2038ZDF/2040ZDF 20mm DC Electric Toothbrush

Motors offer a reliable, high-performance solution for demanding handheld health care and cleaning applications.



- **Voltage:** 3.7 V nominal, supporting consistent power delivery in compact, battery-powered devices.
- **Performance:** Achieves no-load vibration frequencies up to 34,800 times/min and maintains 31,000 times/min under rated load, ensuring thorough and efficient cleaning performance.
- **Torque & Current:** Delivers starting torques up to 23 mNm and rated load handling for brush head applications, with starting currents from 1.15 to 1.2 A and low load currents (400-500 mA typical).
- **Construction & Durability:** Features 3.2 Ω resistance, just 31g total weight, and is designed for durability within operating temperature ranges of -10°C to +60°C.
- **Customizable Options:** Available with variable shaft lengths and custom coil configurations to adapt to unique design requirements.

Typical Applications:

- Electric toothbrushes – high-frequency oscillations for superior cleaning
- Health care equipment – consistent, compact power for portable tools
- Precision cleaning devices – stable operation in vibration-based cleaning modules

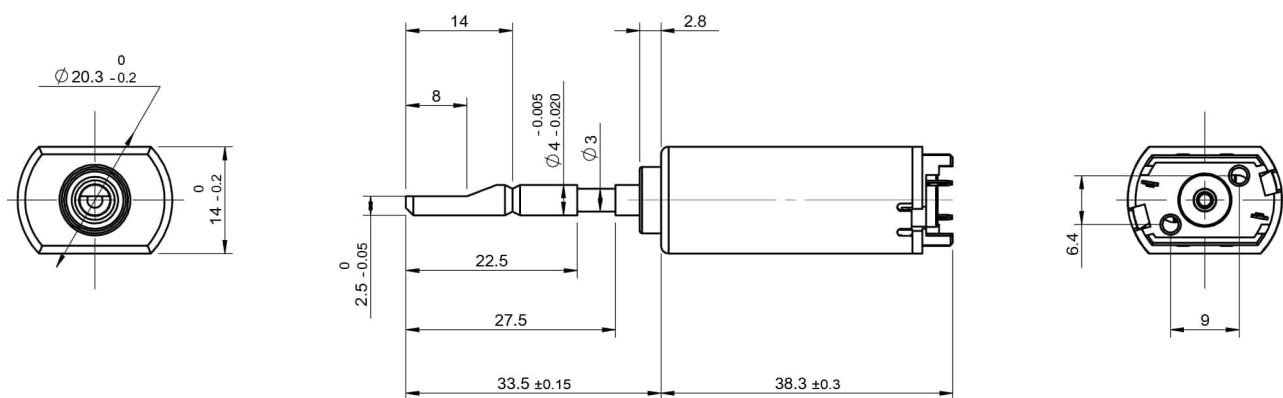
Benefits: The motors deliver outstanding reliability, long life, and strong vibration output, meeting the rigorous demands of personal and medical care sectors. Customization support enables seamless device integration, while their compact design maximizes device ergonomics and battery efficiency.



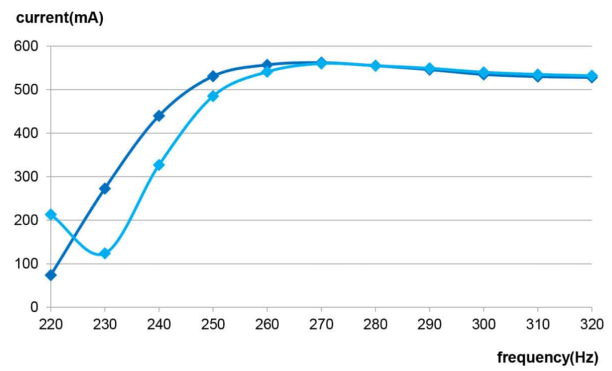
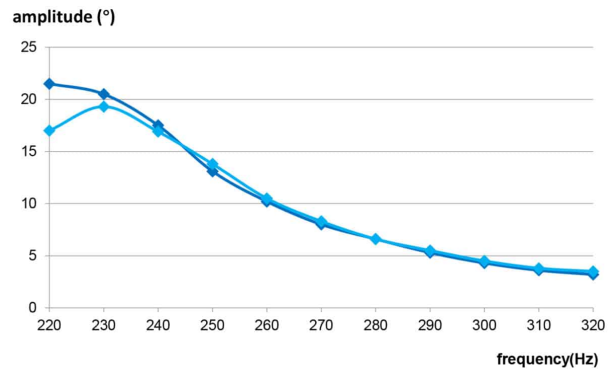
<https://www.kocomotion.de/produkt/2038zdf-2040zdf/>

