



Φ 40-20215-24 Brushless DC Motor Product Datasheet

Φ 40-20215-24 BLDC Overview

- Three Phase, Six Step, Full Wave, Y-Circuit
- Sintered Nd-Fe-B Permanent Magnet Rotor
- Hall Sensor / Sensorless
- Step (Cogging)
- Slot

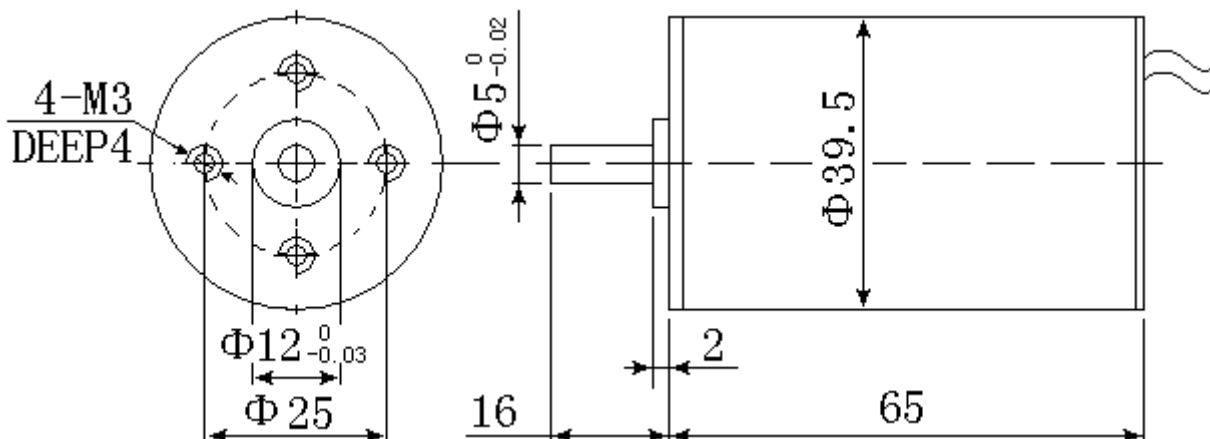


Parameter	Φ 40-20215-24 BLDC Absolute Maximum Ratings	Unit
Continuous Current (At Nominal Voltage)	7.1	A
Speed	10,000	rpm
Winding and Rotor Temperature	-20 to +150	°C
Ambient Temperature	-20 to +85	°C

Notice: The Absolute Maximum Ratings are those values beyond which the safety of the device cannot be guaranteed.

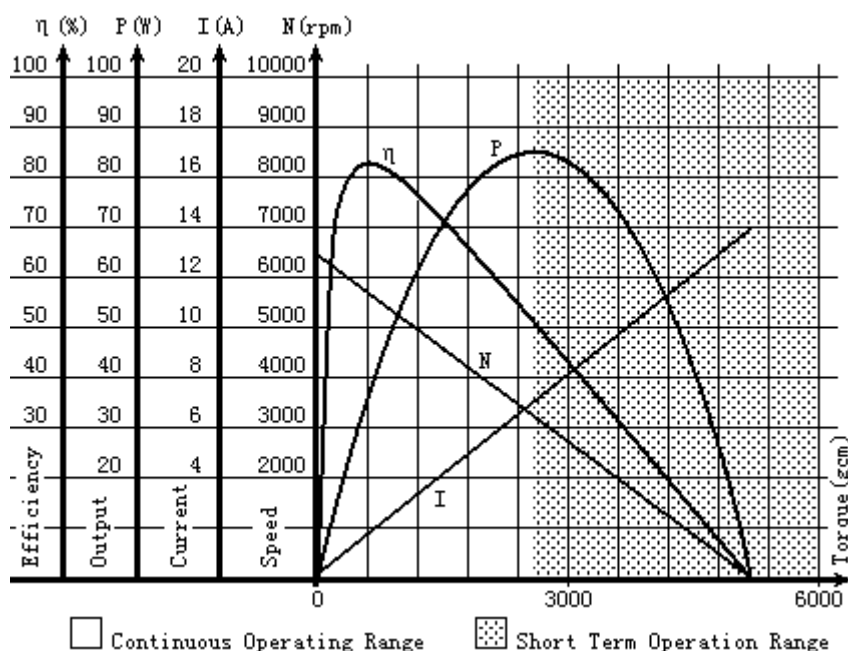
Parameter	Φ 40-20215-24 BLDC Intrinsic Characteristics (20 °C)	Unit
Resistance (Including 0.5m Line)	1.2	Ohm
Speed/Torque Gradient	1.24	rpm/gcm
Torque Constant	268	gcm/A
Speed Constant	269	rpm/V
Back-EMF Constant	3.68	mV/rpm
Rotor Magnetic Poles	4	Poles
Ball Bearing No Load Continuous Life (At Nominal Voltage)	15,000 <u>(Please order if have special requirement)</u>	Hours
Weight (Including 0.5m Line)	Approximate 280	g

