

BDCM Series

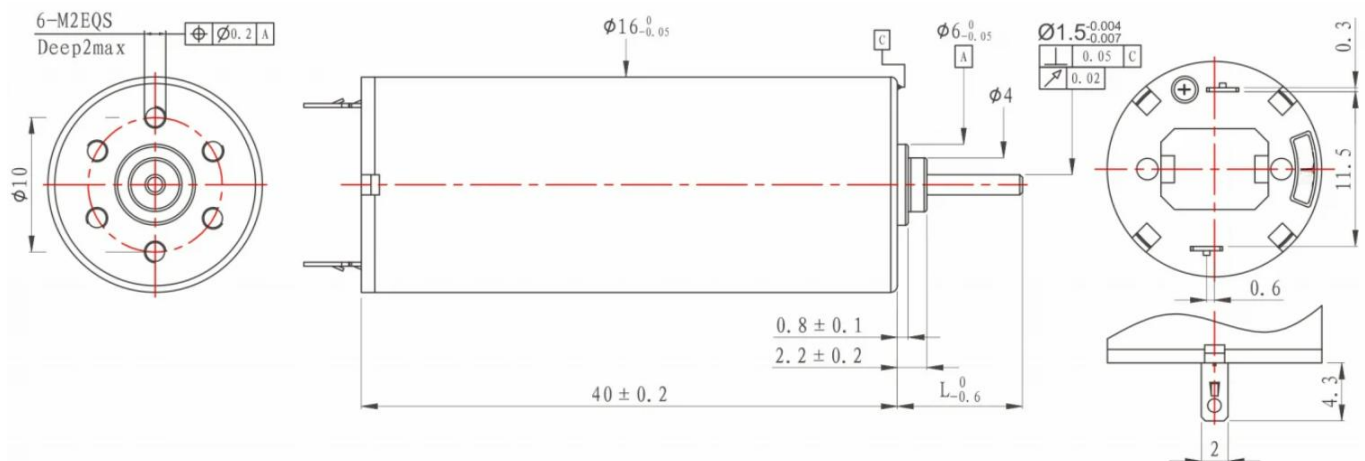
Coreless Precious Metal Brushed DC Motor



BDCM1640 Motor Data

3-7W

Motor Model	Unit	BDCM1640-01	BDCM1640-02	BDCM1640-03	BDCM1640-04
Value at Rated voltage					
At Nominal					
1. Nominal voltage	V/DC	6	9	12	24
2. Nominal speed	rpm	9847	11635	6372	6489
3. Nominal current	A	0.47	0.54	0.14	0.07
4. Nominal torque	mNm	2.20	3.19	1.92	1.87
Free Load					
5. No-load speed	rpm	11002	13000	7120	7250
6. No-load current	mA	40	50	15	13
At Max. Efficiency					
7. Max. efficiency	%	81.2	80.3	78.6	72.5
8. Speed	rpm	9902	11700	6408	6525
9. Current	A	0.446	0.516	0.131	0.071
10. Torque	mNm	2.1	3.0	1.8	1.8
At Max. Output power					
11. Max.output power	W	6.0	10.3	3.4	3.4
12. Speed	rpm	5501	6500	3560	3625
13. Current	A	2.1	2.4	0.6	0.3
14. Torque	mNm	10.5	15.2	9.2	8.9
At Stall					
15. Stall current	A	4.10	4.70	1.17	0.59
16. Stall torque	mNm	20.9	30.4	18.4	17.8
Motor Constants					
17. Terminal resistance	Ω	1.46	1.91	10.26	40.68
18. Terminal inductance	mH	0.073	0.071	0.452	1.75
19. Torque constant	mNm/A	5.11	6.47	15.68	30.23
20. Speed constant	rpm/V	1833.7	1444.4	593.3	302.1
21. Speed/torque constant	rpm/mNm	525.5	427.6	388.0	406.1
22. Mechanical time constant	ms	7.22	6.15	5.28	5.32
23. Rotor inertia	gcm ²	1.31	1.32	1.3	1.23
24. Number of pole pairs		1			
25. Number of phase		5			
26. Weight of motor	g	30			
27. Typical noise level	dB	≤38			

Motor Drawing (mm)**Φ16*L40mm****Technical Specifications**

1. Axial play: 0.05-0.15 mm
2. Sintered metal bearing load limits:
 - Max. axial load (dynamic): 0.5 N
 - Max. radial load (5 mm from flange): 5 N
 - Max. press fit force (static): 15 N
3. Radial play: ≤ 0.012 mm
4. Ambient temperature range: -20 to +80°C
5. Relative humidity range: <90% (25°C)
6. Highest rotor temperature: 125°C

Values listed in the table are nominal.

Motor terminal definition

1. + Vcc
2. - GND

Optional Parts

1. Planetary gearbox
2. Photoelectric encoder/magnetoelectric encoder

