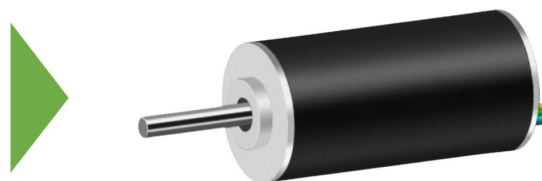


BDCL Series

Coreless Brushless DC Motor

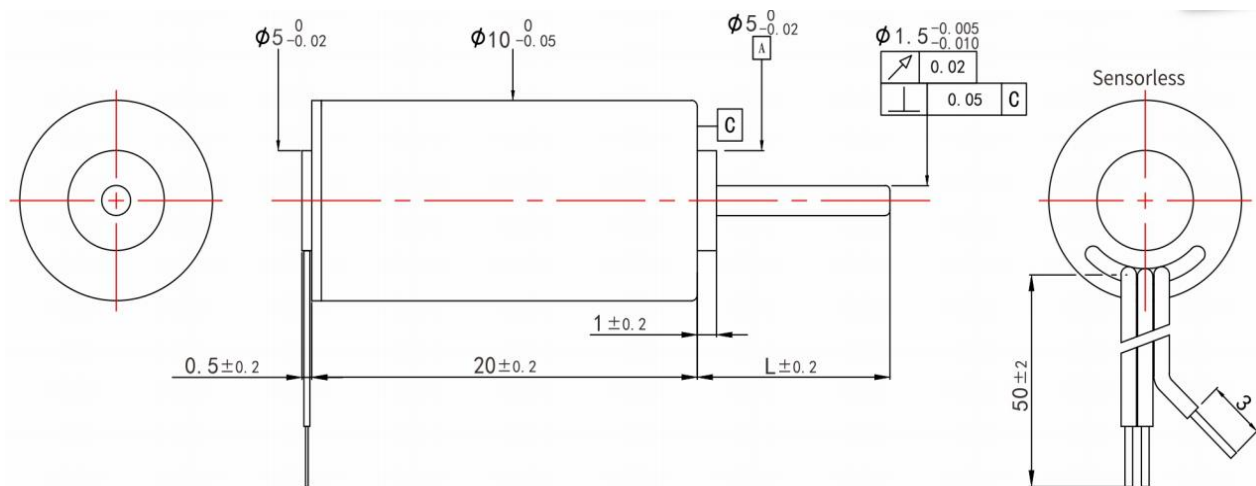


BDCL1020 Motor Data

3-20W

Motor Model	Unit	BDCL1020-01	BDCL1020-02	BDCL1020-03
Value at Rated voltage				
At Nominal				
1. Nominal voltage	V/DC	7	9	12
2. Nominal speed	rpm	79640	40725	39150
3. Nominal current	A	1.64	0.44	0.36
4. Nominal torque	mNm	0.92	0.42	0.51
Free Load				
5. No-load speed	rpm	88000	45000	45000
6. No-load current	mA	400	200	140
At Max. Efficiency				
7. Max. efficiency	%	68.5	53.0	52.0
8. Speed	rpm	75240	35325	35100
9. Current	A	2.300	0.738	0.505
10. Torque	mNm	1.4	1.0	0.86
At Max. Output power				
11. Max.output power	W	22.2	5.2	4.6
12. Speed	rpm	44000	22500	22500
13. Current	A	7.0	1.5	1.0
14. Torque	mNm	4.8	2.2	1.95
At Stall				
15. Stall current	A	13.50	2.70	1.80
16. Stall torque	mNm	9.7	4.4	3.90
Motor Constants				
17. Terminal resistance	Ω	0.52	3.33	6.67
18. Terminal inductance	mH	0.150	0.950	1.650
19. Torque constant	mNm/A	0.74	1.77	2.35
20. Speed constant	rpm/V	12571	5000	3750
21. Speed/torque constant	rpm/mNm	9114	10179	11543
22. Mechanical time constant	ms	6.08	6.80	7.71
23. Rotor inertia	gcm ²	0.064	0.064	0.064
24. Number of pole pairs		1		
25. Number of phase		3		
26. Weight of motor	g	8.5		
27. Typical noise level	dB	≤50		

Motor Drawing (mm) $\Phi 10 \times L20\text{mm}$



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 (25°C)
6. Maximum rotor temperature: 85°C

Motor terminal definition

1. Motor wire sequence(Without sensor):

- 1 — Motor Phase A
- 2 — Motor Phase B
- 3 — Motor Phase C

2. Customization notice:

Cables, connectors, and wire sequence can be customized. The information above is for reference only; the final output terminal is subject to the actual product.

Optional Parts

1. Planetary gearbox