Φ 40-20215-24 BLDC Physical Size (Unit: mm)



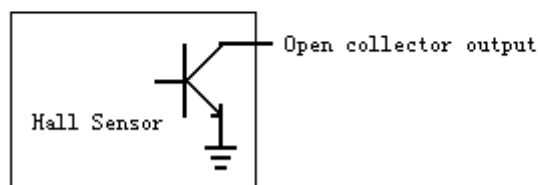
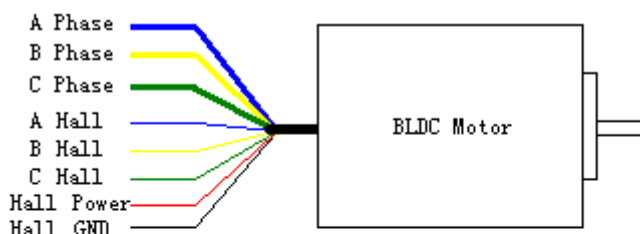


Parameter	Φ 40-20215-24 BLDC Performance Characteristics (20 °C)					Unit
Nominal Voltage	24					V
Maximum Output Power	85					W
(See Curves Below)	No Load Point	Some Loaded Points (For Reference Only)				
Output Power	0	20	40	60	80	W
Current	0.2	1.1	2.0	3.3	5.4	A
Speed	6,450	6,000	5,600	5,000	4,000	rpm
Output Torque	0	320	700	1,160	1,950	gcm
Efficiency	0	76	83	76	62	%
Free-convection Cooling	If the shell temperature of the motor is higher than 85 °C, fan or other cooling equipments must be installed. Otherwise the motor may be damaged by hotness.					



Φ 40-20215-24 BLDC Connection Diagram and Hall Output Waveforms

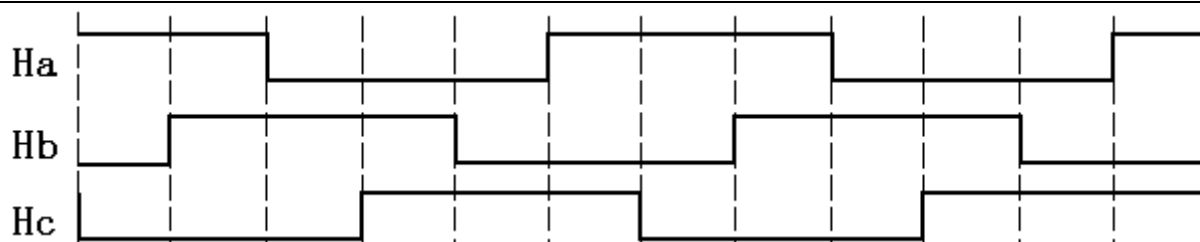
- Connection: Blue thick--A phase, Yellow thick--B phase, Green thick--C phase, Blue thin--A hall, Yellow thin--B hall, Green thin--C hall, Red thin--Hall power supply, Black thin--Hall GND
- Hall Voltage: 4.5 to 16VDC Regulated Supply
- Hall Power Supply Current: Less than 30mA
- Hall Output: Open collector. Require external pull-up resistors for proper logical operation. Maximum output voltage is 16V
- Electrical Hall Sensor Phasing: 120°
- Line Length: 0.5m, (Please order if have special requirement)





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Hall Sensor Output Commutation Waveforms

Notice: The A, B, C three windings and Ha, Hb, Hc three hall sensors must be connected correctly, otherwise the controller and motor may be damaged.

Eletechnic BLDC Motor Type Code Regulation

X - Y - Z

Flange Size (mm) Sub-series Nominal Voltage (V)



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Page 3

