

Ironless Linear Motor

JKB1

JKB2

JKB3

JKB4

JKB5

JKB6

Ironless Linear Motor

JKB1

JKB2

JKB3

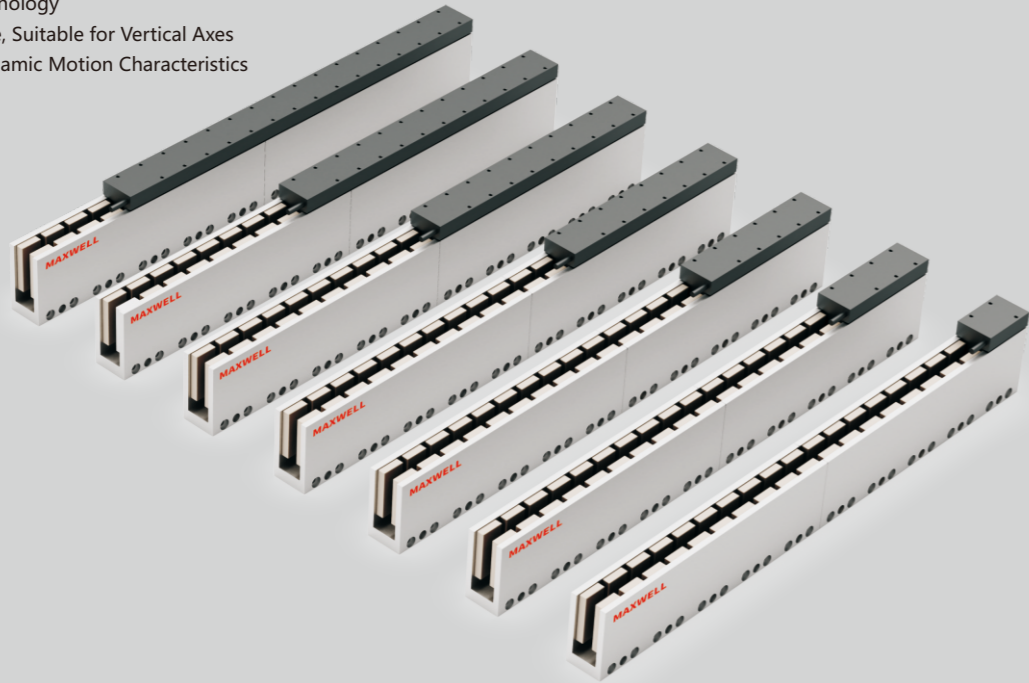
JKB4

JKB5

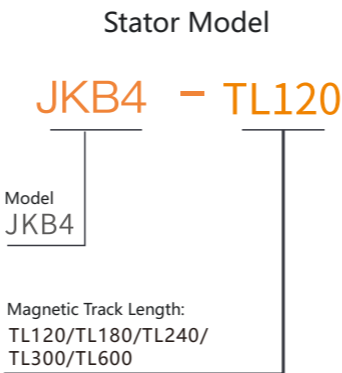
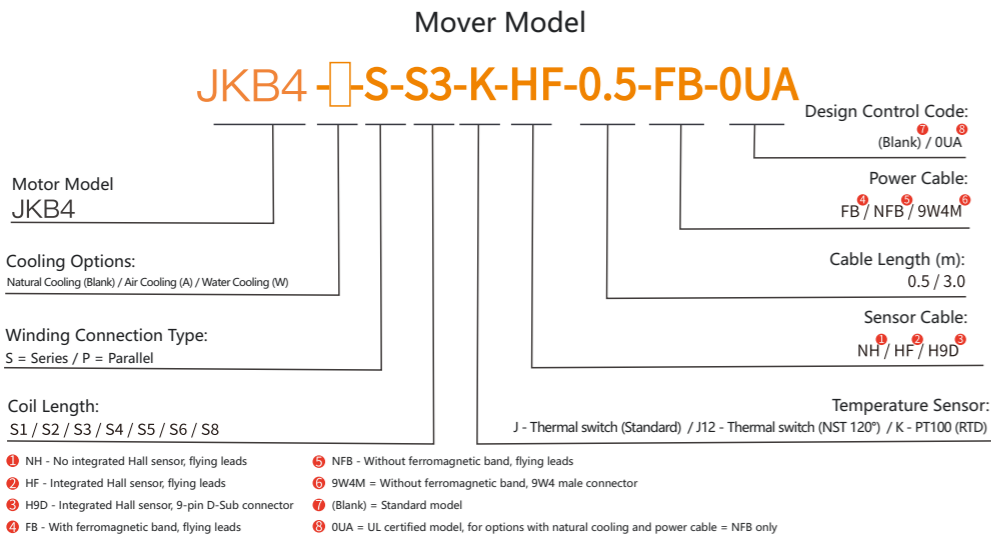
JKB6

