



## 82(NEMA34)-25280-220 Brushless DC Motor Product Datasheet

### 82-25280-220 BLDC Overview

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

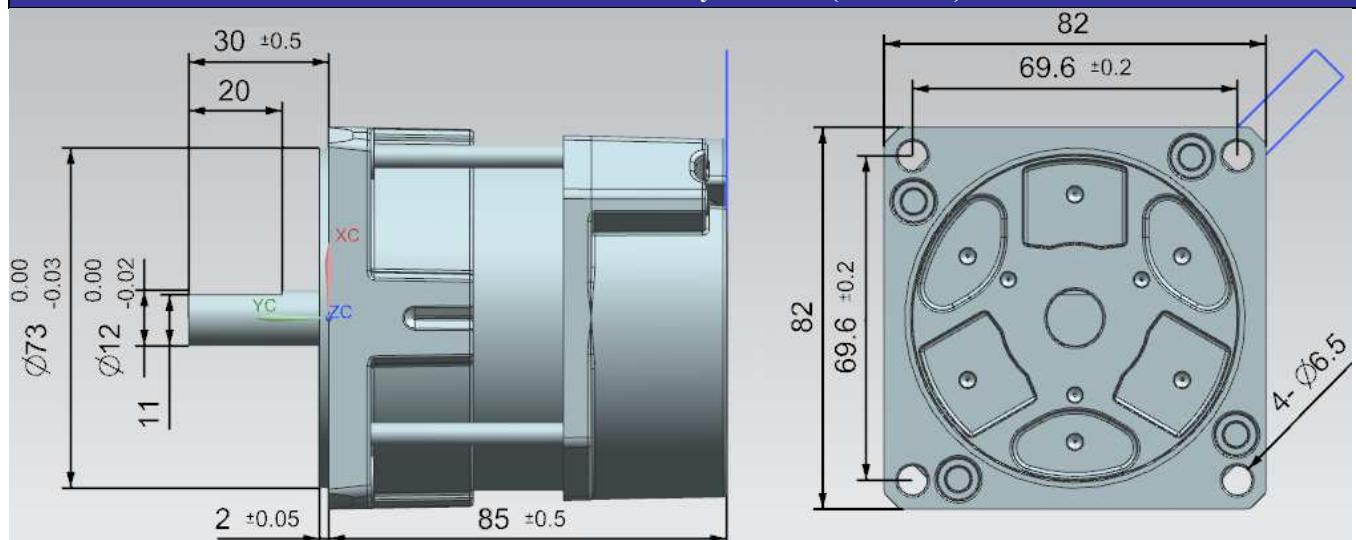


| Parameters                          | 82-25280-220 BLDC Absolute Maximum Ratings | Unit |
|-------------------------------------|--|------|
| Rotor/Bearing Broken Speed          | 20000                                      | rpm  |
| Winding and Rotor Temperature       | 130  | °C   |
| Front/Rear 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                  | 82-25280-220 BLDC Intrinsic Characteristics (20°C) |      | Unit   |
|-----------------------------|--|------|--------|
| Resistance (Including Line) | 12   |      | Ohm    |
| Inductance (Including Line) | 21   |      | mH     |
| Speed-Torque Gradient       | 2800   |      | rpm/Nm |
| Torque Constant             | 0.34   |      | Nm/A   |
| Speed Constant              | 35   |      | rpm/V  |
| Back-EMF Constant           | 29   |      | mV/rpm |
| Rotor Magnetic Poles        | 4  |      | Poles  |
| Weight (Including Line)     | Approximate  | 1320 | g      |

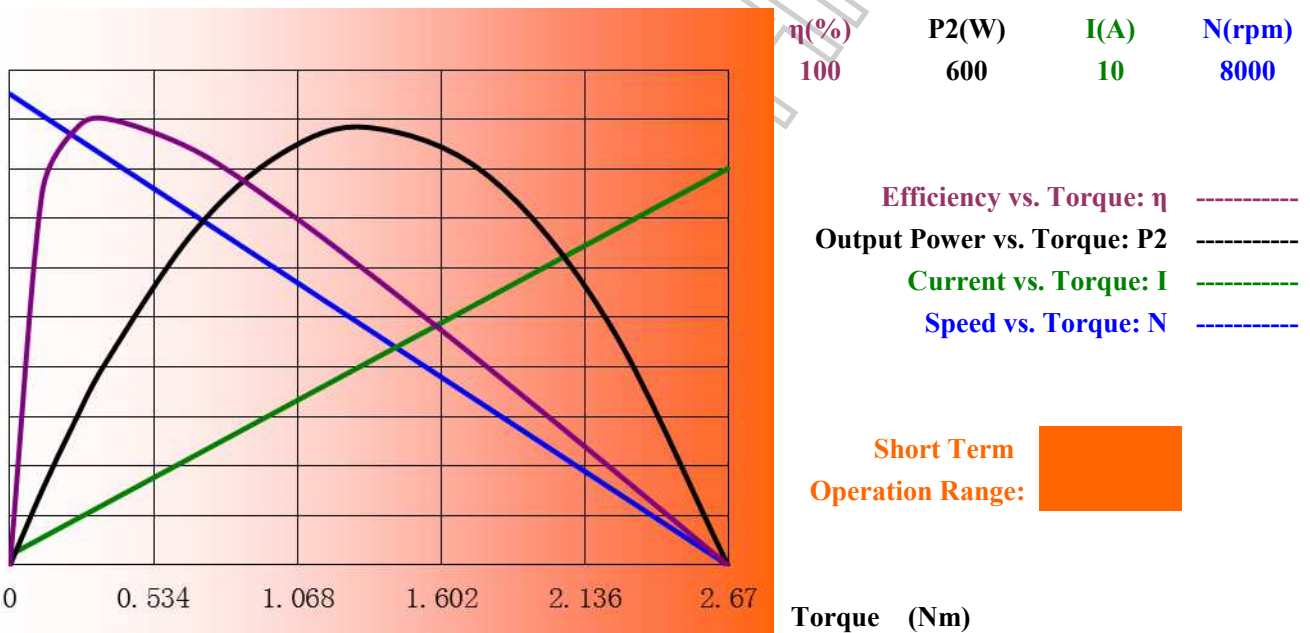
### 82-25280-220 BLDC Physical Size (Unit: mm)



