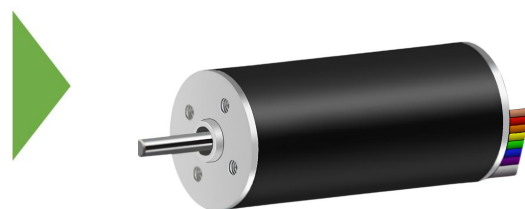


BDCL Series

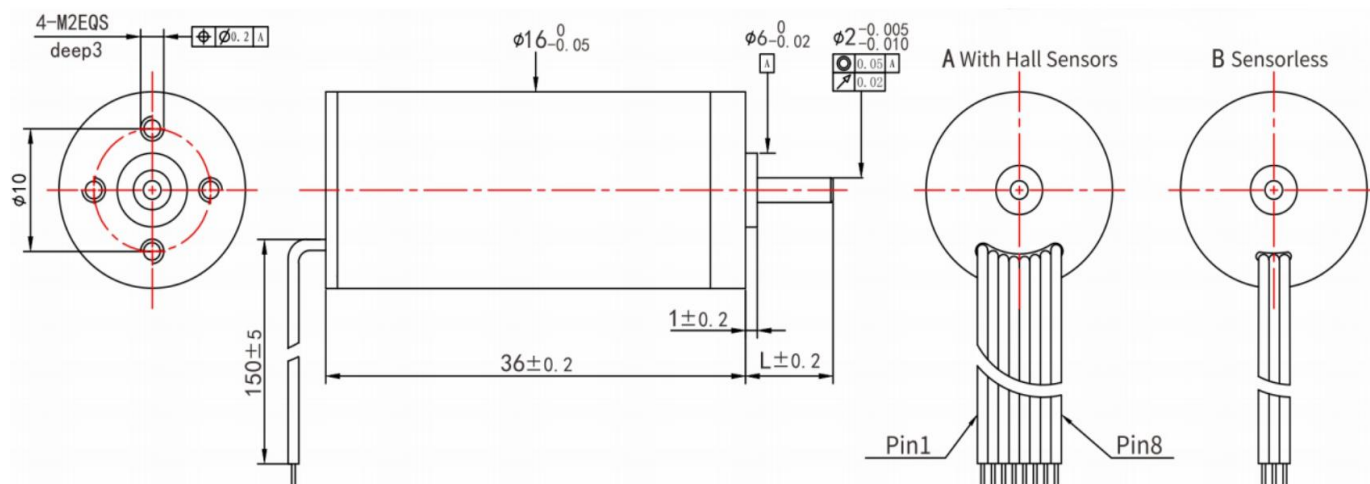
Coreless Brushless DC Motor



BDCL1636-H Motor Data

25-55W

Motor Model	Unit	BDCL1636-H-01	BDCL1636-H-02	BDCL1636-H-03	BDCL1636-H-04
Value at Rated voltage					
At Nominal					
1. Nominal voltage	V/DC	12	18	24	36
2. Nominal speed	rpm	56550	50895	54375	49590
3. Nominal current	A	2.67	1.66	1.32	0.95
4. Nominal torque	mNm	4.19	4.20	4.13	4.76
Free Load					
5. No-load speed	rpm	65000	58500	62500	58000
6. No-load current	mA	260	200	170	130
At Max. Efficiency					
7. Max. efficiency	%	77.9	75.3	74.4	72.3
8. Speed	rpm	58175	51773	55313	50460
9. Current	A	2.207	1.488	1.185	0.867
10. Torque	mNm	3.4	3.72	3.65	4.27
At Max. Output power					
11. Max.output power	W	54.9	49.5	52.0	49.9
12. Speed	rpm	32500	29250	31250	29000
13. Current	A	9.5	5.8	4.6	3.0
14. Torque	mNm	16.1	16.17	15.88	16.43
At Stall					
15. Stall current	A	18.80	11.40	9.00	5.80
16. Stall torque	mNm	32.2	32.33	31.77	32.85
Motor Constants					
17. Terminal resistance	Ω	0.64	1.58	2.67	6.21
18. Terminal inductance	mH	0.020	0.051	0.086	0.210
19. Torque constant	mNm/A	1.74	2.89	3.60	5.79
20. Speed constant	rpm/V	5416.7	3250.0	2604.2	1611.1
21. Speed/torque constant	rpm/mNm	2017	1809	1967	1765
22. Mechanical time constant	ms	7.66	6.87	7.47	6.70
23. Rotor inertia	gcm ²	0.36	0.36	0.36	0.36
24. Number of pole pairs		1			
25. Number of phase		3			
26. Weight of motor	g	23			
27. Typical noise level	dB	≤55			

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