Ironless Linear Motor

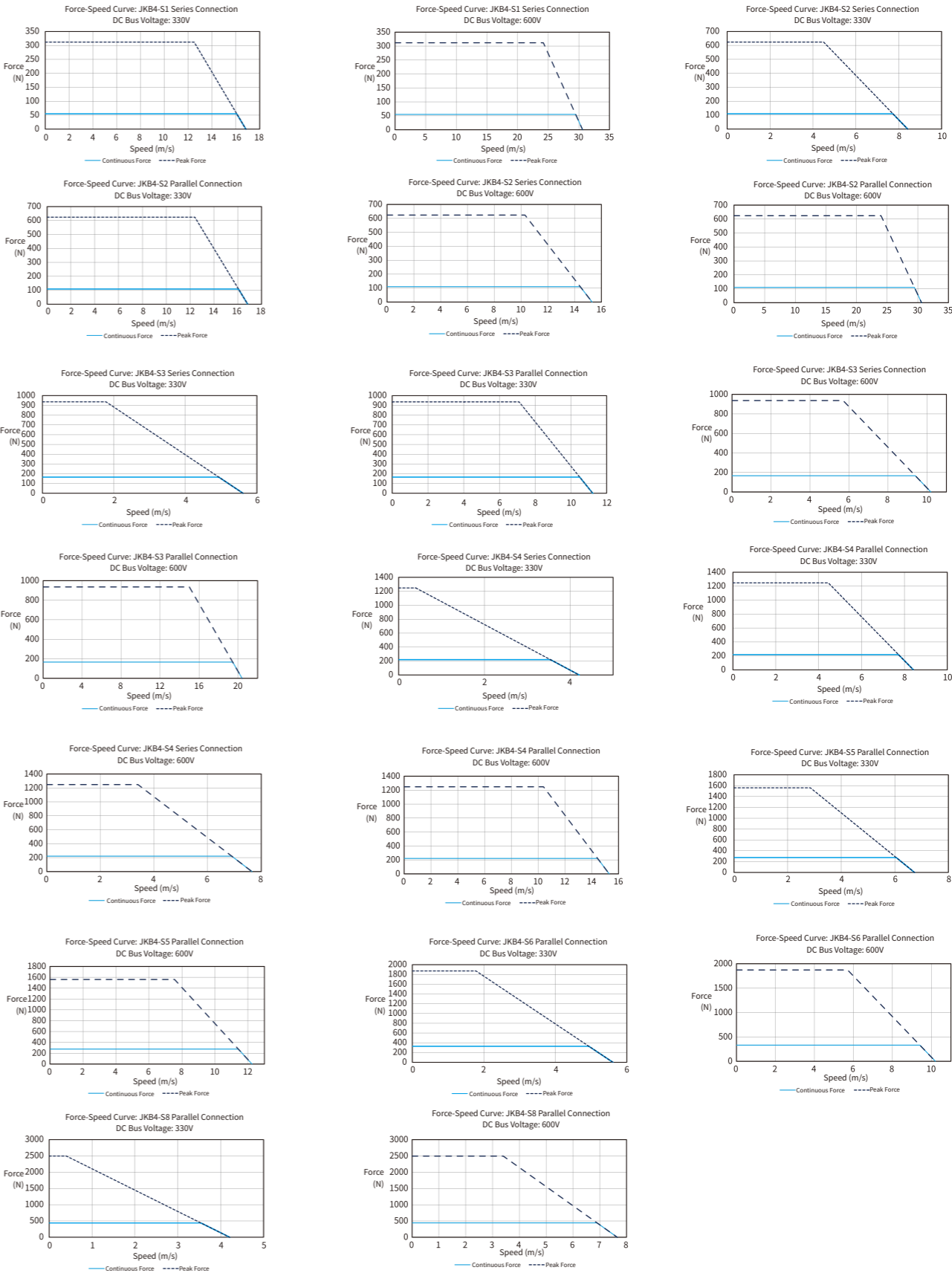
- Ironless Technology
- Compact Size, Suitable for Vertical Axes
- Excellent Dynamic Motion Characteristics



