



YS56-48256-220 Brushless DC Motor Product Datasheet

YS56-48256-220 BLDC Overview

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



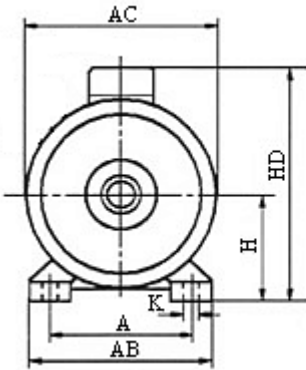
Parameters	YS56-48256-220 BLDC Absolute Maximum Ratings	Unit
Peak Current	7.6	A
Speed	5000	rpm
Winding and Rotor Temperature	-20 to +130	°C
Ambient Temperature	-20 to +85	°C

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

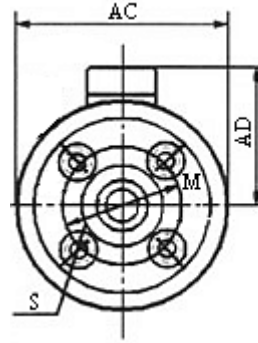
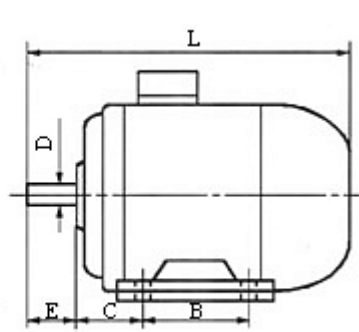
Parameters	YS56-48256-220 BLDC Intrinsic Characteristics (20°C)		Unit
Resistance (Including 0.5m Line)	17		Ohm
Inductance (Including 0.5m Line)	14		mH
Speed-Torque Gradient	470		rpm/Nm
Torque Constant	0.54		Nm/A
Speed Constant	17		rpm/V
Back-EMF Constant	58.4		mV/rpm
Rotor Magnetic Poles	4		Poles
Ball Bearing No Load Continuous Life (At Nominal Voltage)	30000	<u>(Please order if have special requirement)</u>	Hours
Weight (Including 0.5m Line)	Approximate	3500	g



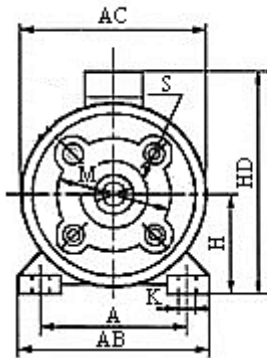
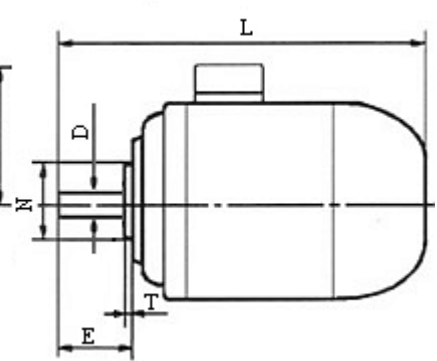
YS56-48256-220 BLDC Physical Size (Unit: mm)



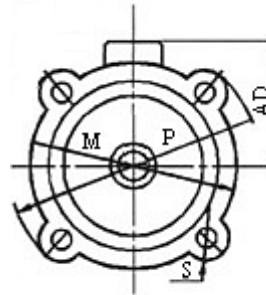
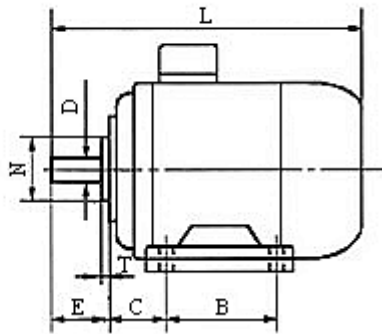
IMB3



