



## 82(NEMA34)-352120-220 Brushless DC Motor Product Datasheet

### 82-352120-220 BLDC Overview

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

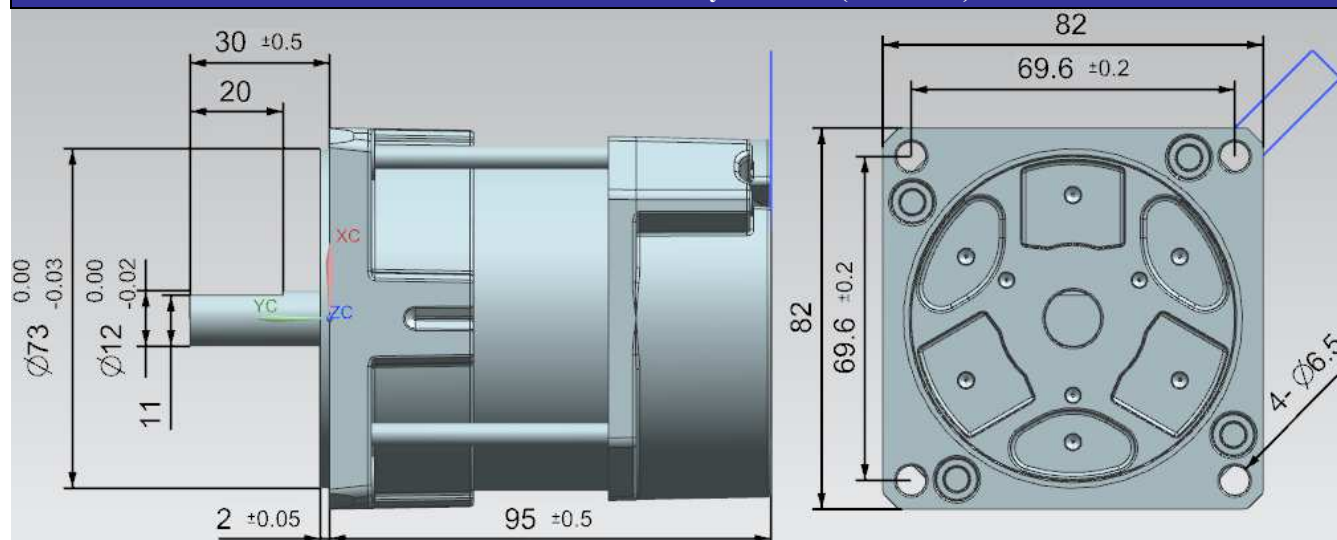


Parameters	82-352120-220 BLDC Absolute Maximum Ratings	Unit
Rotor/Bearing Broken Speed	20000	rpm
Winding and Rotor Temperature	130	°C
Front/Rear Lids Surface Temperature	0 to 70	°C
HIPOT (Winding to Shell)	2000VDC, 1s	

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

Parameters	82-352120-220 BLDC Intrinsic Characteristics (20°C)	Unit
Resistance (Including Line)	28	Ohm
Inductance (Including Line)	75	mH
Speed-Torque Gradient	1100	rpm/Nm
Torque Constant	0.66	Nm/A
Speed Constant	16	rpm/V
Back-EMF Constant	61	mV/rpm
Rotor Magnetic Poles	4	Poles
Weight (Including Line)	Approximate 1600	g

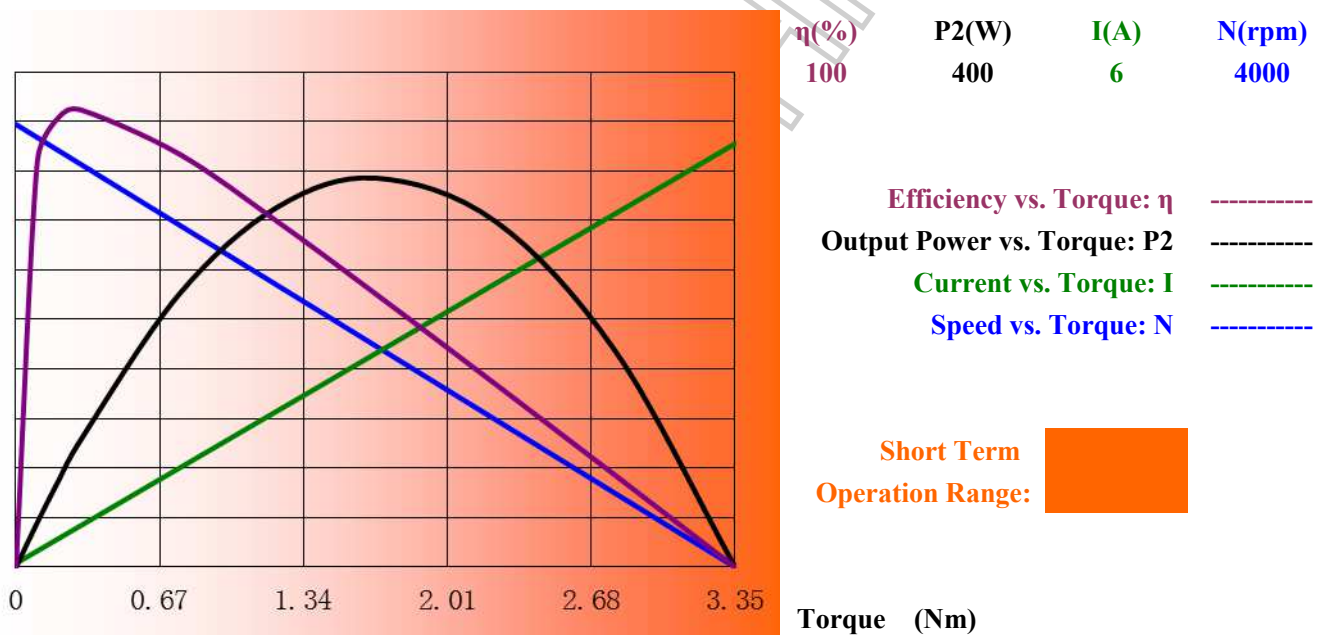
### 82-352120-220 BLDC Physical Size (Unit: mm)