Model Number Designation System



JKB4 Series: Thrust Graph



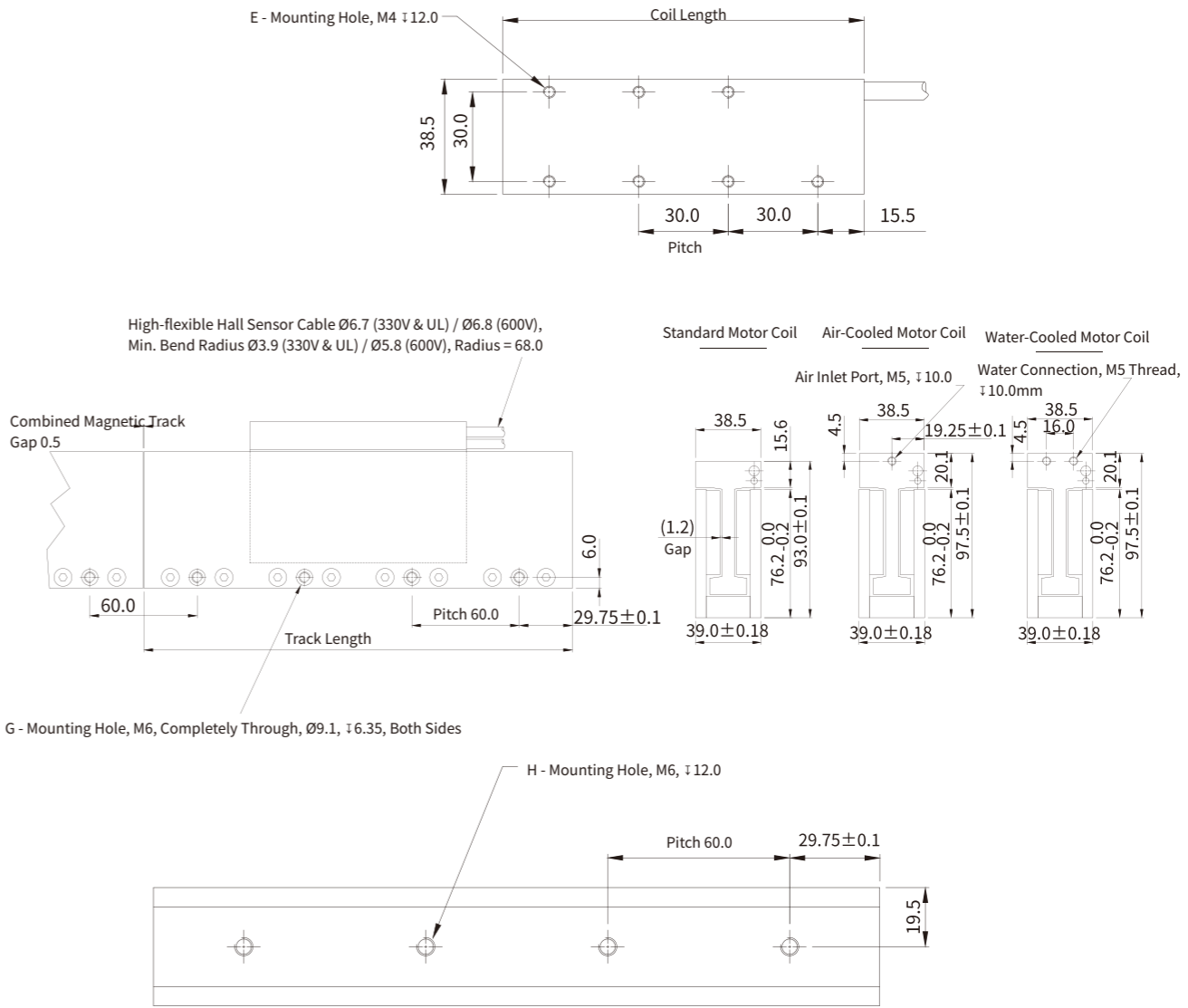
|   |                    |  | JKB4-S1 | JKB4-S2 | JKB4-S3  | JKB4-S4 | JKB4-S5  | JKB4-S6 | JKB4-S8  |          |          |          |
|---|--------------------|--|---------|---------|----------|---------|----------|---------|----------|----------|----------|----------|
| Performance Parameters  | Symbol             | Unit   | Series  | Series  | Parallel | Series  | Parallel | Series  | Parallel | Parallel | Parallel | Parallel |
| Continuous Thrust (Natural Cooling) @100°C <sup>❶</sup>         | F <sub>Cn</sub>    | N  | 55      | 110     | 110      | 166     | 166      | 221     | 221      | 276      | 331      | 442      |
| Continuous Thrust (Air Cooling) @100°C <sup>❶</sup>             | F <sub>Ca</sub>    | N  | 66      | 132     | 132      | 199     | 199      | 265     | 265      | 331      | 397      | 530      |
| Continuous Thrust (Water Cooling) @100°C <sup>❶❷</sup>          | F <sub>Cw</sub>    | N  | 72      | 144     | 144      | 215     | 215      | 287     | 287      | 359      | 431      | 574      |
| Peak Thrust   | F <sub>pk</sub>    | N  | 312     | 624     | 624      | 936     | 936      | 1248    | 1248     | 1560     | 1872     | 2496     |
| Force Constant ±10%   | K <sub>f</sub>     | N/Arms   | 24.0    | 48.0    | 24.0     | 72.0    | 36.0     | 96.0    | 48.0     | 60.0     | 72.0     | 96.0     |
| Back EMF Constant ±10%  | K <sub>e</sub>     | Vpeak/(m/s)  | 19.6    | 39.2    | 19.6     | 58.8    | 29.4     | 78.4    | 39.2     | 49.0     | 58.8     | 78.4     |
| Motor Constant @25°C  | K <sub>m</sub>     | N/Sqrt(W)  | 9.1     | 12.9    | 12.7     | 15.7    | 15.7     | 18.2    | 18.2     | 20.3     | 22.3     | 25.7     |
| Phase-to-Phase Resistance @25°C ±10% <sup>❷</sup>               | R <sub>25</sub>    | Ω  | 4.68    | 9.33    | 2.43     | 13.97   | 3.52     | 18.62   | 4.68     | 5.84     | 7.00     | 9.33     |
| Phase-to-Phase Inductance ±40% <sup>❸</sup>                     | L                  | mH   | 3.83    | 7.67    | 1.92     | 11.50   | 2.87     | 15.33   | 3.83     | 4.79     | 5.75     | 7.67     |
| Electrical Time Constant  | τ <sub>e</sub>     | ms   | 0.82    | 0.82    | 0.79     | 0.82    | 0.82     | 0.82    | 0.82     | 0.82     | 0.82     | 0.82     |
| Continuous Current (Natural Cooling) @100°C <sup>❶</sup>        | I <sub>Cn</sub>    | Arms   | 2.3     | 2.3     | 4.6      | 2.3     | 4.6      | 2.3     | 4.6      | 4.6      | 4.6      | 4.6      |
