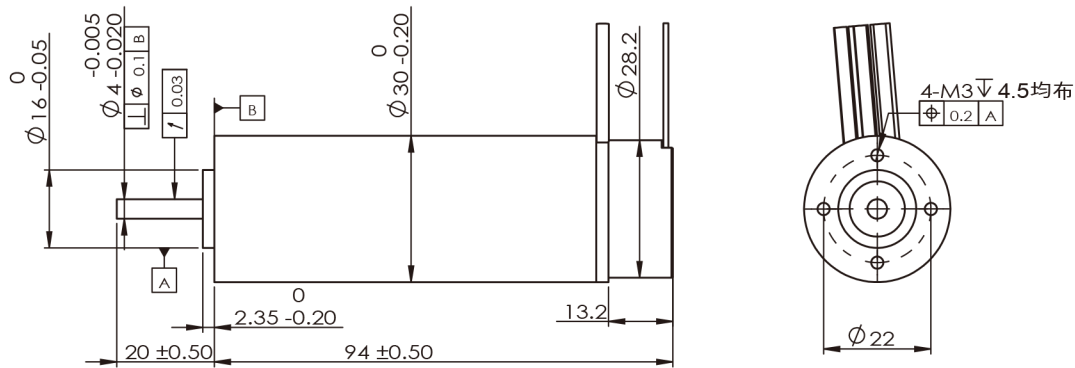




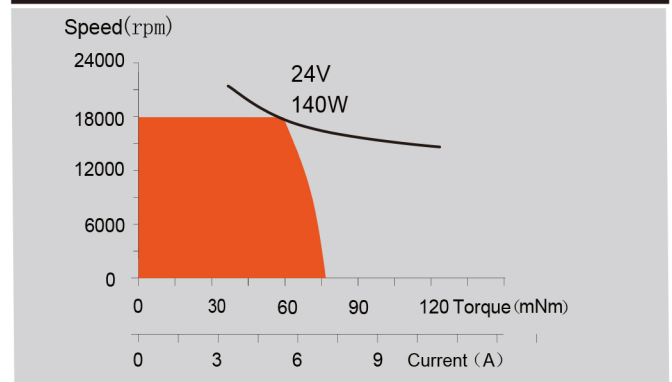
### Motor Data

|    | Motor model           |           |         | SBR309424B | SBR309436B | SBR309448B |  |
|----|-----------------------|-----------|---------|------------|------------|------------|--|
| 1  | Nominal voltage       | V         | V       | 24         | 36         | 48         |  |
| 2  | No load speed         | rpm       | Wnl     | 20000      | 30000      | 30000      |  |
| 3  | No load current       | mA        | InI     | <500       | <600       | <600       |  |
| 4  | Nominal speed         | rpm       | Wc      | 18000      | 26500      | 28000      |  |
| 5  | Nominal torque        | mNm       | Tc      | 74.1       | 64.4       | 68.4       |  |
| 6  | Nominal current       | A         | Ic      | 6.5        | 5.6        | 4.5        |  |
| 7  | Output power          | W         | Pc      | 140        | 179        | 200        |  |
| 8  | Stall torque          | mNm       | Tmax    | 1365       | 1842       | 1963       |  |
| 9  | Stall current         | A         | Imax    | 133.3      | 180.6      | 141.2      |  |
| 10 | Max. efficiency       | %         | ηmax    | 89         | 89         | 92.5       |  |
| 11 | Terminal resistance   | Ω         | Rt      | 0.18       | 0.18       | 0.34       |  |
| 12 | Terminal inductance   | L         | mH      | 0.2        | 0.2        | 0.27       |  |
| 13 | Torque constant       | mNm / A   | Kt      | 11.4       | 11.5       | 15.2       |  |
| 14 | Speed constant        | rpm / V   | Kn      | 837.6      | 830.4      | 628.2      |  |
| 15 | Speed torque gradient | rpm / mNm | Δn / ΔT | 242.9      | 411.5      | 409.4      |  |

### Specifications

|    |                                    |          |              |
|----|------------------------------------|----------|--------------|
| 1  | ambient temperature                | Ta       | -20~+65 °C   |
| 2  | max. winding temperature           | Tcoilmax | +85 °C       |
| 3  | max. speed                         | Nmax     | 30000 rpm    |
| 4  | axial play                         | Δt       | 0.05-0.15 mm |
| 5  | number of pole pairs               | 2p       | 1            |
| 6  | number of commutator segments      |          | 3            |
| 7  | weight of motor                    | Wt       | 360 g        |
| 8  | Max. axial load (dynamic)          |          | 5N           |
| 9  | Max. force for press fits (static) |          | 98N          |
| 10 | Max. radial load, 4 mm from flange |          | 25N          |

### Operating Range



### Terminal definitions

|       |   |    |            |                                        |
|-------|---|----|------------|----------------------------------------|
| Green | U | 1  | +5V        | Magnet Encoder<br>3 Channel<br>1000CPT |
| Black | V | 2  | GND        |                                        |
| Red   | W | 3  | Channel A- |                                        |
|       |   | 4  | Channel A+ |                                        |
|       |   | 5  | Channel B- |                                        |
|       |   | 6  | Channel B+ |                                        |
|       |   | 7  | Channel Z- |                                        |
|       |   | 8  | Channel Z+ |                                        |
|       |   | 9  | Hall3      |                                        |
|       |   | 10 | Hall2      |                                        |
|       |   | 11 | Hall1      |                                        |