



YS50-40258-220 Brushless DC Motor Product Datasheet

YS50-40258-220 BLDC Overview

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



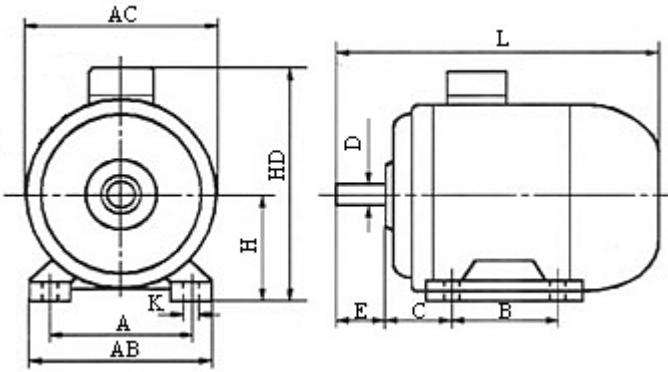
Parameters	YS50-40258-220 BLDC Absolute Maximum Ratings	Unit
Peak Current	4.5	A
Speed	5000	rpm
Winding and Rotor Temperature	-20 to +130	°C
Ambient Temperature	-20 to +85	°C

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

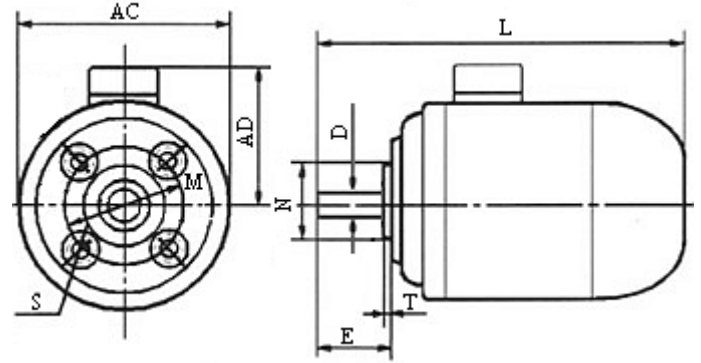
Parameters	YS50-40258-220 BLDC Intrinsic Characteristics (20°C)	Unit
Resistance (Including 0.5m Line)	14	Ohm
Speed-Torque Gradient	860	rpm/Nm
Torque Constant	0.55	Nm/A
Speed Constant	18	rpm/V
Back-EMF Constant	54	mV/rpm
Rotor Magnetic Poles	4	Poles
Ball Bearing No Load Continuous Life (At Nominal Voltage)	30000	Hours
Weight (Including 0.5m Line)	Approximate 2100	g



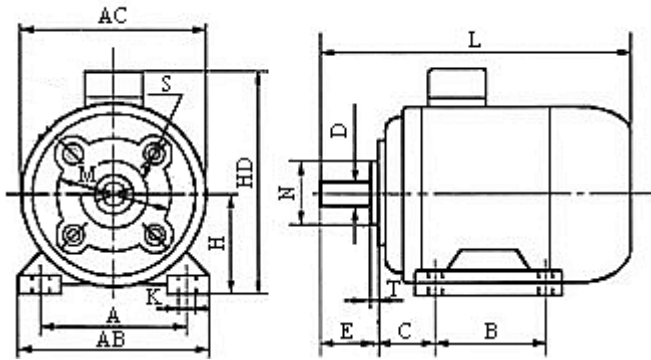
YS50-40258-220 BLDC Physical Size (Unit: mm)