| Continuous Current (Air Cooling) @100°C <sup>❶</sup>            | I <sub>Ca</sub>    | Arms   | 2.8     | 2.8     | 5.5      | 2.8     | 5.5      | 2.8     | 5.5      | 5.5      | 5.5      | 5.5      |
| Continuous Current (Water Cooling) @100°C <sup>❶❷</sup>         | I <sub>Cw</sub>    | Arms   | 3.0     | 3.0     | 6.0      | 3.0     | 6.0      | 3.0     | 6.0      | 6.0      | 6.0      | 6.0      |
| Peak Current  | I <sub>pk</sub>    | Arms   | 13.0    | 13.0    | 26.0     | 13.0    | 26.0     | 13.0    | 26.0     | 26.0     | 26.0     | 26.0     |
| Continuous Thermal Power (Natural Cooling) @ 100°C <sup>❶</sup> | P <sub>Cn</sub>    | W  | 48      | 95      | 99       | 143     | 144      | 190     | 191      | 239      | 286      | 381      |
| Continuous Thermal Power (Air Cooling) @ 100°C <sup>❶</sup>     | P <sub>Ca</sub>    | W  | 69      | 137     | 143      | 206     | 207      | 274     | 276      | 344      | 412      | 549      |
| Continuous Thermal Power (Water Cooling) @ 100°C <sup>❶❷</sup>  | P <sub>Cw</sub>    | W  | 81      | 161     | 168      | 241     | 243      | 322     | 324      | 404      | 484      | 645      |
| Max. Coil Temperature   | t <sub>max</sub>   | °C   | 100     | 100     | 100      | 100     | 100      | 100     | 100      | 100      | 100      | 100      |
| Thermal Dissipation Constant (Natural Cooling) <sup>❶</sup>     | K <sub>thn</sub>   | W/°C   | 0.6     | 1.3     | 1.3      | 1.9     | 1.9      | 2.5     | 2.6      | 3.2      | 3.8      | 5.1      |
| Thermal Dissipation Constant (Air Cooling) <sup>❶</sup>         | K <sub>tha</sub>   | W/°C   | 0.9     | 1.8     | 1.9      | 2.7     | 2.8      | 3.7     | 3.7      | 4.6      | 5.5      | 7.3      |
| Thermal Dissipation Constant (Water Cooling) <sup>❶❷</sup>      | K <sub>thw</sub>   | W/°C   | 1.1     | 2.1     | 2.2      | 3.2     | 3.2      | 4.3     | 4.3      | 5.4      | 6.5      | 8.6      |
| Max. Bus Voltage  | U <sub>bus</sub>   | Vdc  | 600     | 600     | 600      | 600     | 600      | 600     | 600      | 600      | 600      | 600      |
| Electromagnetic Period  | T <sub>NN</sub>    | mm   | 60      | 60      | 60       | 60      | 60       | 60      | 60       | 60       | 60       | 60       |
| Magnetic Attraction Force                                       | F <sub>a</sub>     | kN   | 0       | 0       | 0        | 0       | 0        | 0       | 0        | 0        | 0        | 0        |
| Mechanical Parameters   |                    |  |         |         |          |         |          |         |          |          |          |          |
