Φ40-4027-24 Brushless DC Motor Product Datasheet

Φ40-4027-24 BLDC Overview

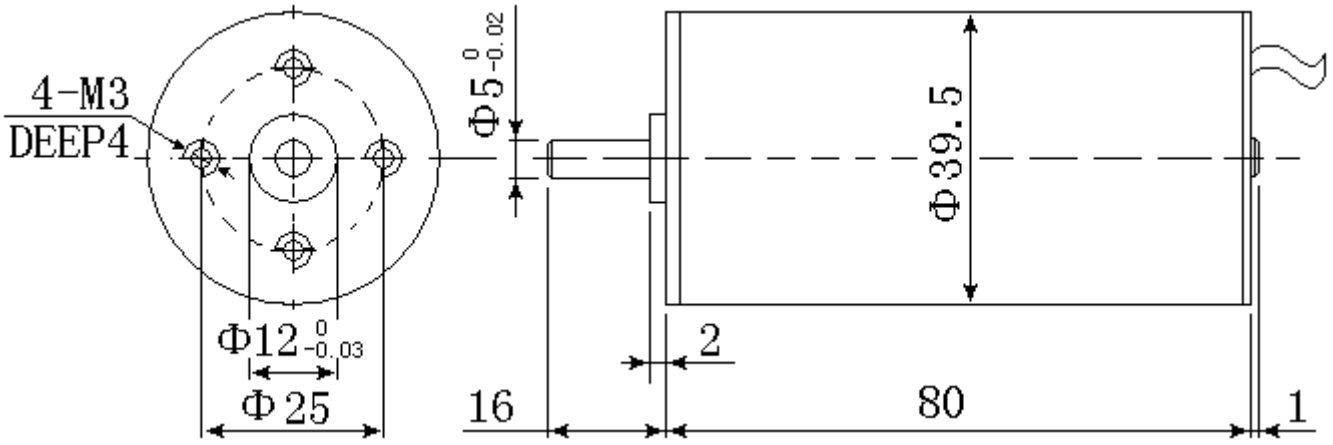
- Three Phase, Six Step, Full Wave, Y-Circuit
- Sintered Nd-Fe-B Permanent Magnet Rotor
- Hall Sensor / Sensorless
- Step (Cogging)
- Slot

Parameter	Φ40-4027-24 BLDC Absolute Maximum Ratings	Unit
Continuous Current (At Nominal Voltage)	11.5	A
Speed	10,000	rpm
Winding and Rotor Temperature	-20 to +150	℃
Ambient Temperature	-20 to +85	℃

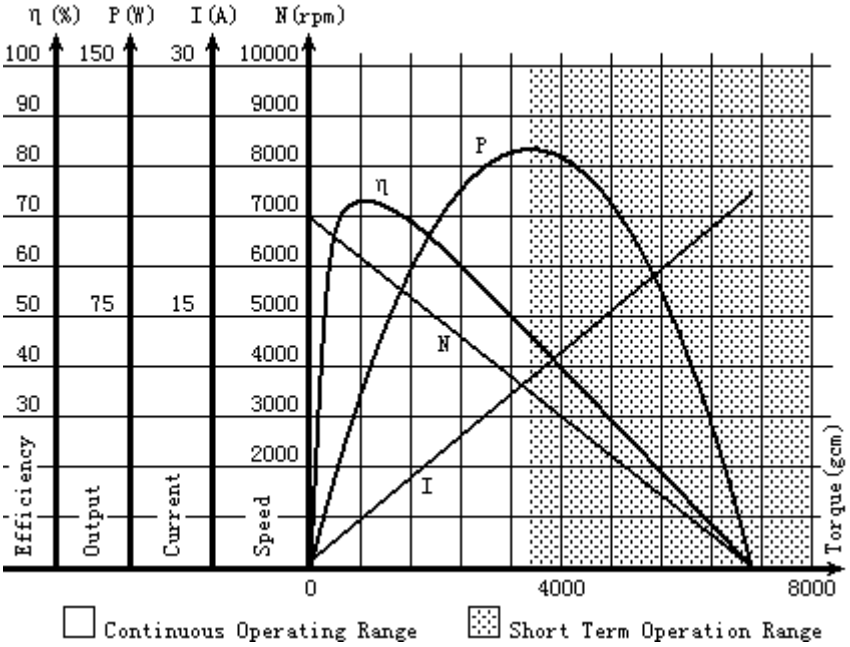
Notice: The Absolute Maximum Ratings are those values beyond which the safety of the device cannot be guaranteed.

