

BDCL Series

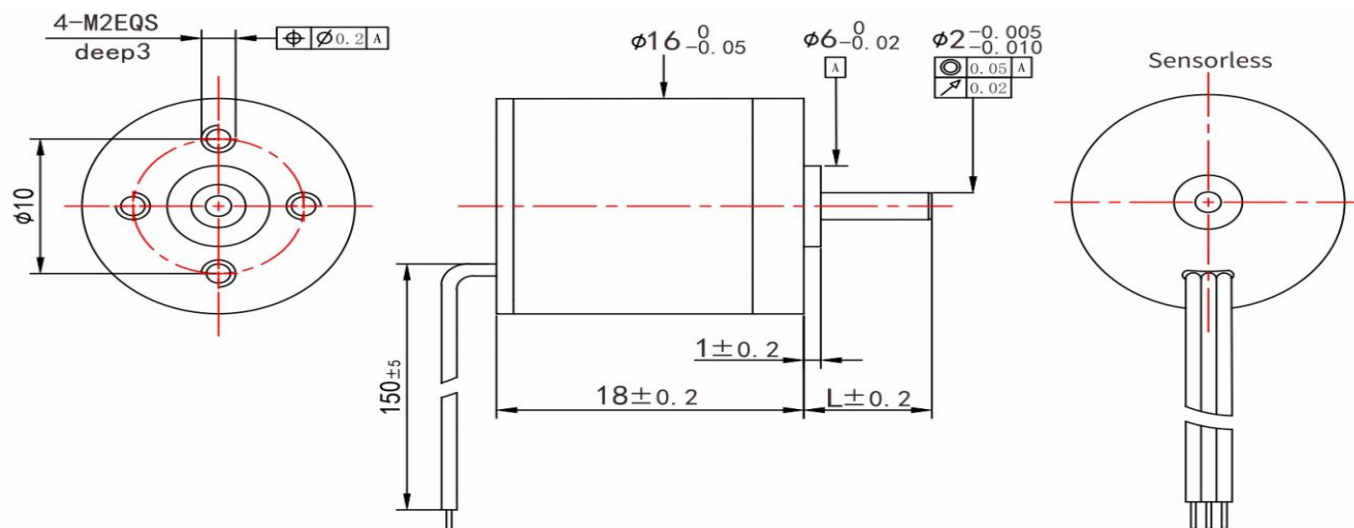
Coreless Brushless DC Motor



BDCL1618 Motor Data

1-2W

Motor Model	Unit	BDCL1618-01	BDCL1618-02	BDCL1618-03	BDCL1618-04
Value at Rated voltage					
At Nominal					
1. Nominal voltage	V/DC	9	12	18	24
2. Nominal speed	rpm	11550	8624	11935	11165
3. Nominal current	A	0.28	0.12	0.14	0.10
4. Nominal torque	mNm	1.11	0.90	1.13	1.10
Free Load					
5. No-load speed	rpm	15000	11200	15500	14500
6. No-load current	mA	70	30	30	25
At Max. Efficiency					
7. Max. efficiency	%	53.7	54.6	57.0	53.7
8. Speed	rpm	11850	8904	12478	11455
9. Current	A	0.261	0.114	0.122	0.093
10. Torque	mNm	1.0	0.80	0.96	1.00
At Max. Output power					
11. Max.output power	W	1.9	1.1	2.0	1.8
12. Speed	rpm	7500	5600	7750	7250
13. Current	A	0.5	0.2	0.3	0.2
14. Torque	mNm	2.4	1.95	2.45	2.38
At Stall					
15. Stall current	A	0.98	0.44	0.50	0.35
16. Stall torque	mNm	4.8	3.91	4.90	4.77
Motor Constants					
17. Terminal resistance	Ω	9.18	27.27	36.00	68.57
18. Terminal inductance	mH	0.019	0.045	0.076	0.145
19. Torque constant	mNm/A	5.32	9.53	10.42	14.68
20. Speed constant	rpm/V	1666.7	933.3	861.1	604.2
21. Speed/torque constant	rpm/mNm	3098	2865	3164	3040
22. Mechanical time constant	ms	3.67	3.40	3.75	3.60
23. Rotor inertia	gcm ²	0.11	0.11	0.11	0.11
24. Number of pole pairs		1			
25. Number of phase		3			
26. Weight of motor	g	18			
27. Typical noise level	dB	≤50			

Motor Drawing (mm)**Φ16*L18mm****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

Motor terminal definition

1. Without sensor:
 - Pin 1: Motor Phase A Pin 2: Motor Phase B
 - Pin 3: Motor Phase C
2. With sensor:
 - Pin 1: Hall Sensor A Pin 2: Hall Sensor B
 - Pin 3: Hall Sensor C Pin 4: Hall Sensor Supply, 3.5-25 VDC
 - Pin 5: GND Pin 6: Motor Phase A
 - Pin 7: Motor Phase B Pin 8: Motor Phase C

Note: Cables, connectors, and pinout are customizable.
Final configuration may vary by product.

Optional Parts

1. Planetary gearbox
2. Magnetoelectric encoder