| Coil Mass (Natural Cooling)                                     | m <sub>Cn</sub>    | kg   | 0.28    | 0.56    | 0.56     | 0.89    | 0.89     | 1.19    | 1.19     | 1.49     | 1.78     | 2.37     |
| Coil Length (Natural Cooling)                                   | L <sub>Cn</sub>    | mm   | 61.0    | 121.0   | 121.0    | 181.0   | 181.0    | 241.0   | 241.0    | 301.0    | 361.0    | 481.0    |
| Coil Length (Air Cooling)                                       | L <sub>Ca</sub>    | mm   | 61.0    | 121.0   | 121.0    | 181.0   | 181.0    | 241.0   | 241.0    | 301.0    | 361.0    | 481.0    |
| Coil Length (Water Cooling)                                     | L <sub>Cw</sub>    | mm   | 61.0    | 121.0   | 121.0    | 181.0   | 181.0    | 241.0   | 241.0    | 301.0    | 361.0    | 481.0    |
| Magnetic Track Mass (per meter)                                 | m <sub>track</sub> | kg/m   | 14.75   | 14.75   | 14.75    | 14.75   | 14.75    | 14.75   | 14.75    | 14.75    | 14.75    | 14.75    |
| Other Information   |                    |  |         |         |          |         |          |         |          |          |          |          |
| Insulation Level  |                    | Class B (130°C)  |         |         |          |         |          |         |          |          |          |          |
| Protection Grade  |                    | IP00   |         |         |          |         |          |         |          |          |          |          |
| Compliance Standards  |                    | RoHS, CE, UL (option)  |         |         |          |         |          |         |          |          |          |          |
| Ambient Temperature   | Operating          | 0°C - 40°C (no icing)  |         |         |          |         |          |         |          |          |          |          |
|   | Storage            | -15°C to 70°C (no icing)   |         |         |          |         |          |         |          |          |          |          |
| Ambient Humidity  | Operating          | 10% to 80% RH (no condensation)  |         |         |          |         |          |         |          |          |          |          |
|   | Storage            | 10% to 90% RH (no condensation)  |         |         |          |         |          |         |          |          |          |          |
| Recommended Operating Environment                               |                    | Indoor (no direct sunlight)<br>Free from corrosive gases, flammable gases, oil mist, or dust |         |         |          |         |          |         |          |          |          |          |