Notice: Shaft could be custom made in batch order.

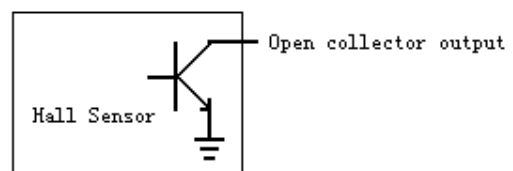
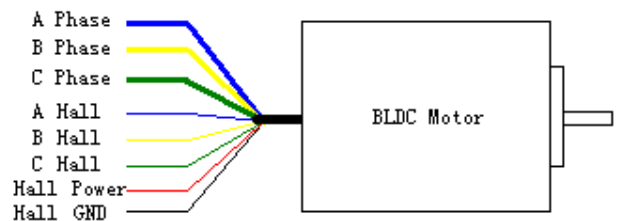


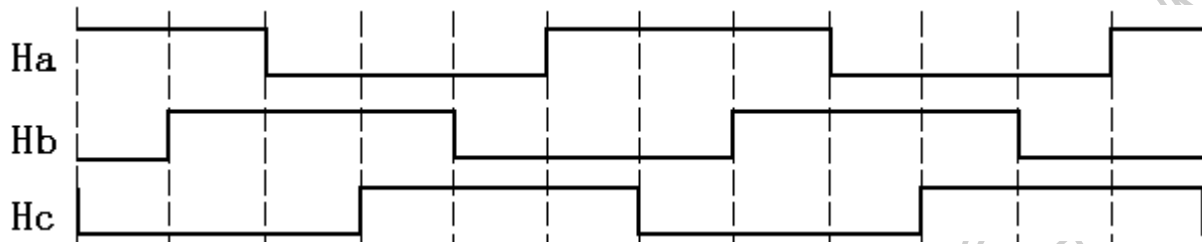
Parameters	82-352120-220 BLDC Performance Characteristics (20°C)					Unit
Nominal Voltage	220	VAC	Rectified and Filted	310	VDC	V
Maximum Output Power (P2)	310					W
(See Curves Below)	No Load Point	Some Loaded Points Performance				
Output Torque (T)	0	0.3	0.4	0.5	0.6	Nm
Output Speed (N)	3580	3260	3150	3050	2940	rpm
Input Current (I)	0.05	0.50	0.66	0.81	1.0	AAC
Output Power (P2)	0	102	132	160	185	W
Efficiency ( $\eta$ )	0	92	91	90	88	%
External Forced Ventilation Cooling	Please keep the front and rear air holes unblocked. If PTC protection is often active ( $R > 1K\Omega$ ), fan or other cooling equipments must be installed. Otherwise the motor may be damaged by hotness.					



### 82-352120-220 BLDC Connection Diagram and Hall Output Waveforms

- Three Phases: AWG18, thick lines, Blue--A phase, Yellow--B phase, Green--C phase
- Halls: AWG24, thin lines, Blue--A hall, Yellow--B hall, Green--C hall, Red--Hall Positive, Black--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°
- PTC: MZ6-105, Tk=105C, AWG24, Brown--Brown.
- Line Length: 0.5m

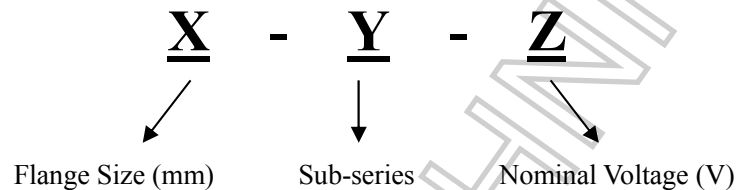




Hall Sensor Output Commutation Waveforms

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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