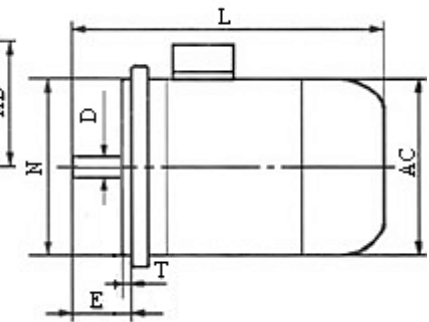
IMB14



IMB34



IMB5



IMB3	A	B	C	D	E	H	K	L	AB	AC	HD
	90	71	36	9	20	56	7	190	115	110	140

IMB14	D	E	L	M	N	S	T	AC	AD
	9	20	190	65	50	M5	2.5	110	80

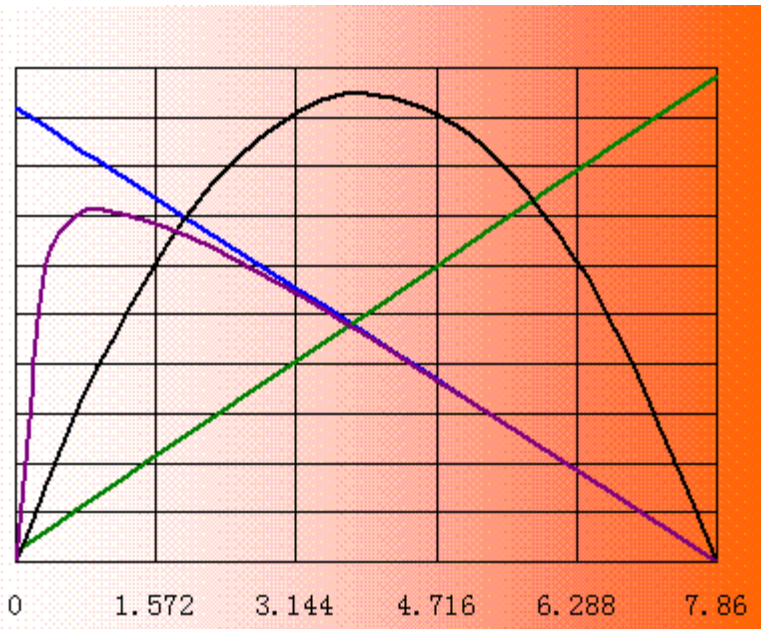
IMB34	A	B	C	D	E	H	K	L	M	N	S	T	AB	AC	HD
	90	71	36	9	20	56	7	190	65	50	M5	2.5	115	110	140

IMB5	D	E	L	M	N	P	S	T	AC	AD
	9	20	190	100	80	120	9	2.5	110	80

- Feet: Removable
- Outer Shaft: Standard Dia 9, Max Dia 12



Parameters	YS56-48256-220 BLDC Performance Characteristics (20°C)					Unit
Nominal Voltage	220					V
Maximum Output Power (P2)	757					W
(See Curves Below)	No Load Point	Some Loaded Points Performance				
Output Torque (T)	0	0.8	1.1	1.4	1.7	Nm
Output Speed (N)	3680	3300	3160	3020	2880	rpm
Input Current (I)	0.31	1.78	2.33	2.89	3.44	A
Output Power (P2)	0	276	364	443	513	W
Efficiency (η)	0	70	71	70	68	%
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(%) P2(W) I(A) N(rpm)
100 **800** **15** **4000**

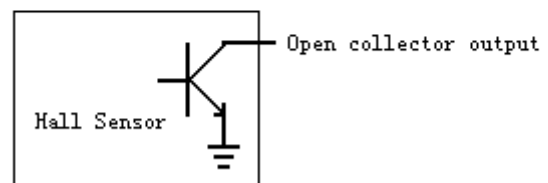
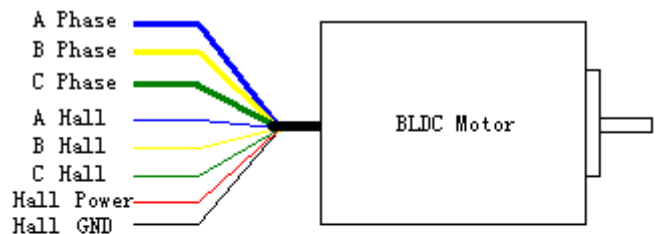
Efficiency vs. Torque: η -----
 Output Power vs. Torque: P2 -----
 Current vs. Torque: I -----
 Speed vs. Torque: N -----

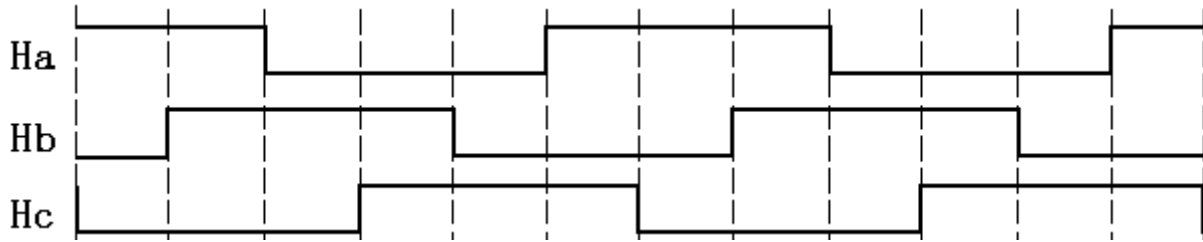
Short Term
 Operation Range:

Torque (Nm)

YS56-48256-220 BLDC Connection Diagram and Hall Output Waveforms

- Three Phases: AWG18, Blue thick--A phase, Yellow thick--B phase, Green thick--C phase
- Halls: AWG24, 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 20mA
- Hall Output: Open collector. Require external pull-up resistors. Maximum output voltage is 16V
- Electrical Hall Sensor Phasing: 120°
- Line Length: 0.5m, (Please order if have special requirement)

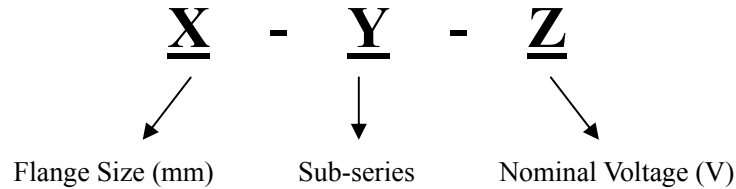




Hall Sensor Output Commutation Waveforms

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.

Eletech BLDC Motor Product Code Regulation



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