**Notice:** Shaft could be custom made in batch order.

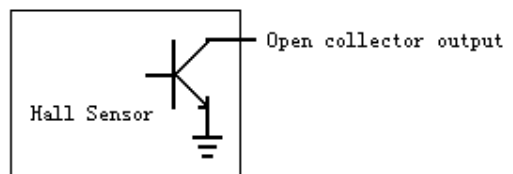
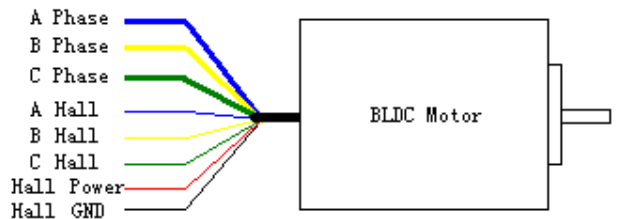


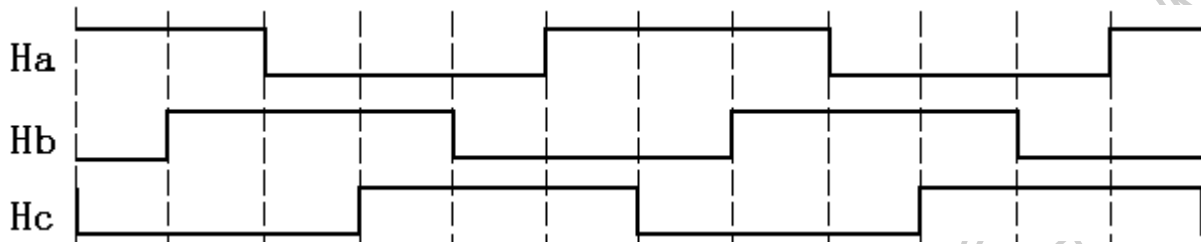
| Parameters                          | 82-25280-220 BLDC Performance Characteristics (20°C)   |                                |      |      |         | Unit |
|-------------------------------------|--|--------------------------------|------|------|---------|------|
| Nominal Voltage                     | 220 VAC  | Rectified and Filted           |      |      | 310 VDC | V    |
| Maximum Output Power (P2)           | 530  |                                |      |      |         | W    |
| (See Curves Below)                  | No Load Point  | Some Loaded Points Performance |      |      |         |      |
| Output Torque (T)                   | 0  | 0.1                            | 0.2  | 0.3  | 0.4     | Nm   |
| Output Speed (N)                    | 7600   | 7320                           | 7040 | 6760 | 6480    | rpm  |
| Input Current (I)                   | 0.20   | 0.49                           | 0.78 | 1.1  | 1.4     | AAC  |
| Output Power (P2)                   | 0  | 77                             | 147  | 212  | 271     | W    |
| Efficiency (η)                      | 0  | 71                             | 85   | 90   | 90      | %    |
| External Forced Ventilation Cooling | Please keep the front and rear air holes unblocked. If PTC protection is often active (R>1Kohm), fan or other cooling equipments must be installed. Otherwise the motor may be damaged by hotness. |                                |      |      |         |      |



### 82-25280-220 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

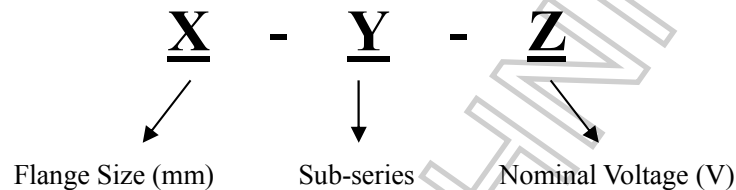




Hall Sensor Output Commutation Waveforms

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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