Parameter	Φ40-4027-24 BLDC Intrinsic Characteristics (20 ℃)	Unit
Resistance (Including 0.5m Line)	0.42	Ohm
Speed/Torque Gradient	0.99	rpm/gcm
Torque Constant	314	gcm/A
Speed Constant	290	rpm/V
Back-EMF Constant	3.43	mV/rpm
Rotor Magnetic Poles	4	Poles
Ball Bearing No Load Continuous Life (At Nominal Voltage)	15,000 (Please order if have special requirement)	Hours
Weight (Including 0.5m Line)	Approximate 400	g

Φ40-4027-24 BLDC Physical Size (Unit: mm)

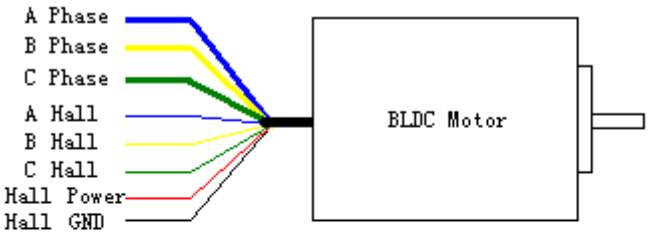


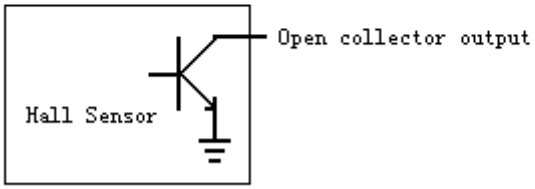
Parameter	Φ40-4027-24 BLDC Performance Characteristics (20 ℃)					Unit
Nominal Voltage	24					V
Maximum Output Power	126					W
(See Curves Below)	No Load Point	Some Loaded Points (For Reference Only)				
Output Power	0	40	60	80	100	W
Current	0.36	2.34	3.42	4.74	6.3	A
Speed	6,960	6,340	6,020	5,580	5,100	rpm
Output Torque	0	620	970	1,400	1,910	gcm
Efficiency	0	72	73	70	66	%
External Forced Ventilation Cooling	If the shell temperature of the motor is higher than 85℃, more effective cooling equipments must be installed. Otherwise the motor may be damaged by hotness.					

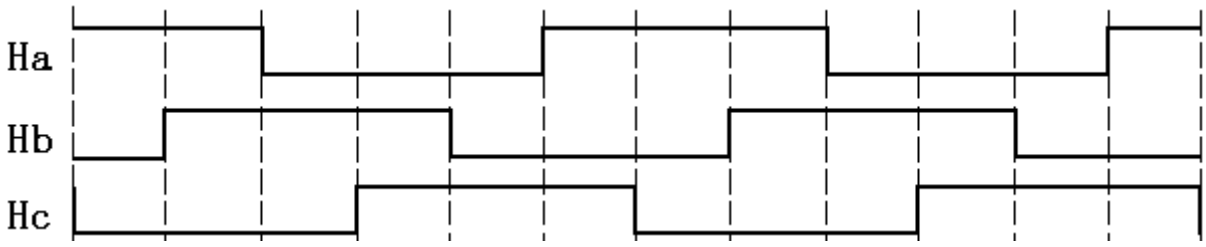


Φ40-4027-24 BLDC Connection Diagram and Hall Output Waveforms

- 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)







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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