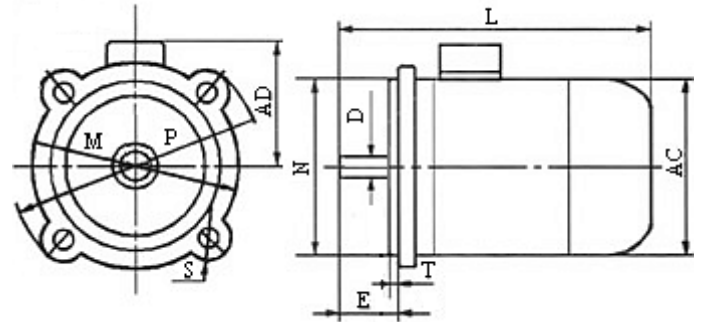
IMB3



IMB14



IMB34



IMB5

IMB3	A	B	C	D	E	H	K	L	AB	AC	HD
	80	63	32	9	20	50	5.8	155	100	100	125

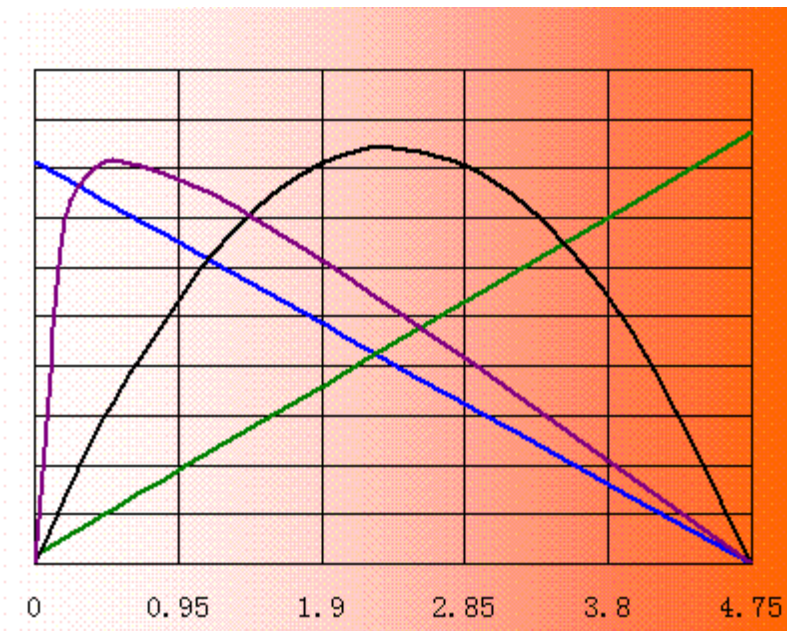
IMB14	D	E	L	M	N	S	T	AC	AD
	9	20	155	55	40	M5	2.5	100	75

IMB34	A	B	C	D	E	H	K	L	M	N	S	T	AB	AC	HD
	80	63	32	9	20	50	5.8	155	55	40	M5	2.5	100	100	125

IMB5 None	D	E	L	M	N	P	S	T	AC	AD
	-	-	-	-	-	-	-	-	-	-



Parameters	YS50-40258-220 BLDC Performance Characteristics (20°C)					Unit
Nominal Voltage	220					V
Maximum Output Power	507					W
(See Curves Below)	No Load Point	Some Loaded Points Performance				
Output Torque	0	0.5	0.8	1.1	1.4	Nm
Output Speed	4070	3640	3380	3120	2870	rpm
Input Current	0.17	1.07	1.61	2.15	2.69	A
Output Power	0	191	283	359	421	W
Efficiency	0	81	80	76	71	%
Internal Fan Air Blast Cooling	<u>If the shell temperature of the motor is higher than 85°C, more effective cooling equipments must be installed. Otherwise the motor may be damaged by hotness.</u>					



η (%) P(W) I(A) N(rpm)
 100 600 10 5000

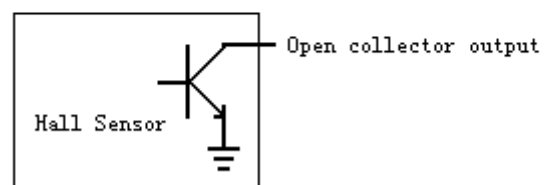
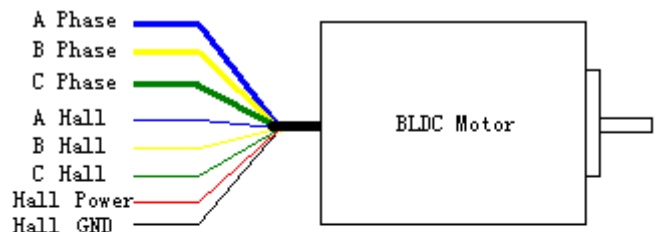
Speed vs. Torque : N -----
 Current vs. Torque : I -----
 Output Power vs. Torque : P -----
 Efficiency vs. Torque : η -----

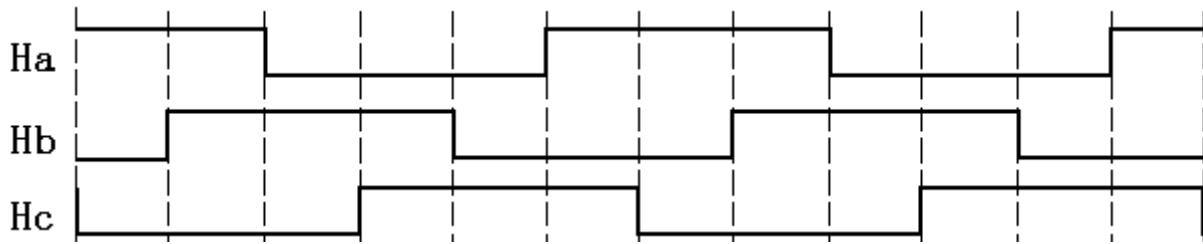
Short Term
 Operation Range:

Torque(Nm)

YS50-40258-220 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 Supply 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)

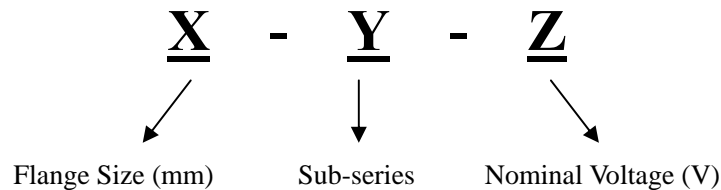




Hall Sensor Output Commutation Waveforms

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 Product Code Regulation



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