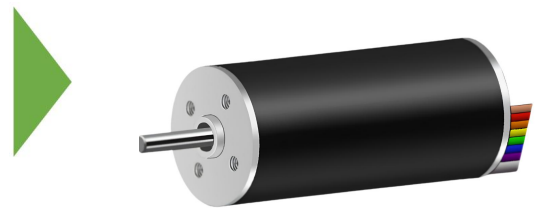


BDCL Series

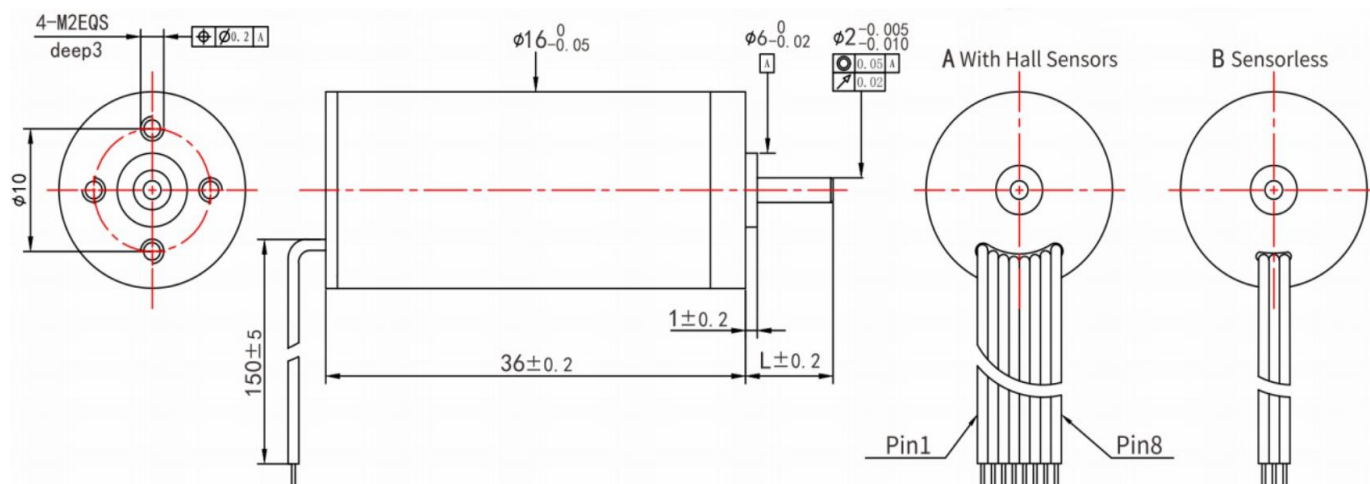
Coreless Brushless DC Motor



BDCL1636 Motor Data

7-18W

Motor Model	Unit	BDCL1636-01	BDCL1636-02	BDCL1636-03	BDCL1636-04
Value at Rated voltage					
At Nominal					
1. Nominal voltage	V/DC	9	12	18	24
2. Nominal speed	rpm	15355	14760	15258	14276
3. Nominal current	A	1.51	1.19	0.71	0.56
4. Nominal torque	mNm	6.39	6.57	5.38	5.90
Free Load					
5. No-load speed	rpm	18500	18000	17950	17200
6. No-load current	mA	180	135	130	100
At Max. Efficiency					
7. Max. efficiency	%	72.2	72.2	67.2	65.8
8. Speed	rpm	16095	15660	15168	14448
9. Current	A	1.197	0.897	0.730	0.532
10. Torque	mNm	4.6	4.74	5.56	5.55
At Max. Output power					
11. Max.output power	W	17.2	17.2	16.8	15.6
12. Speed	rpm	9250	9000	8975	8600
13. Current	A	4.1	3.1	2.1	1.5
14. Torque	mNm	17.8	18.25	17.93	17.35
At Stall					
15. Stall current	A	8.00	6.00	4.00	2.80
16. Stall torque	mNm	35.5	36.50	35.85	34.69
Motor Constants					
17. Terminal resistance	Ω	1.13	2.00	4.50	8.57
18. Terminal inductance	mH	0.07	0.125	0.282	0.265
19. Torque constant	mNm/A	4.54	6.22	9.26	12.85
20. Speed constant	rpm/V	2056	1500	997	717
21. Speed/torque constant	rpm/mNm	521.0	493.2	500.6	495.8
22. Mechanical time constant	ms	2.73	2.58	2.62	2.60
23. Rotor inertia	gcm ²	0.50	0.50	0.50	0.50
24. Number of pole pairs		1			
25. Number of phase		3			
26. Weight of motor	g	29			
27. Typical noise level	dB	≤50			

Motor Drawing (mm)**Φ16*L36mm****Technical Specifications**

1. Axial play: 0.05–0.15 mm
2. Sintered metal bearing load limits:
 - Max. axial load (dynamic): 0.8 N
 - Max. radial load (5 mm from flange): 8 N
 - Max. press fit force (static): 10 N
3. Radial play: ≤ 0.015 mm
4. Ambient temperature range: -20 to +80°C
5. Relative humidity: <90% RH at 25°C
6. Highest rotor temperature: 85°C
7. Bearing options: Ball bearing / Sleeve bearing

Values listed in the table are nominal.

Motor terminal definition

1. **Without sensor:** 1 – Motor Phase A; 2 – Motor Phase B; 3 – Motor Phase C
2. **With sensor:** 1 – Hall Sensor A; 2 – Hall Sensor B; 3 – Hall Sensor C; 4 – VHall (3.5–25 VDC); 5 – GND; 6 – Motor Phase A; 7 – Motor Phase B; 8 – Motor Phase C

Cable, connector, and wire sequence can be customized. The above information is for reference only; the actual product configuration shall prevail.

Optional Parts

1. Planetary gearbox
2. Magnetoelectric encoder