Motor Specifications	Unit	2038ZDF-BW-3-L4-3.7	2038ZDF-ET-L4-3.7	2040ZDF-3-L1-3.7
Rated voltage	V	3.7	3.7	3.7
Load current	mA	400	450	500
Rotor inertia	gcm ²	2.4	2.4	2.4
Weight	g	31	31	31
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	20.3 - 0.2	20.3 - 0.2	20.3 - 0.2
Motor length	mm	38.3 +/- 0.3	38.3 +/- 0.3	38.3 +/- 0.3
Winding resistance	Ω	3.2	3.2	3.2
Operating frequency range	Hz	230-330	220-320	220-320
No-load vibration frequency	Times/minute	34800	34800	34800
No-load current	mA	90	95	90
Starting torque	mNm	22	22	23
Starting current	A	1.15	1.15	1.2
Rated load (Brush head)	g	4.4	4.4	4.4
Load vibration frequency	Times/minute	31000	31000	31000

Drawings



Speed/Thrust Curves



27mm Brushless Sonic Vibration Motor

2724ZDR

2724ZDR Series - 27mm Brushless Sonic Vibration Motors



- **High-Performance Vibration:** Delivers up to 26,400 cycles/min no-load frequency and strong starting torque (up to 54 mNm), ensuring effective oscillation for demanding applications.
- **Versatile Operating Range:** Supports 2.5V to 5.0V input and a wide frequency range (100-220 Hz), accommodating various design requirements.
- **Low-Power, Efficient Operation:** Consumes minimal current (135-180 mA no-load, 410-500 mA loaded) while maintaining consistent performance. Rotor inertia is 1.35 gcm² and total weight is 49 g.
- **Robust Construction:** Reliable operation from -10°C to +60°C for use in diverse environments.
- **Precision Applications:** Designed for facial brushes, massagers, healthcare devices, and cleaning equipment requiring sonic vibration control.
- **Customizable Options:** Tailor lead wire length, shaft length, and special coils for system integration.

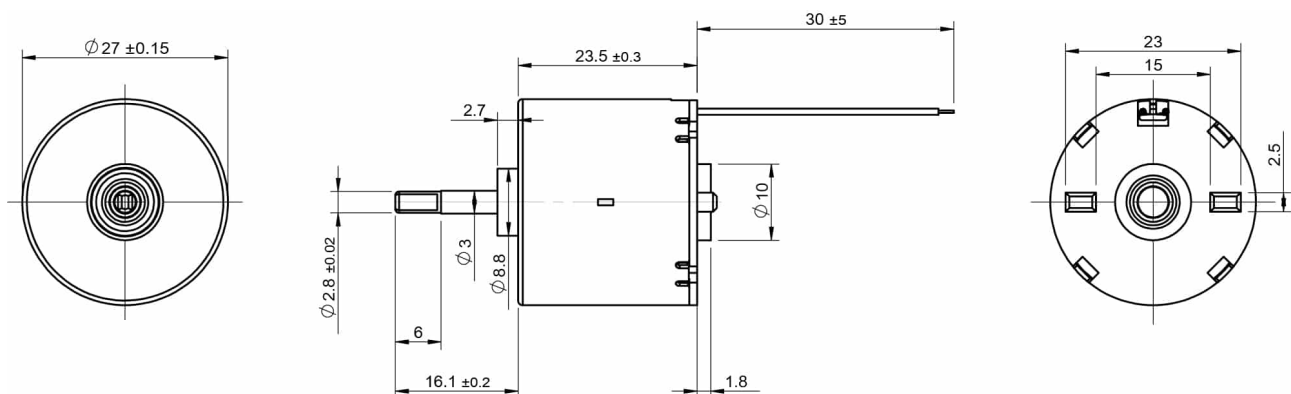
The 2724ZDR series is engineered for OEMs and system integrators prioritizing efficient, reliable vibration actuation in compact form. Its brushless design ensures durability, while flexible configuration options optimize fit and function for diverse end products.