- ❶ Measured at 25°C room temperature, depending on heat dissipation conditions.
- ❷ Resistance measured with DC current, including 0.5m standard cable.
- ❸ Inductance measured at 1kHz. The wide tolerance range (±40%) for JKB series is due to differences in three-phase inductance. The catalog value represents the average of maximum and minimum values, with each phase having ±20% tolerance.
- ❹ Water Cooling test conditions: coolant inlet temperature 20°C, flow rate 1.5L/min. (Detailed test conditions available upon request)
- Relevant parameters are subject to change without prior notice.

• JKB4: Dimensions



Lead Time: 15-20 Days  
\*The lead time is subject to change during special periods. Please consult our sales team.



| Motor Coil |             |    |    |
|------------|-------------|----|----|
| Coil Model | Coil Length | G  | H  |
| JKB4-TL120 | 119.5       | 2  | 2  |
| JKB4-TL180 | 179.5       | 3  | 3  |
| JKB4-TL240 | 239.5       | 4  | 4  |
| JKB4-TL300 | 299.5       | 5  | 5  |
| JKB4-TL600 | 599.5       | 10 | 10 |

| Motor Magnetic Track |              |    |
|----------------------|--------------|----|
| Track Model          | Track Length | E  |
| JKB4-S1              | 61.0         | 3  |
| JKB4-S2              | 121.0        | 7  |
| JKB4-S3              | 181.0        | 11 |
| JKB4-S4              | 241.0        | 15 |
| JKB4-S5              | 301.0        | 19 |
| JKB4-S6              | 361.0        | 23 |
| JKB4-S8              | 481.0        | 31 |

❹ For both air-cooled and water-cooled models, the coil length and the 'E' dimension remain identical to the standard model.