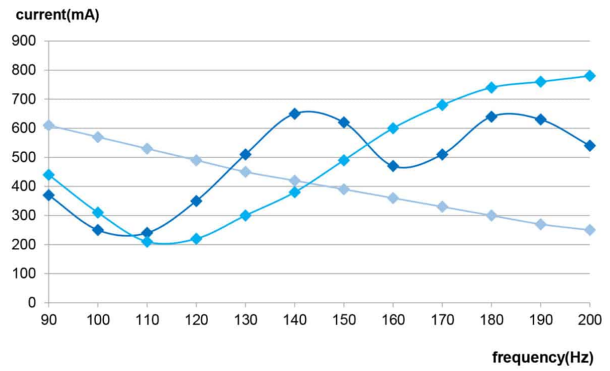
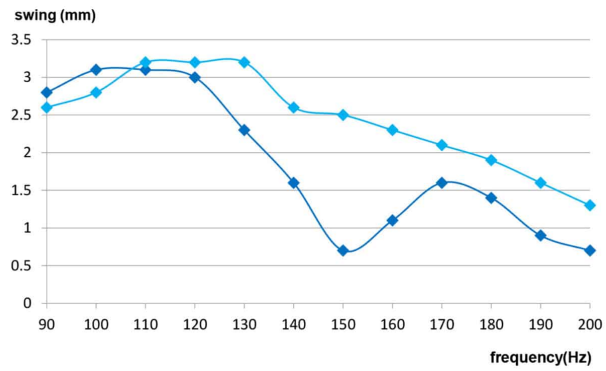
<https://www.kocomotion.de/produkt/2724zdr/>

Characteristics	Unit	2724ZDR-1-L7-30-3.7	2724ZDR-1-L14-50-2.5	2724ZDR-1-L19-35-5.0
Rated voltage	V	3.7	2.5	5.0
Load current	mA	450	410	500
Rotor inertia	gcm ²	1.35	1.35	1.35
Weight	g	49	49	49
Operating temperature	°C	-10~+60	-10~+60	-10~+60
Outer diameter	mm	27 +/- 0.15	27 +/- 0.15	27 +/- 0.15
Motor length	mm	23.5 +/- 0.3	23.5 +/- 0.3	23.5 +/- 0.3
Winding resistance	Ω	2.2	2.2	2.2
Operating frequency range	Hz	100-220	100-220	100-220
No-load vibration frequency	Times / minute	26400	26400	26400
No-load current	mA	150	135	180
Starting torque	mNm	40	27	54
Starting current	A	1.7	1.15	2.3
Rated load (Brush head)	g	10/31	10/31	10/31
Load vibration frequency	Times / minute	20400	20400	20400

Drawings



Speed/Thrust Curves



Brushless Sonic Vibration Motor

2734ZDR

The **2734ZDR series brushless sonic vibration motors** deliver dependable and precise high-frequency vibration performance for professional applications. Designed for use at **3.7V or 5.0V operating voltages**, these motors achieve vibration frequencies up to **30,000 times per minute (no-load)** and **20,400 times per minute under load**. Their wide operating frequency range (100–240 Hz) and robust construction make them ideal for devices requiring consistent and powerful vibration.



- **Key Technical Specifications:**

- Operating voltage: 3.7V & 5.0V versions
- No-load current: 150–220 mA
- Starting torque: 56–75 mNm
- Operating temperature: -10°C to +60°C
- Compact and lightweight: 76g unit weight
- Rotor inertia: 2.4 gcm²

- **Applications:** ideal for **facial brushes, massagers, health care products, and cleaning equipment** requiring stable, high-speed sonic vibration.

- **Available Options:** Custom lead wire length, shaft length, and special coil configurations support tailored integration.

- **Benefits:**

- Brushless design enhances durability and reduces maintenance
- High vibration accuracy supports demanding precision applications
- Flexible customization supports unique design requirements

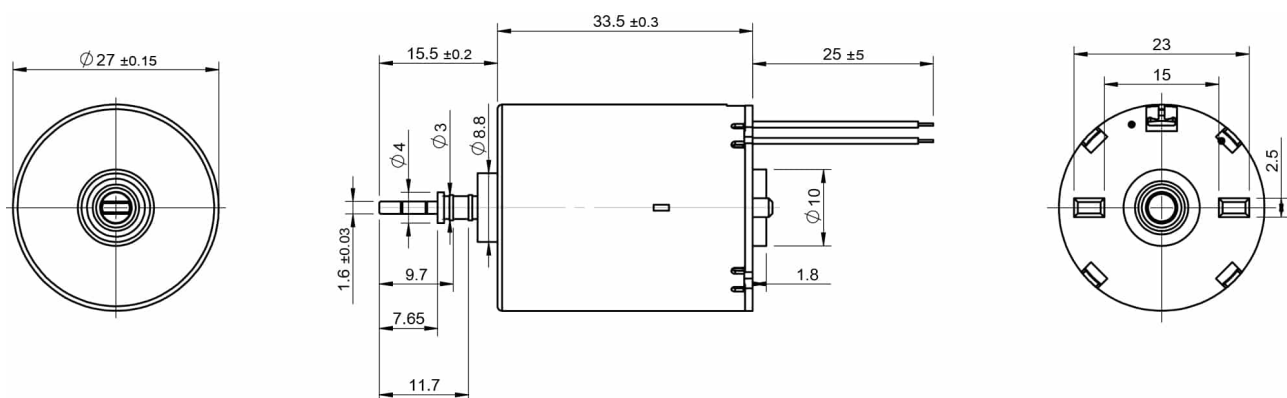
With its blend of high performance, reliability, and configurability, the 2734ZDR series is the optimal solution for innovative personal care and technical cleaning equipment.



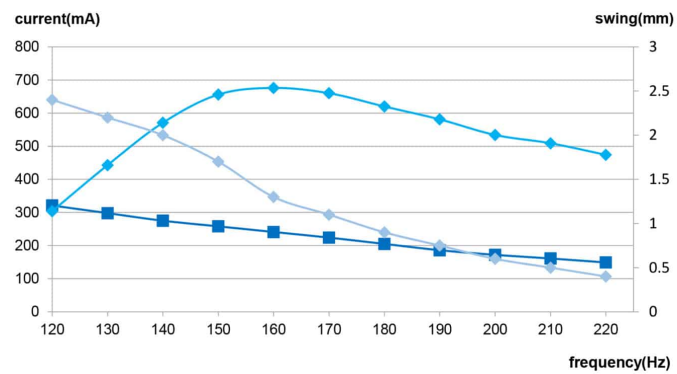
<https://www.kocomotion.de/produkt/2734zdr/>

Characteristics	Unit	2734ZDR-1-L2-30-3.7	2734ZDR-2-L13-30-3.7	2734ZDR-1-L3-25-5.0
Rated voltage	V	3.7	3.7	5.0
Load current	mA	580	630	670
Rotor inertia	gcm ²	2.4	2.4	2.4
Weight	g	76	76	76
Operating temperature	°C	-10 +60	-10 +60	-10 +60
Outer diameter	mm	27 +/- 0.15	27 +/- 0.15	27 +/- 0.15
Motor length	mm	33.5 +/- 0.3	33.5 +/- 0.3	33.5 +/- 0.3
Winding resistance	Ω	3.0	2.5	3.0
Operating frequency range	Hz	100~240	100~240	100~240
No-load vibration frequency	Times / minute	30000	30000	30000
No-load current	mA	150	220	150
Starting torque	mNm	56	56	75
Starting current	A	1.23	1.48	1.67
Rated load (Brush head)	g	13.8/41	13.8/41	13.8/41
Load vibration frequency	Times / minute	20400	20400	20400

Drawings



Speed/Thrust Curves





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